THE LEARNING EXPERIENCES OF FIRST YEAR ACCOUNTING STUDENT TEACHERS AND IMPLICATIONS ON CURRICULUM IMPLEMENTATION

By

MEDSON MAPUYA

Thesis Submitted in Fulfillment of the Requirements of the Degree Of

DOCTOR OF EDUCATION

In the

Faculty of Humanities

at the

Central University of Technology, Free State

Promoter: Dr A.M. Rambuda (Subject Didactics)

WELKOM

JUNE 2020

STATEMENT OF INDEPENDENT WORK (DECLARATION)

DECLARATION WITH REGARD TO

INDEPENDENT WORK

I,_Medson Mapuya, with student number , , do hereby declare that this research project submitted to the Central University of Technology, Free State for the Degree: Doctor of Education, is my own independent work; and complies with the Code of Academic Integrity, as well as other relevant policies, procedures, rules and regulations of the Central University of Technology, Free State; and has not been submitted before to any institution by myself of any other person in fulfilment (or partial fulfilment) of the requirements for the attainment of any qualification.

_____ _____

SIGNATURE OF STUDENT **DATE**

ACKNOWLEDGEMENTS

As a firm believer in Christianity, my first and most profound gratitude goes to my heavenly father above, for the life, the blessings, the opportunity, the energy, dedication and determination to successfully navigate through all the avenues of educational research towards the successful completion of this study. I would certainly not have been able to accomplish this mammoth task on my own. I give all the glory to God.

The above having been put to context and perspective, I would like to express my heartfelt thanks and appreciation to the following organisation and people, without whom this study would not have been realised.

- My promoter, Dr A. M. Rambuda, for his invaluable, indispensable expert and seasoned guidance, input and views in the entire study. Thank you for the detailed feedback and comments for each and every chapter of this thesis. Thank you for being a reliable and effective promoter and for travelling this journey of educational research with me. Thank you for your patience, encouragement and motivation. I am honoured and privileged to have learned from you.
- Central University of Technology, Free State for funding and the Library staff at the Central University of Technology, Free State (Welkom Campus) for their assistance with text books and interlibrary loans.
- All the first year B.Ed. Senior Phase & FET accounting student teachers, for their voluntary participation in this study. It would not have been successful without their input.
- My statistician, Mr Shaun van Wyk for his statistical services, insights and guidance in analysing the quantitative data from the correlational part of this study.
- My language editor, Mrs Renée Van der Merwe for professionally editing this thesis.

DEDICATION

I dedicate this thesis to my late brother, for being an ever present caring brother, a friend and a father figure in my life. He has always wanted the best for me and I know sure that he would have been there to celebrate this milestone achievement with me. I salute him for not only giving me a life and some dreams, but also for his unconditional support and motivation towards their fulfilment. I am thankful that I have been reached and touched by his life. As the Biblical Job critically observed, ***"Man, who is born of a woman is short of days full of trouble. Like a flower, he comes forth, then withers away; like a fleeting shadow, he does not endure"*** (Job 14 verses 1-2).

I also want to dedicate this study to my late father, who never had a chance to see me grow from one level to another in pursuit of academic excellence and in life in general.

Lastly, I want to dedicate this study to my mother and family, for being a source of inspiration not only in this study, but in my entire life.

ABSTRACT

This study explored the learning experiences of first year accounting student teachers and the implications such learning experiences have on curriculum implementation. The researcher sought to explore these learning experiences and the realities in the learning environment from a student perspective. To this effect, grounded in the theoretical assumptions of multiple intelligences and social constructivism, a sequential explanatory mixed methods design was used to answer the research questions and satisfy the research objectives. The population was all the first year B.Ed. accounting student teachers. Purposive sampling was used for the quantitative strand of the study while random sampling was used for the qualitative part. Data was collected using a Multiple Intelligence and Constructivist Learning Questionnaire which was specifically developed by the researcher for the study.

Guided by relevant literature, the sections of the questionnaire comprised of analytical intelligence, practical intelligence, creative intelligence, guided instruction and social constructivism. It had a total of eighty-six items which students had to rate between a scale of one and seven. For the correlational part of the quantitative strand, twenty-seven hypotheses were formulated for the Pearson correlation coefficient and *t*-tests. Descriptive statistics were used to analyse data on the students' scores on the extent to which they encountered learning activities which appealed to the constructs of multiple intelligences. Inferential statistics were used to analyse data on the relationship between age, gender and multiple intelligences, guided instruction and social constructivism and between multiple intelligences, guided instruction and social constructivism.

Descriptive statistics revealed that students moderately experienced learning activities which promoted analytical intelligence while they always experienced those which promoted practical intelligence. Creative intelligence was the most neglected one in the learning activities. Inferential statistics revealed no relationship between gender, age and multiple intelligences, guided instruction and social constructivism. However, a strong positive relationship was established between multiple intelligences, guided instruction and social constructivism. The quantitative findings were used to formulate 19 questions for the focus group interviews in the qualitative part of the study. These questions were also justified by relevant literature.

The qualitative verdicts and the phenomenological voices of the students concurred with the quantitative diagnosis. The findings establish and reaffirm the need to adopt social constructivist teaching approaches which are not only pedagogically compatible with the assumptions of multiple intelligences, but also stimulate and promote the development of all the cognitive levels of students as epitomised by the revised Bloom taxonomy.

The study has produced compelling empirical evidence to argue that in comparative terms student centred approaches are more appealing to both multiple intelligences and the revised Bloom taxonomy. The study convincingly established that student centred approaches do not only provide students with meaningful learning experiences, but also develop, enhance and promote their multiple intelligences and sustainable academic and cognitive development. Social constructivist teaching approaches have been established as pedagogically effective enough to galvanise students to participate in the teaching and learning process, take collective ownership of their learning progress and that of their classmates and to demonstrate enough intrinsic motivation in pursuit of academic objectives.

Informed by the study findings and the pedagogical ramifications of social constructivism, the theory of multiple intelligences and the instructional imperatives of the revised Bloom taxonomy, the study developed a model called the Curriculum Implementation and Attainment of Learning Objectives Model. The model is an embodiment and illustration of curriculum implementation which is anchored on a mirage of social constructivist learning perspectives towards the realisation of multiple intelligences and the cognitive learning objectives enshrined in the revised Bloom taxonomy.

Key words

Analytical Intelligence, Curriculum, Creative Intelligence, Guided Instruction, Learning Experiences, Learning Environment, Multiple Intelligences, Practical Intelligence, Social Constructivism.

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CHAPTER I

ORIENTATION TO THE STUDY

1.1 INTRODUCTION

The purpose of this chapter is to orient the reader to this research which explores the learning experiences of first year accounting student teachers and the implications these learning experiences have on curriculum implementation. The research is also inspired by the fact that despite meticulous investigations by academics, researchers, educational practitioners and educational psychologists on teaching and learning in higher education such as Fayombo (2015); Hattie (2009); Hodgson, Lam and Chow (2010); Litmanen, Loyens and Lonka (2014); Makola (2016); Millet (2015) and Radovan and Makovec (2015), there remain several gaps that still need to be researched. One of such areas is research on the learning experiences of students and how curriculum implementation influences and is influenced by such learning experiences of the students. Therefore, this research seeks to investigate the learning experiences of first year accounting student teachers and the implications these learning experiences have on curriculum implementation.

Another undeniable driving force behind this research is that regardless of the fact that teaching and learning strategies have been given attention over the last two decades in educational literature (Fardon, 2013; Fayombo, 2015; Gawe, Jacobs, Vakalisa, 2017; Killen, 2016; Mapuya.2018; McKernan,2008; Riener and Willingham, 2010 and Visser and Vreken, 2013), there seems to be very little research on the implications of learning experiences of students in curriculum implementation. The manner in which the curriculum is implemented has some significant implications on how students perceive their teaching and learning experiences and subsequently on their academic performance and the institution's course completion rates. In McKernan's (2008) perspective, a curriculum embodies the planning and implementation of educational experiences through carefully planned procedures made from well thought selection of relevant approaches. It is therefore against this background that this study is proposed and found necessary.

It is important for the researcher to give an account of some of the compelling factors and circumstances that are embodied in the various studies on learning experiences of students and their educational implications. As such, the background of the study,

in which the researcher highlights such compelling factors and circumstances that culminated in this study will now be presented.

1.2 BACKGROUND TO THE STUDY

While this study is conducted in the context of a higher education learning environment, it is important to acknowledge the identified deficiencies in the pedagogical competencies of accounting teachers to teach the subject effectively in secondary schools. At secondary school level, Masondo and Fengu (2019) report that the Department of Basic Education is gravely concerned about the decline in the number of learners taking up accounting and business studies. Inadequate teaching approaches have been cited as major contributing factors. It is also suggested that if this problem is not addressed and dealt with effectively on time, South Africa will have to import accountants from other countries.

Furthermore, Du toit (2016) and Seroto (2015) note that one of the greatest challenges facing universities which offer teacher education qualifications in the 21st century is to prepare the teachers for student diversity in the learning environment and in the context of the lecture halls. Among others, this diversity of students in the learning environment is manifested and vested in racial attitudes, personal beliefs and perceptions about their experiences as they access the curriculum, sociocultural and linguistic background (Seroto, 2015). Diversity in the learning environment makes it imperative for those involved in curriculum implementation to prepare themselves to work effectively with students of different abilities, learning styles and real life experiences.

This demands those involved in curriculum implementation not only to have sound pedagogical knowledge, but to acknowledge that the bedrock of successful teaching and learning is firmly premised on the principles of social constructivism and the theory of successful intelligence. Above all, this diversity makes it compulsory for those involved in curriculum implementation to explore how best to implement the curriculum in ways that are compatible with the learning needs of every student in the learning environment. Students vary in how they engage in teaching and learning activities, depending on their abilities. It is thus important for those involved in curriculum implementation to consider the students' learning styles and on the kind of support they expect from their lecturers. This call is vindicated by the views of Davis (2009);

Ko and Chung (2014); Nel, Nel and Hugo (2012); Temple, Callender, Grove and Kersh (2014) Tobias and Duffy (2009).

With those involved in curriculum implementation playing a guiding role in the teaching and learning process as envisaged by Vygotsky (1997), Curzon (1991) rejects the responsibility of passing information to students. According to Curzon (1991), the essence of appropriate teaching strategies in higher education is the provision of a positive supportive learning environment which emphasises self-direction and self-regulation. This sentiment is consistent with constructivist teaching approaches to curriculum implementation, which emphasise active learning in which the students are placed at the centre and get empowered to manage their own learning.

1.3 STATEMENT OF THE RESEARCH PROBLEM

The manner in which accounting is currently being taught in initial teacher education programs neither conforms to the diverse and dynamic learning needs of students accessing the accounting curriculum itself nor produces accounting teachers who are pedagogically competent to teach accounting to a mainstream class of learners of mixed ability (Mapuya, 2018; Masondo and Fengu, 2019; Vrioni, 2011). Furthermore, the approaches currently being used to implement the accounting curriculum are not only inconsistent with the inherent didactical and pedagogical requirements that are specifically unique to the subject of accounting, but they also compromise the development and attainment of the students' multiple intelligences and academic progression in line with the various cognitive levels enshrined in the revised Bloom taxonomy of learning objectives. These concerns are collectively shared by Brophy, Alleman and Knighton (2009); Carr (2010); Daniel and Bimbola (2010); Taole (2015) and Van Wyk and Dos Reis (2016).

Thus, despite the fact that those involved in curriculum implementation have enthusiastically embraced constructivist oriented pedagogy and guaranteed their commitment to this end, a perusal of literature of the learning experiences of students has reaffirmed a school of thought that maintains that teachers should adopt a more radical paradigm shift towards curriculum implementation approaches (Nel *et al.* 2012).

It is also important to acknowledge that the teaching and learning surrounding the local and global higher education landscape has witnessed some tremendous changes over

the past two decades, especially in student diversity (Bosman 2015 and Makola 2016). Therefore, this makes it imperative for institutions of higher learning to consider the students' learning experiences in curriculum implementation. Garrison and Vaughan (2012) note that questions have been raised by those involved in higher education about the traditional approaches to teaching and learning as well as on their ability to achieve and deliver the promised high levels of student learning. There is a need to transform the way in which students' learning experiences are designed. In addition, stakeholders in higher education have also acknowledged that students' learning experiences have a direct effect on their academic performance and course completion rates (Bautitsa 2014; Bosman 2015; Gablinske 2014; Killen, 2016 and Pollard, 2014).

Knowledge of the pedagogical implications of the students' learning experiences is not only theoretically significant, but it is very crucial in guiding those involved in curriculum implementation on how to implement the curriculum using approaches that are consistent with the educational and learning needs of students. Such knowledge also helps them to offer students learning experiences which are not only academically promoting and stimulating but which also promote and develop their various intelligences and cognitive abilities. As such, this study explores this issue from the students' perspectives. Following the aforementioned statement of the research problem, the aim, research questions and objectives of this study will now be stated.

1.4 RESEARCH AIM, QUESTIONS AND OBJECTIVES

The aim of this study is to investigate the learning experiences of first year accounting student teachers and their implications for curriculum implementation. In order to achieve this aim, the following research questions were investigated.

1.4.1 Research Questions

In Mills and Gay's (2016) perspective, to address the identified research problem, the researcher needs to pose questions of interest, which are directly related to the study phenomena. Following the expert views of Creswell (2013), the research questions are also informed by literature review. Mills and Gay (2016) further suggest that these research questions should be tested or answered through the collection and analysis of data. The research questions for this study are categorised into main and subsidiary research questions as follows:

1.4.1.1 Main Research Questions

In alignment with the research topic and aim, the following overarching research questions are investigated and explored:

- What are the learning experiences of first year accounting student teachers?
- How do curriculum implementation approaches influence first year accounting student teachers' learning experiences?
- How do the first year accounting student teachers' learning experiences influence curriculum implementation?
- What are the pedagogical implications of the first year accounting student teachers' learning experiences on curriculum implementation approaches?

In alignment with the research topic and aim, the following overarching research questions are investigated and explored:

1.4.1.2 Subsidiary Research Questions

In order to answer the main research questions formulated above, it is deemed necessary to investigate the following subsidiary research questions:

- What meaning do first year accounting student teachers ascribe to their learning experiences?
- Which curriculum implementation approaches provide first year accounting student teachers with academically supportive and enabling learning experiences?
- Which curriculum implementation approaches promote and develop the first year accounting student teachers' multiple intelligences and cognitive abilities?
- How do first year accounting student teachers describe their learning experiences?
- How are curriculum implementation and the attainment of educational objectives related to first year accounting student teachers' learning experiences?
- Is there a statistically significant relationship between biographical variables (gender, age) and multiple intelligences?

- Is there a statistically significant relationship between biographical variables (gender, age) and guided instruction?
- Is there a statistically significant relationship between biographical variables (gender, age) and social constructivism?

The following section provides research objectives that will be realized in this study.

1.4.2 Research Objectives

Similar to the research questions presented above, the research objectives of this study are grouped into main and subsidiary research objectives.

1.4.2.1 Main Research Objectives

Informed by the overarching research questions posed above, the following main research objectives will be pursued, which are to:

- investigate the learning experiences of first year accounting student teachers.
- explore how curriculum implementation approaches influence first year accounting student teachers' learning experiences
- explore how the first year accounting student teachers' learning experiences influence curriculum implementation approaches.
- establish the pedagogical implications for the first year accounting student teachers' learning experiences on curriculum implementation approaches.

1.4.2.2 Subsidiary Research Objectives

In accordance with the subsidiary research questions stated above, it has been found necessary to pursue the following subsidiary research objectives, which are to:

- describe the meaning first year accounting student teachers ascribe to their learning experiences.
- identify curriculum implementation approaches which provide first year accounting student teachers with academically supportive and enabling learning experiences.

- determine curriculum implementation approaches which promote and develop the first year accounting student teachers' multiple intelligences and cognitive abilities.
- establish how first year accounting student teachers describe their learning experiences.
- explore how curriculum implementation and the attainment of educational objectives are related to first year accounting student teachers' learning experiences.
- ascertain if there is a statistically significant relationship between biographical variables (gender, age) and multiple intelligences.
- test if there is a statistically significant relationship between biographical variables (gender, age) and guided instruction.
- establish if there is a statistically significant relationship between biographical variables (gender, age) and social constructivism.

This study also has research hypotheses that will be tested.

1.5 RESEARCH HYPOTHESES

The following null hypotheses will be tested:

- Hypothesis 1: There is no statistically significant relationship between gender and multiple intelligences.
- Hypothesis 2: There is no statistically significant relationship between gender and analytical intelligence.
- Hypothesis 3: There is no statistically significant relationship between gender and creative intelligence.
- Hypothesis 4: There is no statistically significant relationship between gender and practical intelligence.
- Hypothesis 5: There is no statistically significant relationship between gender and guided instruction.
- Hypothesis 6: There is no statistically significant relationship between gender and social constructivism.
- Hypothesis 7: There is no statistically significant relationship between age and multiple intelligences.

- Hypothesis 8: There is no statistically significant relationship between age and analytical intelligence.
- Hypothesis 9: There is no statistically significant relationship between age and creative intelligence.
- Hypothesis 10: There is no statistically significant relationship between age and practical intelligence.
- Hypothesis 11: There is no statistically significant relationship between age and guided instruction.
- Hypothesis 12: There is no statistically significant relationship between age and social constructivism.
- Hypothesis 13: There is no statistically significant relationship between multiple intelligences and guided instruction.
- Hypothesis 14: There is no statistically significant relationship multiple intelligences and social constructivism.
- Hypothesis 15: There is no statistically significant relationship between guided instruction and social constructivism.
- Hypothesis 16: There is no statistically significant difference in the mean multiple intelligences scores for male and female students.
- Hypothesis 17: There is no statistically significant difference in the mean analytical intelligence scores for male and female students.
- Hypothesis 18: There is no statistically significant difference in the mean creative intelligence scores for male and female students.
- Hypothesis 19: There is no statistically significant difference in the mean practical intelligence scores for male and female students.
- Hypothesis 20: There is no statistically significant difference in the mean guided instruction scores for male and female students.
- Hypothesis 21: There is no statistically significant difference in the mean social constructivism scores for male and female students.
- Hypothesis 22: There is no statistically significant difference in the mean multiple intelligences scores for students aged 18-21 and students aged 22-36.
- Hypothesis 23: There is no statistically significant difference in the mean analytical intelligence scores for students aged 18-21 and students aged 22-36.

- Hypothesis 24: There is no statistically significant difference in the mean creative intelligence scores for students aged 18-21 and students aged 22-36
- Hypothesis 25: There is no statistically significant difference in the mean practical intelligence scores for students aged 18-21 and students aged 22-36.
- Hypothesis 26: There is no statistically significant difference in the mean guided instruction scores for students aged 18-21 and students aged 22-36.
- Hypothesis 27: There is no statistically significant difference in the mean social constructivism scores for students aged 18-21 and students aged 22-36.

The value of this study and its significance in education and to the institutions of higher learning will now be discussed below.

1.6 SIGNIFICANCE OF THE STUDY

The significance of this study is epitomised by the sentiments of Vrioni (2011) who argues that classroom investigations create and provide unique opportunities to those involved in curriculum implementation to have a better understanding of their students' learning and learning experiences, thereby putting them in a better position to serve the students. This claim is further reinforced by Evans *et al*. (2010) who remark that understanding the needs of students is crucial in providing the relevant and necessary student support. By presenting a tentative anatomy of curriculum implementation, it is envisaged that this study will provide those involved in curriculum implementation with an opportunity to reflect on their teaching practice and philosophies. This reflection will be done in light of what first year accounting student teachers claim they experience in the lecture halls.

Makola (2016) subscribes to the above sentiments by noting that investigations that seek to evaluate the learning experiences of students to enhance their academic success are of great importance to the higher education community. Evans *et al*. (2010) share a similar position to this line of thought by arguing that such research empowers lecturers with some clues on how to approach curriculum implementation and gives them a sound theoretical orientation towards curriculum implementation. As such, in advancing a new theoretical perspective, it is anticipated that this research will augment scholarly understanding and knowledge in the less researched

phenomena of students' learning experiences and implications for curriculum implementation.

There is a paucity of studies and research in South Africa that examine the learning experiences of students and the ramifications of such experiences on curriculum implementation. Therefore, this investigation can be deemed very timely. Based on the foregoing, it follows that this study will provide some important insights into the learning experiences of first year accounting student teachers in institutions of higher learning and illuminate the relationship between such learning experiences and curriculum implementation. In so doing, it is anticipated that this study will lay the ideological foundations of an approach to curriculum implementation which recognises and considers the educational unique needs of individual first year accounting student teachers. The study will furthermore contribute towards filling the identified gap in the teaching and learning of accounting for first year student teacher educators

This investigation contends that significant changes in teaching and learning practice need to be implemented to improve the learning experiences of first year accounting student teachers. It is anticipated that the study will improve accounting learning in higher education, illuminate instructional approaches that can positively affect the academic development of students since it is based on knowledge and how it is acquired. Furthermore, the researcher carefully examines the essential conditions that are important for successful curriculum implementation in higher education.

This research also advocates for a paradigm shift in classroom practice and provides for a different and new theoretical perspective to transform teaching and learning in institutions of higher learning. As such, the primary beneficiaries this study are the first year accounting student teachers who will benefit from an approach to teaching and learning that is informed by empirical evidence on effective teaching. The first year accounting student teachers involved in this study will ultimately be involved in curriculum implementation in practice, thereby making them able and competent. This is view is consistent with Vygotsky's earlier sentiments about teacher training and development.

Thus the study presents an opportunity to put into practice and observe the recommendations of Vygotsky (1997) regarding the educational development of teachers. Vygotsky's (1997) advances that beginning from their educational training,

teachers ought to master and have a sound understanding of the scientific foundations of student psychology, educational psychology and social psychology. Vygotsky (1997) further cautions that student teachers need to master the fundamentals of the theory and applications of pedagogics for them to ultimately fit into the context of their own teaching practice and the teaching profession. Therefore, it is anticipated that through well established and researched implications of learning experiences on curriculum implementation, accounting student teachers will be better equipped and empowered when they graduate for the real teaching profession. The upcoming paragraphs will now present the contextual and operational definitions of the key terms and constructs used in this thesis.

1.7 CLARIFICATION OF CONCEPTS

Ridley (2012) believes that researchers are very likely to use terminology in their study which has been defined and used in various contexts by different researchers in the same field. It is therefore important for the researcher not to assume a common agreement about the meaning of key words and phrases and to introduce to the reader how such key words and phrases should be defined and interpreted within the context of the current study. In agreeing with the above, Leedy and Ormrod (2016) caution that in the absence of clear and precise meanings of specific terms used in a study, it is impossible to evaluate the research and determine whether the study conducted conforms to what was initially proposed in the statement of the research problem. The following terms which are the most important variables in this research will now be defined namely, learning experiences, multiple intelligences, analytical intelligence, practical intelligence, creative intelligence, guided instruction, social constructivism, curriculum and learning environment.

1.7.1 Learning Experiences

It is imperative for the lecturer to ensure that the students' learning experiences always epitomise quality and effective learning. This is endorsed by Maddock (2014) who warns that lecturers must make the classroom learning experience to be more personal and meaningful to the students. Therefore, learning experiences will be defined in this study as the various encounters of students as they access the curriculum. Additionally, learning experiences include the students' interactions with

one another, the lecturer and the subject content. Therefore, it is assumed in this study that learning experiences are shaped by the way the curriculum is implemented.

1.7.2 Multiple Intelligences

Being the pioneer and advocate of the idea of multiple intelligences, Sternberg (1977, 1983, 2001, 2003 and 2008) uses the term multiple intelligences to refer to the assumption that every human being has multiple abilities and intelligences which can all be subsequently classified under three broad categories of analytical intelligence, creative intelligence and practical intelligence. Thus, in the views of Sternberg (1983, 2001, 2003 and2008) all the abilities and intelligences of human beings can collectively be analytical, creative or practical. Gardner (1999) and Moran, Kornhaber and Gardener (2006) also subscribe to Sternberg's (1977, 1983, 2001, 2003 and 2008) stance on the idea of multiple intelligences by alluding that an individual possesses a set of abilities and intelligences as opposed to a single type of intelligence. Sternberg (2001) further argues that while every human being is gifted in several intelligences, they are more intelligent in one of those several abilities, with all the other abilities and types of intelligences complementing one another. Gardner (1999) boldly and cogently contents that all individuals are born with or can develop multiple intelligences.

While the above scholarly sentiments of multiple intelligences are embraced and applied in this study in their entirety, the researcher wants to further contextualise the meaning of multiple intelligences to refer to the inherently unique and individual abilities of first year accounting student teachers. These abilities can be nurtured, improved and developed further through formal instruction and the teaching and learning activities the students are exposed to during curriculum implementation. Lastly, this study views these several abilities of students in the context of formal education in the teaching and learning of accounting. This study argues that among others, these abilities of the first year accounting student teachers can be the ability to correctly apply and use a given formula, such as calculating depreciation using the diminishing balance method, determining stock on hand using the First In First Out criteria, the ability to identify necessary adjustments that need to be made as a result of certain transactions, the ability to generate ideas and solutions of business problems, the ability to draw up financial statements accurately and correctly, the

ability to apply accounting principles in practical accounting related situations and the ability to evaluate liquidity ratios to make informed business decisions. The following section discusses analytical intelligence.

1.7.3 Analytical Intelligence

Sternberg (1977, 1998 and 2008) views analytical intelligence as a first type of intelligence which is concerned with making sense of, contrasting, analysing and evaluating the various kinds of information and problems that are usually found in academic settings such as the learning environment and in intelligence tests. Guyote and Sternberg (1981); Sternberg and Gardner (1983); Sternberg and Powell (1983a and1983b) Sternberg (1977, 1980 and 1983), further note that analytical intelligence is associated with reasoning, problem solving and knowledge acquisition. While all these views apply to this study in their totality, analytical intelligence is further regarded by the researcher as a kind of intelligence which is manifested in the student's problem solving skills. It will also be used to refer to the ability of the first year accounting student teachers to think and reflect critically, to analyse and evaluate ideas meaningfully and to solve problems and make decisions successfully. The following section discusses creative intelligence.

1.7.4 Creative Intelligence

In the perspectives of Sternberg and Lubart (1995) and Sternberg (2002) creative intelligence refers to a form of ability which emphasizes divergent learning activities and tasks such as writing short stories designing advertisements for boring products, designing artworks and responding to scientific creative problems. Sternberg (2002) goes on to suggest that creative intelligence refers to a person's ability to go beyond that which is given to design and produce novel and interesting ideas. On the other hand, Jacobs (2016) and Ormrod (2014a) collectively define creativity as the process of bringing something new into existence. This study fully embraces all the scholarly views above regarding the meaning of creative intelligence.

However, in the context of the present study, creative intelligence will also be used to refer to the first year accounting student teachers' imaginations and synthesis of ideas in the context of new learning experiences and situations. It is also regarded as the ability of the first year accounting student teachers to innovatively engage in learning activities and arrive at solutions using new methods and processes of their own.

Consequently, creative intelligence is the ability to think and reason beyond the ordinary and usual norm to arrive at new conclusions about the learning content. Finally, creative intelligence is believed to manifest itself in the students' ability to express themselves and their understanding of the subject content in multiple but consistent ways. The following section discusses practical intelligence.

1.7.5 Practical Intelligence

In line with the views of Sternberg (2007 and 2002) and Sternberg, Forsythe, Hedlund, Horvath, Snook, Williams, Wagner and Grigorenko (2000), practical intelligence is the tacit knowledge which individuals need to be successful in life which is not explicitly taught and usually not verbalised. Sternberg (1977 and 2001) further believes that practical intelligence focuses on the individual's ability and capacity to grasp, comprehend, understand, handle and deal with daily tasks encountered in real life. Therefore, it is viewed as the contextual component of intelligence in which individuals demonstrate their perceptions about their relationship with the real external world (Sternberg, 2007). Ormrod (2014a) maintains that individuals do not necessarily learn the skills of practical intelligence at school or universities, but these skills make them successful in their interactions with the world and reality, which is a shared view with social constructivism (Vygotsky, 1978 and 1986) and intepretivism (Creswell, 2013).

Over and above the depth and breadth of the meaning implied by the above views which are all applicable to this study, the researcher wants to define practical intelligence as the ability of the first year accounting student teachers to identify and apply abstract ideas and concepts about the subject matter into real life situations and practical contexts. Practical intelligence will also be used to refer to the students' ability to use their prior knowledge and theoretical knowledge to solve problems which they encounter in the learning environment and beyond the walls of the lecture halls. Practical intelligence is viewed as more of an ability to deal with practical based learning activities than dealing with ones' daily challenges because this type of intelligence is dealt with within the confines of a formal learning environment and educational set up. The following section discusses guided instructions as one of the teaching strategies that develop multiple intelligences.

1.7.6 Guided Instruction

Expressed in the collective views of Costa (2008); Ormrod (2014a); Roscoe and Chi (2007) and Vygotsky (1978) guided instruction refers to a teaching strategy in which students rely on the assistance of the lecturer to help them learn and understand new subject content, without the lecturer necessarily giving them the information directly. Hatano and Inagaki (2003) add that guided instruction encourages students to concentrate on the main ideas and integrate them together in a meaningful way through the guidance from the lecturer. Costa (2008) asserts that guided instruction is an approach which makes the learning environment to be conducive and encourages students to construct knowledge and understandings with their lecturers and other more knowledgeable and experienced individuals. Vygotsky (1978 and 1986) refers to these experienced and knowledgeable individual as significant others and the whole process as mediated learning and scaffolding.

In the context of this study, guided instruction will be used to refer to a social constructivist approach in curriculum implementation in which the individual implementing the curriculum plays the role of a learning facilitator and simply guide students in the learning process. The lecturer provides the students with thought provoking questions and situations that stimulate their reasoning and thinking to arrive at the correct answer and at new understanding of the subject content. Thus the predominant role of the lecturer in guided instruction is to provide students with opportunities and experiences which lead them to the envisaged educational goals and conclusions. The following section discusses social constructivism as a student centred approach that could be adopted during curriculum delivery to develop multiple intelligences.

1.7.7 Social Constructivism

As noted by Woolfolk (2004), social constructivism refers to the internalisation of knowledge and skills that are developed by students in their interactions with each other in the learning environment**.** Ormrod (2014b) views social constructivism as a theoretical perspective which looks at the collective efforts of individuals to construct and impose meaning on the world from their experiences. Jensen and Frederick (2016) and Ormrod (2014b) argue that social constructivism emphasises that the social, cultural and historical contexts in which students grow up and find themselves

in have some serious effects and implications on their thinking, learning and effective classroom instruction.

All the above views on social constructivism apply in this study in every sense of the words. Additionally, social constructivism will also be used to refer to an approach in curriculum implementation which is predominantly student centred by placing students firmly at the centre of the teaching and learning process, drawing from their social interactions and personal experiences. Social constructivism is a teaching philosophy which emphasises the collective and negotiated construction of meaning by those involved in the teaching and learning experiences, with knowledge and the truth being regarded as objective. Social constructivism believes in multiple perspectives of the truth and reality.

1.7.8 Curriculum

Wiles and Bondi (2007) maintain that curriculum refers to the total experiences planned for a school or students. On the other hand, Marsh and Willis (2007) suggest that curriculum is permanent subjects such as grammar, mathematics and reading. However, both definitions can be criticised for lacking in detail and for providing a misleading and one sided view of the curriculum. In addition, Marsh and Willis' (2007) definition is too short and vague. It is open to misinterpretation and is likely to culminate in polarised debates about the real implied meaning of curriculum. It is therefore necessary to explore more plausible and explicit definitions of curriculum.

Pinar (1975) views curriculum broadly as a course to be run and more specifically as a course of study at an educational institution. This view of curriculum was later endorsed by McKernan (2008), who comprehensively defined curriculum as the educational policy proposal presented by a school, a college or a university which is made up of a set of values, skills, valued knowledge as well as other dispositions that have been purposefully orchestrated. McKernan (2008) further argues that curriculum provides for and supports both education and training. In addition, Hoadley and Jansen (2015) also subscribe to the above definitions when they view curriculum as what is prescribed to be taught and learnt in the classrooms.

Drawing from the predominant view of the curriculum from the above definitions, the researcher has also arrived at a definition of curriculum which is unique to this study. In this study, curriculum is defined as a formal set of events, activities and sessions

which students are exposed to over a given period of time in the context of a school, formal education and classroom instruction, with a view to achieve a set of predetermined educational objectives. Furthermore, curriculum will be used to imply the content that is to be taught to the first year accounting students and all the teaching and learning activities including but not limited to instruction and assessments.

1.7.9 Learning environment

Horsthemke, Siyakwazi, Walton and Wolhuter (2013) believe that the learning environment refers not only to the physical space in which learning takes place but also to the emotional atmosphere which is a product of the interactions between all the participants involved in the teaching and learning process. They further argue that learning does not take place in a vacuum but takes place in a given context and environment. The interactions between the stakeholders involved in the teaching and learning process can make the learning environment to be either caring, supportive and inclusive, thereby making it academically enabling or alienating, judgemental and exclusive. These views are embraced in the current study in their complete sense.

1.8 PRELIMINARY REVIEW OF LITERATURE

Owing to the substantial research attention on curriculum implementation approaches and academic success of students over the last two decades, there has been increasing empirical evidence which suggest the academic importance of curriculum implementation approaches (Fayombo, 2015; Masondo and Fengu, 2019; Millet, 2015; Radovan and Makovec, 2015, Visser and Vreken, 2013). However, despite all the available research evidence on the important relationship between pedagogy and student success, the implications of the students' learning experiences on the implementation of the curriculum itself is not adequately understood. More specifically, very little is known about the learning experiences of students and their pedagogical implications on curriculum implementation.

Davis (2009) cautions that owing to the major changes in the landscape of higher education in South Africa, there is a need to revolutionise curriculum implementation. This is partly in response to and in support of the earlier claims made by Davis (2009); Hannelore and Marlies, (2017) and Tobias and Duffy, (2009) that the teaching and learning landscape surrounding higher education in South Africa has undergone some

major changes over the past two decades, thereby necessitating the need for a paradigm shift in curriculum implementation approaches.

From a South African perspective, it is also important to note that the call for free higher education to all first year students by the president of South Africa starting from the 2018 academic year means that more students can enrol at universities. This automatically increases the number of students who could have attended disadvantaged schools and who need more tailor made instruction for them to be able to navigate successfully in their studies. In light of these developments and inevitable realities, Temple, Callender, Grove and Kersh (2014) caution that managing the students' learning experiences in a shifting dynamic higher education landscape is of paramount importance to ensure that students achieve academic success in their studies.

To this effect, Garrison and Vaughan (2012) remark that institutions of higher education need to recognise and embrace the untenable stance of holding on to past educational practices that are incongruent with the learning needs of students. This line of thought is endorsed by Nel *et al.* (2012) who allude that there is a need for a paradigm shift on the approach to curriculum implementation. Ko and Chung (2014) also observe that over the past few years, research in education has begun to emphasise the dynamic learning models and learning needs of students and their effect on the students' learning experiences.

Similarly, Garrison and Vaughan (2012) maintain that teaching and learning in higher learning institutions needs to conform to the expectations and demands of the 21st century. Garrison and Vaughan (2012) further indicate that learning experiences should give students opportunities to actively engage their lecturers and classmates in critical and creative reflection and discourse which are conventional assumptions of higher education. Certainly, there is a need to revolutionise and change the ways in which students' learning experiences are designed as well as the ways through which they access the curriculum in the learning environment.

Gablinske (2014) suggests that students' learning experiences have an important influence on the type and nature of the subsequent relationship between the students and the lecturer. Ko and Chung (2014) have established that there is a positive relationship between learning experiences and academic performance. This is also

supported by Fayombo (2015) who maintains that the academic performance of students is influenced by their learning experiences. Bosman (2015) has reported a strong relationship between the lecturers' teaching style and students' learning experiences. Lee and Mao (2016) assert that students whose learning experiences in the classroom are positive tend to do well academically. Bautitsa (2014) suggests that a constructivist learning environment is a mitigating factor in enhancing a shared culture of active learning experiences for students in the learning environment. Coe, Aloisi, Higgins and Major (2014) argue that great teaching translates to positive learning experiences for students.

In the same vein, Hannelore and Marlies, (2017) maintain that excellence in teaching has become a stock phrase in many faculties' job descriptions. As such, those involved in curriculum implementation should therefore be conversant with what constitutes excellent teaching in the classroom. In the same breadth, Davis (2009) argues that while teaching is personal and is driven by the philosophies of the lecturer concerned, effective teaching should always encourage and promote independent thinking, intellectual development and the students' enthusiasm towards the subject. These characteristics of effective teaching are indispensable in promoting the academic success of students by providing them with academically enabling and supporting learning experiences. This can only be achieved through curriculum implementation approaches which speak to student diversity and support the students' learning styles.

Hannelore and Marlies, (2017) and Marlies, Georg and Hannelore (2018) jointly cautioned that the need for curriculum implementers to demonstrate an effective teaching philosophy has become increasingly important in all institutions of higher education across the globe. Tobias and Duffy (2009) concur with these sentiments by claiming that owing to the growing dissatisfaction with the education system in institutions of higher learning, the creation of effective learning environments has become increasingly important. Teaching and learning have witnessed some tremendous changes. With regard to such changes, constructivism has been regarded as the major driving conceptual framework and theory over the last two decades. Constructivist views have persisted across many schools of thought in scientific psychology.

At the centre of the students' learning experiences are the approaches used to implement the curriculum and central to curriculum implementation approaches is the students' learning experiences. In the work of Vrioni (2011), a number of students who have enrolled at the University of Tirana in Albania access the curriculum in traditional classrooms where they are taught through the lecturer-centred methods. Regrettably, students in these classes are not challenged to actively engage in reflecting on course learning material and deep thinking. To this effect, Tabaku (2008) had earlier cautioned that when students access the curriculum in traditional classrooms which offer students lecturer-centred experiences, they are forced to participate minimally and are only expected to memorise information as evidence of their learning.

Vrioni (2011) further remarks that the traditional approach to curriculum implementation is based on the assumption that the lecturer is the only source of knowledge in the classroom. Consequently, university lecturers adopt a more lecturer centred approach. Most lecturers regard this approach as the most effective and efficient instructional method for implementing the curriculum in large classes. When students access the curriculum in such a learning environment, Vrioni (2011) points out that they are hardly given the opportunity to process their learning.

This is not consistent with the underlying assumptions of social constructivism. There is a need to transform the learning environment settings in order for them to be more socially and academically involving for the students. Such is a learning environment envisaged by Garrisson and Vaughan (2011) which offers students some positive learning experiences. Indeed, lecturers have come to realise and accept that more lasting learning and deeper student engagement are a function of the use of concepts in the classroom, the construction and configuration of one's own knowledge and meaning and the realisation of a communicative learning environment.

To promote and enhance positive learning experiences and improved student engagement, Vrioni (2011) suggests that group discussion and learning by inquiry are some of the strategies that are worth considering in curriculum implementation. This line of thought points to social constructivist curriculum implementation approaches and a social constructivist learning environment. While contemplating on the issue of teaching and learning, Vygotsky (1997) cautions that the experiences of students are the most fundamental foundations of pedagogical work. Therefore, teaching and

learning ought to be organised in such a way that the students are not educated but educate themselves.

Vygotsky (1997) argues that this calls for the teaching and learning process to be informed by the students' personal experiences. Vygotsky (1997) further argues that in their entirety, the students' learning experiences are determined and shaped by the social and learning environment in which they access the curriculum. Students access the curriculum and get educated through these experiences which are dependent on the learning environment. In this environment, the role of the lecturer is therefore to decide on, direct and guide curriculum implementation and to enhance an academically enabling environment.

Vygotsky (1997) presents a clear analogy of the relationship between the curriculum implementation, the students, the learning environment and those involved in curriculum implementation. Vygotsky (1997) believes that those involved in curriculum implementation may do so in a well calculated manner by constantly collaborating with the students, with their learning environment, with their needs and with the students' willingness to work with them. Thus curriculum implementation therefore becomes a shared and collaborative activity. This is so because, according to Mapuya (2018), the students are not in competition with their lecturers, thereby making teaching a double object.

While some of Vygotsky's critics argue that his ideas on teaching and learning were largely based on animals in a laboratory, his stance on the learning environment still has relevance even in this era. Vygotsky (1997) argues that practically possible education can only be realised on the basis of a properly and relevantly guided learning and social environment. Therefore, in his view, crucial questions regarding curriculum implementation and the learning environment can only be adequately answered through the engagement and consideration of all the stakeholders involved in the learning environment.

Vygotsky (1997) believes that an individual's education and cognitive development are fundamentally dependent on the environment in which teaching and learning and other social interactions occur. From Vygotsky's (1997) perspective, the learning experiences of students are conditioned by the role they play in their teaching and learning environment. Stakeholders involved in curriculum implementation play a

significant role in defining and determining the extent and levels of student involvement in the teaching and learning environment. Ironically, this has a direct effect on the students' learning experiences and how they perceive them.

Thus from a psychological and pedagogical perspective, Vygotsky (1997; 1978) views those involved in curriculum implementation as the architects and custodians of academically enabling learning experiences for students. Vygotsky (1997) admits that this is especially a complex task for educators, who are the leading role players in curriculum implementation. According to Vygotsky (1997), this complexity emanates from the fact that educators need to have a sound understanding of student psychology, how students learn and the laws governing their activities. At the same time, they are also expected to be properly oriented towards the dynamic features of the students' learning environment. This enables them to direct students' teaching and learning activities in a pedagogically proper manner by altering and modifying the learning environment and their learning experiences skilfully.

Vygotsky (1997) portrays successful and meaningful teaching and learning as an active process with three levels of activity. The students must be active, the educator must be active and lastly, the learning environment created between them has to be active as well. This view by Vygotsky (1997) calls for educators to be highly creative characters. This will enable educators to achieve academic success with the most dynamic students in the highly multifaceted unique context in which students access the curriculum. To this effect, Curzon (1991) notes that the duty of the lecturer in the teaching and learning process goes beyond transferring information to students, hoping that students will be able to comprehend and remember it. In this regard, Curzon (1991) shares similar sentiments with Vygotsky (1997) that the main responsibilities of lecturers are therefore to create conditions and plan activities that result in effective learning.

1.9 OVERVIEW OF THE RESEARCH DESIGN AND METHODOLOGY

The following section presents the generic aspects of research design and methodology, relevance and applicability to the current study. Wilson (2017) defines research design as a strategy that combines the various aspects of the research study into a coherent and cohesive study. Okeke and van Wyk (2016) perceive research design as a plan of action in which the researcher decides how to communicate the

chosen framework for the study and conduct the research. Research design involves procedures for collecting, analysing and reporting qualitative and quantitative data in a study (Creswell 2014; Gray 2014; Leedy and Ormrod 2013; and Punch 2011. Creswell (2014) and Wilson (2017) argue that research methodology comprises of the overarching principles about how a research study has been designed. Kumar (2014) subscribes to the sentiments of Cohen and Mannion (2013) and Denzin and Lincoln (2011) that methodology refers to the research approach while research design pertains to the plan of action that connects and informs the methods used for data collection and data analysis in search of answers to the research questions raised in the study. In research, the researcher will adopt a mixed methods research design.

1.9.1 Mixed methods research design

To obtain rich data which portrays a comprehensive and illuminating view of the learning experiences of the first year accounting student teachers, the researcher will adopt a pragmatic approach. This will be a sequential explanatory research that will involve generating both quantitative and qualitative data sets to adequately answer the research questions and fulfil the research objectives. For the quantitative aspect of the study, a correlational design will be used while phenomenology will be adopted for the qualitative research strand.

Correlational design will enable the researcher to ascertain if there are relationships between biographical variables (gender, age) and student teachers' responses on multiple intelligences. A qualitative phenomenological design will be used to gain phenomenal insights into the real learning experiences of first year student teachers. It will also be adopted to understand reasons for realities or happenings that will be discovered by this research. The following section highlights the population and sample for this study.

1.9.2 Population and sample

It is important to distinguish between the population and the sample of the study.

1.9.2.1 Population

Population refers to all the individuals to whom the researcher wants to generalise findings from the study sample (Johnson and Christensen 2014; Fraenkel *et al*. 2015; McMillian and Schumacher 2010; Gall *et al*. 2014). Creswell (2016) and Durrheim

(2011) hold a more holistic view of population as a larger group from which the study sample is drawn and to which the researcher wants to generalise the findings of the study. Kumar (2014) believes that a population is the larger group from which a sample is drawn, and that it is denoted by the letter *"N"*. Therefore, the population of this study is all the first year accounting student teachers.

1.9.2.2 Sampling

Kumar (2014) defines sampling as the process of selecting a few elements from a bigger group, which is the study's population as the basis for predicting the prevalence of unknown information, situation or outcome regarding the whole group. In the same vein, Swain (2017) subscribes to the earlier views of Durrheim (2011) that sampling is the process of selecting cases to observe in a study. Durrheim (2011) further notes that sampling involves decisions such as the people, events, behaviour and social processes to be observed. Two separate sampling techniques will be employed in this study for the quantitative and qualitative research phases. These will now be discussed below.

- **Sampling for the quantitative research phase**

The researcher will purposefully select the first year accounting student teachers because as argued by Creswell (2013); Kumar (2014) and Ritchie *et al.* (2014), they share similar learning experiences, an aspect which is anticipated to enable a detailed exploration and understanding of their learning experiences and implications for curriculum implementation. Furthermore, the research questions and objectives are based on them and it therefore makes sense to employ purposeful sampling. In the opinions of Ritchie *et al.* (2014), the aim of purposive sampling is twofold. Firstly, it is to ensure that all the key constituencies that are relevant to the subject matter are adequately covered. Secondly, purposive sampling ensures that enough diversity is included within each of the key criteria. This provides for a sound, effective and meaningful exploration of the impact of the characteristic concerned. Having experienced the phenomena under investigation therefore qualifies one to be potentially included in purposive sampling. Thus, as Lewis *et al.* (2014) puts it, the sample will be chosen because it has the specific features that are central to the researcher's investigation. All 121 first year accounting student teachers were purposefully sampled.

- **Sampling for qualitative research phase**

Simple random sampling was used to draw the sample for the participants in focus group interviews. It is viewed by both Gall *et al.* (2014) and Johnson and Christensen (2014) as a sampling technique in which every member of the study population has an equal chance of selection. Durrheim (2011); Kumar (2014); McMillian and Schumacher (2010) and Swain (2017) collectively advance that simple random sampling is a sampling technique in which every member of the study population has an equal and independent probability to be selected in the study. Forty-eight first year accounting student teachers who were interviewed were selected purposefully (cf. 3.5.2).

1.9.3 Data collection instruments

The researcher developed a questionnaire whose statements were premised on literature review on learning experiences, social constructivism, multiple intelligences and curriculum implementation approaches (cf. 3.7.1). The data from the questionnaire were corroborated and interrogated by phenomenological structured focus group interviews. Again, the interview questions that were deliberated upon were informed by the quantitative findings from the questionnaire and the relevant literature (cf. 3.7.4). This section on data collection instruments presents the instruments that were used in this study to generate both the quantitative and qualitative data sets.

1.9.3.1 Reliability and validity of the research instruments

It is customary for quantitative research to explain and demonstrate the reliability and validity of the study findings in the context of the study and the research instruments that were used to generate data. Technically, the reliability and validity of the research instruments is viewed and discussed in light of the research questions, research objectives, research variables and the ultimate aim of the study. As such, the following section deliberates on the reliability and validity of the research instruments, starting with the reliability of the questionnaire.

- **Reliability and validity of the questionnaire**

Expressing their views on the definition of reliability, Gibson (2017) and Johnson and Christensen (2014) collectively regard reliability as the stability, repeatability and consistency of the test scores and study findings. Knapp and Mueller (2010) present a comprehensive overview of reliability by noting that reliability of a questionnaire

focuses on the consistency of measurements from time to time, from form to form, from item to item and from one rater to another. This school of thought by Knapp and Mueller (2010) is also endorsed by Durrheim (2011) who adds that reliability is the extent to which the study findings can be repeated, which is applicable to both the participant's scores on measures and to the findings of the study as a whole. A pilot study (cf. 3.7) will be used to enhance the reliability of this study (Kumar, 2014 and Maree, 2016). A statistical analysis of the data will be conducted to determine the internal consistency reliability for the research instrument (cf. 3.7.2)

Kumar (2014) explains that determining the validity of a research instrument through logic means that every item, question or statement included in the research instrument is justified in relation to the objectives of the study and purpose. In this study, this justification will be done through incorporating and making reference to the relevant literature on the theory of successful intelligences, guided instruction and social constructivism (cf. 3.7.3.1). The inclusion of relevant literature under each section of the questionnaire will justify the validity of items, statements and questions under those respective sections. It is therefore the researcher's view that every item, statement and question whose inclusion can be justified and supported by relevant literature is valid.

- **Reliability of interview instrument**

To ensure reliability of the focus group interviews questions, the researcher shall formulate the interview questions in light of relevant literature on the problem under investigation (cf.3.9). Thus, all the questions for the focus group interviews will be based on the results that will emanate from quantitative research. As noted by Lewis *et al.* (2014), validation refers to the degree to which validity of research evidence has been confirmed and substantiated. In the context of qualitative research and focus group interviews in particular, the process of validation is concerned with evaluating and assessing how well and accurate the meanings of participants have been captured and interpreted by the researcher. It looks at the concept of measurement validity. The researcher will ensure the validity of the findings through triangulation, peer debriefing and member checking (Denzin and Lincoln, 2011; Kelly, 2011; Silverman, 2017).

1.10 DATA ANALYSIS PROCEDURES

The quantitative and qualitative data sets to be generated in this study will be analysed separately, using different data analysis techniques. These data analysis techniques are presented below, staring with quantitative data.

1.10.1 Analysis of quantitative data

The quantitative data of this study was analysed using descriptive and inferential statistics. These statistical techniques are discussed separately below, starting with descriptive statistics.

1.10.1.1 Descriptive statistics

The quantitative data was analysed using descriptive statistics, which according to the collective views of Creswell (2010) and Gall *et al*. (2014) is a form of statistics which is concerned with organising and summarising the data collected to make it more understandable through the use of univariate and bivariate analysis. Measures of central tendency, which are the mean, the median and a measure of dispersion, namely standard deviation was used to analyse descriptive data. The discussion below will now focus on inferential statistics and how it was applied in this study.

1.10.1.2 Inferential statistics

As noted by Creswell (2010) inferential statistics refer to statistics that allow social researchers to make conclusions about some properties of the population from which the sample was drawn. Gall *et al*. (2014) note that inferential statistics deal with the use of statistical figures to make inferences regarding the characteristics of the study population based on the data collected from a study sample that was chosen to represent that population.

Inferential statistics was used for the correlational part of the quantitative study. This will be done through Pearson product-moment correlation coefficient. Similarly, inferential statistics was used to determine the effect of age and gender on the multiple intelligences, guided instruction and social constructivism scores of the participants. T-tests were used to this effect. The analysis of qualitative data follows.

1.10.2. Analysis of qualitative data

This section presents the qualitative techniques that were employed to analyse qualitative data and draw some conclusions.

1.10.2.1 Content analysis and qualitative coding

Henning, Hutter and Bailey (2011) and Kumar (2014) believe that data analysis in a qualitative study depends on how the researcher intends to report on and communicate the study findings to the target audience. Nevertheless, data analysis in a qualitative research design is predominantly done through content analysis. Kumar (2014) concurs with De Vos, Strydom, Fouche and Delport (2011) that content analysis means analysing the contents of interviews to identify the main themes that emerge from the given responses by the respondents or from the observations made by the researcher.

On the other hand, Henning *et al*. (2011) argue that content analysis refers to the counting of the frequencies of word appearances from the qualitative responses given and assigning them with codes for different themes. This process allows the researcher to analyse what is communicated in order to obtain insights from the participant's intentions. (Henning *et al*. 2011) caution that content analysis should not be used merely to report facts but rather to interrogate the data provided. On the other hand, qualitative coding is when the collected data is divided into small units and categorised into the possible meanings that it infers.

Noting that phenomenology assumes that there are some similarities on how individuals perceive and interpret similar experiences, which in this study is the similarity of their perceptions on the essential characteristic of their learning experiences, content analysis has been found to be an important qualitative technique in analysing data from the focus group interviews. Since the study also seeks to identify and describe this essential characteristic of their learning experiences, the researcher studies the multiple perception of the students on their learning experiences and then goes on to identify common elements in their perceptions and reactions.

1.11 ETHICAL CONSIDERATIONS

Typical of all scientific investigations which have to comply with some principles of ethical considerations, this study observed and upheld all the relevant and applicable ethical considerations. These were observed as and when they became necessary, depending on the phase of the study. Prior to the commencement of the study at the research site, the researcher had to obtain written permission from the responsible authorities to conduct the investigation on the learning experiences of first year accounting student teachers and implications for curriculum implementation. This was followed by the observation of the principles of informed consent and voluntary participation. Thereafter, principles of not exposing the study participants to any form of psychological, physical and emotional harm were observed. This was accompanied with the principle of no deception to study participants.

The upcoming section presents the scope of the study.

1.12 SCOPE OF THE STUDY

This investigation falls under educational psychology. It falls within the parameters of Curzon's (1991) and Vygotsky's (1997) definitions of educational psychology. In the perspective of Vygotsky (1997), educational psychology is the branch of applied psychology which looks at the application of the conclusions of theoretical psychology to the process of education and teaching and learning. This investigation views the teaching and learning process from a scientific paradigm. The pedagogical relationship between the students' teaching and learning experiences and the implications these experiences have on education and curriculum implementation is at the core of this study.

In Vygotsky's (1997) analysis, the principal function of educational psychology is to reveal the formal side of the very educational and teaching and learning process and to explain the laws that govern it independently of the direction of their effects. Educational psychology explores better ways of educating students and implementing the curriculum. Educational psychology seeks to improve teaching practice by enhancing and advancing the understanding of those involved in curriculum implementation on how teaching and learning takes place. It tells lecturers how to educate the students and implement the process of education. Educational

psychology is further viewed by Vygotsky (1997) as special branch of applied psychology.

Vygotsky (1997) further views educational psychology as a science of the laws of variation of human behaviour and of the ways to manage and master these laws. The current study is rooted in the theories of Social constructivism and Triarchic Theory of Successful intelligence. It goes without saying that the fundamental principles enshrined in both theories are embedded in educational psychology, thereby locating the scope of the study within the boundaries of educational psychology. Lastly, this study falls under applied research. As noted by Leedy and Ormrod (2016), applied research refers to investigations and study projects which seek to advance theoretical perspectives and conceptualisations about a specific topic or area of interest. The study advances the theoretical assumptions of social constructivism and multiple intelligences.

1.13 METHODOLOGICAL LIMITATIONS OF THE STUDY

In the views of Cohen, Manion and Morrison (2017), limitations are those aspects of a research that may adversely and negatively affect the outcomes of the research study but over which the researcher has no influence or control. In the same vein, Silverman. (2017), cite Best and Kahn (1998) to have defined limitations of a study as circumstances and conditions beyond the researcher's control which may place some restrictions on the study findings and their generalisability. Swain (2017) and Van der Riet and Durrheim (2011) concur that a study's limitation is an aspect of an investigation which the researcher knows can negatively affect the findings of the study and their applicability to other situation, but which the researcher has no direct control or influence over.

Creswell (2013) warns that in phenomenological investigations, there is a possibility of researcher bias, which the researcher must unilaterally declare from the beginning of the investigation. In Creswell's (2013) perspectives, this researcher bias can emanate from the researcher's previous experiences with the phenomenon under investigation, prejudices, psychological and philosophical perspectives that can potentially compromise and contaminate the researcher's interpretation and approach to the phenomenological study. As such, the researcher wishes to declare that he is a very strong and ardent advocate of social constructivism in the learning environment.

His epistemological, ontological and methodological perspectives have thus been largely inclined towards constructivism.

However, the researcher does not want to view his strong belief in social constructivism in a negative way which could have compromised his interpretations and conclusions. Rather, this is regarded as a strong source of motivation towards perfection in research which is optimised in the passion, dedication and commitment demonstrated in his pursuit of the truth about the learning experiences of first year accounting student teachers and the implications these experiences have on curriculum implementation. It must also be mentioned that in his interpretation and presentation of the research findings, the researcher was guided by the ethical considerations that bind all social researchers. As such, there is no way research findings and conclusions could therefore have been amplified and exaggerated. The study findings were also discussed in light of research evidence from other investigations and debates from relevant literature on the study phenomena. By so doing, the researcher gave the reader of this thesis more confidence in its findings and conclusions contained thereto.

Following the above sentiments, the limitations of this study emanate from the fact that its study sample was too small to generalise the study findings to other universities and areas. Accordingly, the researcher hereby acknowledges that it was impossible to conduct a scientifically rigorous study on a very wider scale whose findings have generalised and unlimited application within the confines of higher education in a local and global context.

In addition, the sequential exploratory mixed methods research design that were used in this study require the researcher to be well conversant with both qualitative and quantitative methods and techniques. Moreover, most of the data analysis techniques that will be used rely heavily on the researcher's understanding and interpretation of the students' responses and his objective reporting. Hence, there is a risk of researcher bias and subjectivity.

However, in light of the envisaged significance of this study as presented above, it is still anticipated that the study findings will add value to the teaching and learning fraternity. By and large, it is deemed that this inquiry will supplement the existing body of literature on learning experiences of students and the implications of such learning

experiences on curriculum implementation. It is still maintained that this study will shade some light on how first year accounting student teachers' learning experiences are both a product and a function of curriculum implementation. Thus even though the study findings cannot be generalised, the educational implications of learning experiences on curriculum implementation remain significantly similar across the globe.

The outline of the chapters that make up this thesis will now be presented below.

1.14 CHAPTER OUTLINE

The purpose of chapter outline is to summarise the contents of all the chapters of this thesis. Henceforth, the chapters of this thesis have been outlined and structured as follows:

Chapter I: Orientation to the study

This chapter introduces the entire study, presents the background of the study and explains what motivated the study. The chapter also states the statement of the research problem, the aim, research questions, objectives, the significance of the study and definitions of the key terms and constructs used in the study. It also discusses the researcher's perceived methodological limitations and the special ethical considerations that will be upheld by the researcher throughout the entire study.

Chapter II: Theoretical Perspectives on the Teaching and Learning of Accounting

In this chapter, the researcher offers a detailed discussion and explanation of the theoretical frameworks within which the study is grounded. The term "theoretical framework" is also defined and the rationale for adopting one in a study is discussed as well. These are the theory of social constructivism by Lev Vygotsky and Sternberg's Theory of successful intelligence. The underlying precepts of these theories are discussed in light of their compatibility with each other. The researcher also justifies the applicability of these theories to the study, in relation to the study phenomena. The conceptual frameworks developed by the researcher from the underlying assumptions of these two theories are also presented diagrammatically. This chapter also looks at some of the previous studies in which these theories were used.

In addition, the chapter presents an in-depth evaluation, analysis and interrogation of literature on the learning experiences of students and how such learning experiences influence student learning and the attainment of academic outcomes. Attention is also given to the empirical findings in the available literature on the implications such learning experiences have on curriculum implementation. The research findings in related literature are also discussed in relation to the theoretical frameworks within which this study is grounded and also within the confines of the current study.

Chapter III: Research design and methodology

In this chapter, the researcher presents the sequence and an outline of how the study was implemented. It covers all the aspects relating to the actual implementation of the study ranging from all logistical aspects to data collection and analysis. Among others, it explains the research design and methodology, the population, sample, sampling procedure, data collection instruments, data collection procedure and data analysis techniques. More details on the special ethical considerations highlighted are also given, especially in terms of how such special ethical considerations were observed in this research.

Chapter IV: Presentation and analysis of quantitative data

This chapter deals with the presentation and analysis of the data that was generated in the quantitative strand of the study. It presents the quantitative data in ways that make it meaningful. The data is presented through descriptive and inferential statistics. The hypotheses that were advanced in this study are also presented and tested in this chapter.

Chapter V: Presentation and analysis of qualitative data

In this chapter, the researcher presents the qualitative data that was obtained from the phenomenological aspect of the study. The data from the focus group interviews is presented in respect of individual questions and the themes that emerged per question. In discussing the main themes and subthemes that emerged from them, the chapter categorises the questions into three broad overarching themes. These are multiple intelligences, the students' learning experiences and the implications these learning experiences have on curriculum implementation.

Chapter VI: Discussion of findings, implications, recommendations and conclusion

This is the last chapter of the thesis in which the researcher comes up with new knowledge about the study phenomena. In discussing the research findings, the researcher answers the research questions and hypotheses that were raised in the study. In addition, the researcher makes some recommendations to address the research problem, referring to the study's findings as a basis and justification for such recommendations. These various recommendations culminate in the development of a framework for curriculum implementation. This is also the ultimate chapter in which the realisation of the aims and objectives of the study is determined and stated accurately, reflecting on all the preceding chapters of the thesis.

1.15 SUMMARY

This chapter has oriented the reader to the study, highlighting key aspects of the study such as the introduction to the study, background to the study, the statement of the research problem, the aim of the study, research questions, research objectives, the rationale and significance of the study, definitions of key terms, a brief literature review, research design and methodology, and methodological limitations of the study. The following chapter discusses theories of social constructivism and successful intelligence, and the implications of learning experiences on curriculum implementation.

CHAPTER II

THEORETICAL PERSPECTIVES ON THE TEACHING AND LEARNING OF ACCOUNTING

2.1 INTRODUCTION

The purpose of this chapter is to explain the underlying theoretical frameworks of this thesis. In so doing, it begins by presenting the definition of a theoretical framework, its relevance and justification in a study and the value it benefited this study in particular. Thereafter, it discusses the Sternberg's triarchic theory of successful intelligence and Vygotsky's theory of social constructivism and explores their compatibility with each other and with the study itself. The educational implications of these theories are also scrutinised. Both theories are critiqued in terms of how they advance the provisions of the revised Bloom taxonomy and those of the National Curriculum Statement (Grades R- 12) and the Curriculum Assessment Policy Statement (2015). The chapter also makes reference to the revised Bloom taxonomy, not only in its capacity as an essential teaching and learning tool, but also as a custodian of quality assessment in curriculum implementation. It also includes some diagrammatical presentations of the key assumptions of these theories and how they are related to each other and to the revised Bloom's taxonomy.

2.2 DEFINITION OF A THEORETICAL FRAMEWORK AND ITS RATIONALE IN THIS STUDY

The term theoretical framework has been defined and described in literature under spectrum of perspectives (Andende, 2016; Ridley, 2012; Jesson, Matheson and Lacey, 2011; Leedy and Ormrod 2016; Ormrod, 2014b; Mwamwenda, 2010; Donald, Lazarus and Lolwana, 2002; Bitzer 2017). Be that as it may, there is a unanimous voice in the relevant literature on the purpose and importance of developing and adopting a theoretical stance in a research. Above all, a theoretical framework has been unanimously acknowledged as a central component of any research whose influence in that specific research is very phenomenal. To support this assertion, a conceptualisation of the theoretical framework developed by Nieuwenhuis (2016) demonstrates the relationship between the theoretical framework and data collection.

According to Andende (2016), a theoretical framework of a study comprises of the chosen theory or theories that control and direct the researcher's thinking,

understanding of the research topic as well as planning on how the topic will be researched. In the same vein Ridley, (2012) defines theoretical framework as a framework which provides the researcher with an explanatory device, usually in the form of relationships and categories. Jesson *et al*. (2011) view it as a proposition which explains, predicts and illustrates the relationships between phenomena.

In Ridley's (2012) perspective, a theoretical framework gives the researcher a lens to view the world and a means to interpret, understand and make sense of it. This view assumes that a theoretical framework is similar to a paradigm or philosophy as implied by Nieuwenhuis (2016). Accordingly, Lincoln and Guba (1985) are cited by Nieuwenhuis (2016) to have argued that a paradigm represents what individuals think about the world and that their actions in the world, including those they take as researchers are informed by that paradigm. Thus based on their views, Nieuwenhuis (2016) and Ridley (2012) suggest that the term theoretical framework can be used to imply a similar meaning with a paradigm. However, one has to be cautious not to assume that the terms theoretical framework and research paradigm can be used interchangeably, especially within the boundaries of this study.

A theoretical framework is derived from a given theory regarding one or more variables of the problem under investigation. Leedy and Ormrod (2016) define this theory as a well organised body of concepts and principles which are meant to explain a given phenomenon and help humankind to understand that specific phenomenon. Ormrod (2014b) remarks that as researchers acquire more knowledge about reality, the relationship between variables and the subsequent outcomes of certain events, they start to develop and design theories that consolidate and explain their findings. This assertion points to the manifestation and coming into existence of theoretical frameworks.

In such theories, researchers usually speculate about the underlying variables involved in aspects of human life such as behaviour, thinking, development, learning and motivation. Thus theories can help mankind to predict human behaviour under a set of given conditions. In line with Bryman's (2012) perspective, these theories which researchers use to better comprehend the world and reality have some tremendous influence on what is researched and on the interpretation of the ultimate research findings themselves. Bryman (2012) further asserts that most of the researched topics

are largely informed by the existing theoretical positions found within the specific research areas.

Deliberating on the importance of theories and theoretical frameworks in research and educational psychology, Ormrod (2014b) goes on to indicate that by providing humanity with such mechanisms, theories and theoretical frameworks can ultimately assist those involved in curriculum implementation to create and design learning environments that promote and enhance the highest possible academic success and achievement for students. Thus the chosen theoretical frameworks should not only guide the researcher in the study, but they must also contribute towards the development and implementation of solutions to mitigate challenges experienced by first year accounting student teachers in the learning environment where they access the curriculum. Furthermore, Ormrod's (2014b) view suggests that the theoretical framework of any study should culminate in the development of a new model to mitigate the challenges that it would have unearthed during the study.

Mwamwenda (2010) and Donald *et al.* (2002) speak in one accord that a theoretical framework orders and makes convictions between known observations and information already known. These sentiments support the earlier description offered by Jesson *et al.* (2011) on theoretical framework. Bitzer (2017) presents a more detailed view of theoretical framework which is also consistent with the earlier definitions presented above. Accordingly, Bitzer (2017) views it as an important thinking tool which includes the key concepts relevant to a study which have emerged either from literature review, one's own experiences with the phenomena under investigation or the experience of others.

From the foregoing arguments and perspectives, it can thus be concluded that a theoretical framework refers to a set of ideas, values and belief systems emanating from either literature review or real life experiences which guide the researcher's thinking about the study topic, the planning, execution of the study and data analysis. It is a landmark, a goalpost which serves as a point of reference and consistently guides the researcher in developing the research instruments, data collection, data analysis and presentation of arguments. It is further understood from the preceding discussion that a theoretical framework informs the epistemological and ontological

positions taken by the researcher. Thus any arguments and views advanced by the researcher are made within the confines of a given theoretical framework.

This research was found to be highly compatible with the assumptions and principles of both Sternberg's (2002, 2008) triarchic theory of successful intelligence and the theory of social constructivism as propounded by Vygotsky (1978, 1986). It was therefore informed by and grounded in these two theories. While the two educational psychologists who pioneered and advocated for these theories are not contemporaries at all (Vygotsky, 1978; Sternberg, 1985), they share and advance significantly similar views on teaching and learning. Their collective views and points of convergence can be used to understand the relationship between learning experiences and curriculum implementation and how learning takes place. Each of the theoretical positions advanced by Vygotsky (1978) and Sternberg (1985) makes an important contribution to humanity's articulation of curriculum implementation to a very wide and diverse student population, which is very typical of the current crop of students in all universities across the globe.

The unanimous accord and perceptions of Sternberg (1985) and Vygotsky (1978) on teaching and learning do not only provide an illuminating view of pedagogy and the importance of pedagogical knowledge for successful curriculum implementation, but they also elevate the discussion and debate on the need to adopt student centred approaches in curriculum implementation. For instance, a careful examination of their work has revealed that they both believed in the idea of multiple abilities and intelligences of students. They also agreed that while learning is a shared and collective activity, it is influenced by variables such as one's culture, experiences, the environment and language. They further concur that students come to the learning environment with various sets of skills and abilities and cognitive levels, which must always be acknowledged when implementing the curriculum.

Vygotsky (1978) and Sternberg (1985) may have held contrasting views on what constitutes effective classroom instruction but they are both advocates of differentiated instruction. Their views on teaching and learning still continue to influence most educational ideologies globally. In this regard, specific reference can be made to the education systems of countries such as the United States of America, Britain, Ireland (McKernan,2008), South Africa (du Toit, Louw and Jacobs, 2018; Mapuya, 2018;

Department of Basic Education, 2019; Killen, 2016 and Nel, Nel and Hugo, 2012), Nigeria (Daniel and Bimbola, 2010), Zimbabwe (Munyaradzi, 2013) and Australia whose underlying principles have been derived from the theory of social constructivism and the triarchic theory of successful intelligence (Feitosa, Santos, Filho, Bezerra and Pederneiras, 2013). By and large, the education systems of these countries reflect and resemble some triarchic and social constructivist elements.

Noting the dominance of their views and how they are undeniably enshrined in a host of educational systems and ideologies, the researcher was highly convinced that these theories would add tremendous value to the study. It was perceived that these two theories would create a better exploration and understanding of the learning experiences of first year accounting student teachers and the implications these learning experiences have on curriculum implementation. It was further envisaged by the researcher that these two theories would be of great use in developing and designing a model to be used in curriculum implementation and in providing students with meaningful and sound learning experiences.

In addition, the two theories were found to be highly compatible with the phenomenological and sequential explanatory mixed methods aspects of this study. Furthermore, the assumptions advanced by Vygotsky (1978, 1986) and Sternberg (1985, 2001, 2008) in their respective theories are in direct alignment with interpretivism, which is one of the philosophical orientations which have influenced this study, ranging from the formulation of research questions to the research design, research methodology and data discussion. Nieuwenhuis (2016) also brings into context another important dimension of theories and theoretical framework which is not only very relevant and important to this study but which is also aligned with social constructivism and triarchic teaching.

According to Nieuwenhuis (2016) as a paradigm, interpretivism focuses on the creation of meaning and understanding of an event or experience within a given context. Like social constructivism, phenomenology and the triarchic theory of multiple intelligences, interpretivism argues that individuals subjectively interpret and understand their experiences in the world and that their understanding of reality is different and subject to their personal experiences (Nieuwenhuis, 2016). Lastly, these theories conform to the Multiple Intelligences and Constructivist Teaching and

Learning Questionnaire (MICTLQ), which is the main data collection instrument developed and used in this study.

Coming near home, any discussion on teaching and learning dynamics in a South African context which does not refer to or draw its arguments from any of these two theories may be deemed inadequate, not relevant and not exhaustive. A thorough examination of the principles and provisions of the National Curriculum Statement (Grades R- 12) and the Curriculum Assessment Policy Statement (2015) will attest to this assertion. As such, this study was predominantly informed and inspired by the underlying precepts and philosophies of Sternberg's triarchic theory of successful intelligence and the theory of social constructivism as advanced by Vygotsky (1978, 1986).

The upcoming section will now discuss Sternberg's Triarchic theory of successful intelligence and its applicability to the current investigation. However, before exploring this theory in its depth and width, it is imperative to define what intelligence is, what constitutes intelligence and all the subsequent scholarly debates and controversies around intelligence. Therefore, the following section will be dedicated for that purpose.

2.3 THE NATURE AND TYPES OF INTELLIGENCE

Over the years, there have been some polarised debates about intelligence. Slavin (2009) alludes that most of the recent polarised debates on intelligence have been based on identifying and describing the various specific types of human intelligences. A thorough interrogation and examination of related literature and relevant sources has also revealed that academic and psychological experts seem to differ significantly on the meaning and definition of intelligence (Sternberg and Detterman, 1986; Sternberg and Grigorenko, 2007; Pal, Pal and Tourani, 2004; Ormrod, 2008; Krause, Bochner, Duchesne and McMaugh, 2010; Ormrod, 2014a, 2014b). This finding by the researcher attests to the remarks by Slavin (2009) who concludes that the definition of intelligence is characterised by inconsistencies and fundamental differences on points of opinion.

The polarised debate and disagreement on the definition of intelligence and what it constitutes goes back to as early as 1986 (Sternberg and Detterman, 1986). To substantiate this claim, reference can be made to a survey conducted by Sternberg and Detterman (1986) which involved 24 participants who were all experts on

intelligence. In this investigation on the contemporary views on the nature and definition of intelligence, Sternberg and Detterman, (1986) produced an array of definitions of intelligence. They revealed significant differences on how the study participants viewed and defined intelligence. This controversy is still prevalent among the most recent scholars on intelligence.

A closer analysis of empirical evidence from subsequent and recent investigations into the same study phenomena has also revealed that there is still no unanimously agreed definition of intelligence (Sternberg and Clinkenbeard, 1995; Sternberg and Grigorenko, 2007; Pal, Pal and Tourani, 2004; Ormrod, 2008; Krause, Bochner, Duchesne and McMaugh, 2010; Ormrod, 2014a). Even after years of research into intelligence, Ormrod (2014a) observes that psychologists are still divided as to what exactly constitutes intelligence and therefore on the precise definition of intelligence. Ormrod (2014a, 2014b) attributes this controversy to the fact that there are several components of what psychologists construe intelligence to be.

However, in spite of all the debates and differences on the definition of intelligence, psychologists are unanimous that intelligence is adaptive because it is about changing and modifying one's behaviours to be able to successfully complete new tasks (Sternberg, 1997, 2004, 2005; Gardner, 2003; Barnett and Ceci, 2002; Nisbet, 2009). They also argue in one accord that intelligence is related to an individual's learning ability. Most importantly, these psychologists (Sternberg, 1997, 2004, 2005; Gardner, 2003; Barnett and Ceci, 2002; Nisbet, 2009) are unanimous that intelligent people have a higher probability of learning and mastering information more quickly with much ease and comfort as compared to less intelligent people.

Moreover, Ormrod (2014a) maintains that even in the midst of their disagreements on the precise definition of intelligence, psychologists argue in one accord on what intelligence is all about. He observes that psychologists speak in a united voice that one of the key characteristics and features of intelligence is that it involves the use and application of one's prior knowledge to successfully and effectively examine and comprehend new situations. Slavin (2009) had earlier enunciated this view by arguing that intelligence can be defined as the general aptitude for learning and the ability to acquire and use knowledge and skills. When viewed from the idea of multiple

intelligences, Oliver (1997) notes that intelligence is the ability to solve problems that are valued in a single or several cultural settings.

This view of intelligence is also compatible with the underlying assumptions of social constructivism. Accordingly, social constructivists emphasise the role of real life experiences and prior learning or previous experiences in dealing with new experiences, challenges and learning tasks (Vygotsky, 1976, 1978, 1986; Curzon, 1991). To substantiate this line of thought, Ormrod (2014a) and Sternberg (2008) suggest that the more students know about their environment and the tasks they are required to accomplish, which is their prior knowledge, the more intelligent behaviour they can exhibit.

Looking at the above scholarly sentiments and arguments, one can conclude that intelligence is not a permanent position, condition, state or construct. It is always changing and evolving. Ormord (2014b) maintains that intelligence involves many different mental processes and differs in nature, subject to the individual's culture. To this effect, Slavin (2009) and Ormrod (2014b) allude that several unique thinking and reasoning processes are involved in intelligence. Ormrod (2014a) further notes that intelligence is culture oriented or based. The reason he advances to support this view is that what is regarded as intelligent behaviour within the realms of a specific culture may not necessarily be viewed as such from another culture's perspective of intelligent behaviour.

Taking a closer look at the preceding discussion, it can therefore be argued convincingly that intelligence is context bound. This is because what is regarded and viewed as intelligent behaviour within a given context may not necessarily be regarded and viewed as intelligent behaviour in a different context or set up. In direct alignment with these sentiments, Krause *et al.* (2010) remark that when intelligence is viewed from historical and cultural contexts, its meaning differs from one person to the other. This line of thought by Krause *et al.* (2010) is consistent with the views advanced by relativists.

According to Creswell (2013) the underlying assumption of relativism is that the truth, morality and reality are not absolute and tend to vary significantly across various contexts, cultures and historical periods. Thus while they are silent on relativism in their work, both Sternberg (2002, 2008) and Vygotsky (1978, 1986) believe in ideas

which directly conform to relativism in principle. Therefore, this study has established that while the ideas of multiple intelligences, constructivism and relativism may have been pioneered by scholars who were not contemporaries, they have a point of convergence when it comes to intelligence and curriculum implementation.

Slavin (2009) suggests that a more common and widely accepted definition of intelligence is the ability of an individual to deal with abstractions, to solve problems and to learn. This view of intelligence is also supported by Ormord (2014a) who defines intelligence as the ability to apply prior knowledge and experience easily and flexibly to carry out and accomplish challenging tasks. In the same vein, Krause *et al*. (2010) argue that the common definition of intelligence is the individuals' general aptitude and capacity for understanding and learning.

On the other hand, Sternberg (1984) defines intelligence as the purposive adaptation to, shaping of and selection of real world environment which is relevant to an individual's life. Social constructivists also uphold this view (Vygotsky, 1986; Curzon, 1991) of intelligence. However, this definition of intelligence by Sternberg (1984) suggests that intelligence is practical based and can be criticised for using adaptation as the only qualifier of intelligence. Students are involved in more than adapting to the learning environment for them to succeed. Adaptation is only one of several key pre-requisites for success.

Sternberg (1984) believes that intelligence can culminate in success in real life once it has been properly measured and defined. From Sternberg's (1984) perspective, intelligence can thus be regarded as the ability to succeed in achieving one's goals within a given sociocultural context. In support of Sternberg's (1984) view of intelligence, Pal *et al.* (2004) argue that intelligence creates positive feelings, promotes self-esteem and a sense of worth. Thus everyone wants to be intelligent, to be viewed as intelligent or at least to feel intelligent, regardless of the prevailing situation. In as much as Sternberg (1984) provides a broad approach to intelligence, social constructivism also adopts a general stance towards intelligence, especially when viewed from what constructivists believe is the purpose of education (Van Wyk and Dos Reis, 2016; Evans, Forney, Guido, Patton, and Renn. 2010).

However, both views of Slavin (2009) and Ormord (2014a) on intelligence can be criticised for their limited scope of intelligence. Looking at Sternberg's triarchic theory

of successful intelligence, it is quite evident that these views of intelligence only refer to the practical component of intelligence and ignore the analytical and creative components. The argument advanced by Krause *et al.* (2010) on intelligence can be lambasted for being too vague and ambiguous. Despite these criticisms, the various perspectives of intelligence as presented by Slavin (2009), Ormord (2014a) and Krause *et al.* (2010) have assisted the researcher to arrive at a more comprehensive and detailed understanding of intelligence. In so doing their views have significantly shaped and informed the researcher's views on intelligence and his definition thereto.

Like Gardner (2003) and Moran, Kornhaber and Gardner (2006), Sternberg dismissed and rejected the view of intelligence as a narrow set of individual abilities which are closely associated with academic learning. To this end, Sternberg (2008) argues that intelligence is multifaceted and is subject to context. According to Sternberg (2007), intelligent individuals show and demonstrate their abilities through their potential and abilities to learn and process information very quickly. Sternberg (2007) further maintains that intelligent people have the ability to respond effectively to situations and adapt to the demands of their daily challenges and experiences through modifying their needs and changing their goals where necessary. Curzon (1991) also makes similar pronouncements.

Slavin (2009) alludes that students differ in their aptitude for learning any specific type of skills or knowledge which is presented to them and taught in a specific way. This explains why many students who access the curriculum under similar conditions and in the same lecture hall may experience different kinds and amounts of learning. Additionally, this explains the differences on the performance of individual students in assessment activities and justifies the call for differentiated instruction. Slavin (2009) further points out that aptitude for the specific learning content of the lesson and the given teaching method can be cited as a fundamental reason in accounting for these differences in student learning.

While there are differences in students' abilities from one task to another, it is expected that students who are good at learning a task have a high probability of learning other tasks with ease. Intelligent students are expected to do well in a wide range of learning activities and in all the other spheres of their lives (Slavin, 2009). This view by Slavin (2009) suggests that intelligence can not only be limited to students' performance in

an assessment or learning task. There is more to intelligence than getting higher scores in tests and examinations. This is just one of the indicators of intelligence.

A comprehensive definition of intelligence must therefore make reference to and acknowledge all the three aspects of intelligence enshrined and deeply embedded in Sternberg's triarchic theory of successful intelligence. Thus, intelligence has to be viewed and defined within the parameters of the fundamental principles of Sternberg's triarchic theory of successful intelligence as well as within the immediate confines of the assumptions of social constructivism. A more comprehensive view of intelligence must thus convey some practical, analytical, creative and social connotations and take the debate of intelligence beyond the classroom and learning environment.

Informed by the preceding insights from literature review, this study therefore defined intelligence as the individual's ability to handle and deal with any prevailing situation and circumstances and navigate through them successfully towards goal attainment. Intelligence further refers to an individual's ability to read and interpret a situation and decide accordingly. It is the ability to make the right choices, for the right event at the right time. It is the individual's ability to make relevant and applicable towards overcoming all the challenges one experiences in life so that in the end, the individual succeeds in life. This view of intelligence is not only academic bound but it also connotes that intelligence relates to how individuals deal with their unique daily experiences in life and emphasises the context in which such experiences are dealt with.

Hence, central to the researcher's view of intelligence is that it is not only confined to the ideal teaching and learning classroom situation where students are graded and promoted based on how well they respond to questions and their academic performance in assessments and evaluations. It extends beyond the classroom to all the other non-academic contexts where individuals have to make choices and decisions. Therefore, the lecture hall and the learning environment are not the only places where intelligence can manifest itself, be shown and measured. This view of intelligence was found to be applicable both to the triarchic theory of successful intelligence and the theory of social constructivism. In addition, it also resonates well with phenomenology, interpretivist and relativism, some of the key epistemological and ontological philosophies which have informed the methodological aspects of this

study. Looking at the above interpretation of intelligence, one can argue that Sternberg (1986, 2003) and Vygotsky (1978) shared similar ideas on what intelligence is all about.

The position taken by the researcher on intelligence also conforms to global perspectives and imperatives on the intelligence. An investigation by Sternberg, Conway, Ketron and Bernstein (1981) and Sternberg (2002) in the United States reveals that from an American perspective, intelligence includes elements such as practical problem solving, social competence and verbal ability. In another study by Yang and Sternberg (1997) it is revealed that the Chinese people view intelligence as a phenomenon with five dimensions. These are cognitive skills, which are related to mental processes and abilities, interpersonal skills, which refer to the ability to work, communicate and engage with other people, intellectual self-assertion, intrapersonal skills and intellectual self- effacement. According to an investigation by Grigorenko *et al.* (2001) the people of Kenya view intelligence as declaration and procedural knowledge, respect, initiative and comprehension of social situations.

After presenting the various global views and perceptions of what intelligence is, it is important to deliberate on and zoom into the idea of multiple intelligences in general and how these views of multiple intelligences implicate curriculum implementation. Therefore, the following upcoming paragraphs provide a scholastic analysis of the general perspectives of the idea of multiple intelligences and its educational implications.

2.4 MULTIPLE INTELLIGENCES AND ITS EDUCATIONAL IMPLICATIONS

Gardner's theory of multiple intelligence which was originally developed and produced in 1983; provides those involved in curriculum implementation with a new way of viewing the students' abilities and intelligences (Seroto, 2015). Proponents of the idea of multiple intelligences suggest that an individual possesses a set of abilities and intelligences as opposed to a single type of intelligence. As earlier alluded to, Sternberg (1977, 1980, 1983) argues that human intelligence falls under three broad categories of practical intelligence, analytical intelligence and creative intelligence. On the other hand, Moran, Kornhaber and Gardener (2006) identify nine multiple intelligences. This argument brings to context Gardener's theory of multiple intelligences (1981).

Gardner (1983) presents a new and different view of intelligence from that of Sternberg (1977, 1981). Gardner (1999) makes a bold and cogent argument that all individuals are born with or can develop multiple intelligences. According to Gardner (1999), students learn in many different ways and have different learning abilities. He further proposes that students adopt and use many different and distinctive approaches, sometimes depending on the context of the learning environment and the learning task on hand.

Gardener's (1999) theory of multiple intelligences contends that an individual has nine separate abilities. Moran *et al.* (2006) and Seroto (2015), identifies these nine distinctive abilities as spatial, linguistic, bodily-kinaesthic, mathematical, naturalistic, musical, interpersonal, logical, intrapersonal and existential. Since its inception, Gardener's theory of multiple intelligences has been both popular and controversial. Moran *et al*. (2006) note that it has been widely criticised for having very limited evidence from empirical studies on the brain and measurement of intelligence quotient to substantiate the idea of multiple intelligences which is at the centre of this theory. Watkins and Canivez (2004) and Slavin (2009) share similar views with Moran *et al*. (2006) on why Gardener's theory of multiple intelligences has faced so much criticism. They are all unanimous that there is a need for more empirical investigations to test and accept or reject the idea of multiple intelligences. On the basis of very limited relevant literature and related studies on intelligence, this study has also established the need to further investigate and probe the idea of multiple intelligences.

However, in response to some of the criticisms levelled towards multiple intelligences, Brualdi (1998) cautions that while individuals are considered to have several intelligences, these intelligences do not operate in isolation from each other and are therefore difficult to measure and identify. In most cases, they complement and support each other. This justifies why curriculum implementation cannot just be a one sided process which concentrates on only a specific type of ability or intelligence. This conclusion is also supported by Horsthemke, Siyakwazi, Walton and Wolhuter, (2013) and Seroto (2015) who argue that no student is good at all the various types of intelligences, instead a student may excel in a few of them. According to Pal, Pal and Tourani (2004) all these multiple intelligences have been unfortunately overlooked over the years. They maintain that, if properly acknowledged, these multiple

intelligences can be nurtured and nourished to make individuals more competent and successful in life.

The arguments about multiple intelligences (whether or not it can be scientifically substantiated) do not only have some serious implications on curriculum implementation and the overall teaching and learning activities. It also influences the nature and types of assessments to be given to students. It influences assessment of and assessment for learning and the provisions of the revised Bloom taxonomy. To this end, Dreyer (2015) cautions that those involved in curriculum implementation ought to understand that the current assessment in institutions of higher education is different from the form of assessment conducted at schools.

Dreyer (2015) maintains that assessment in higher education is done to determine if the curriculum was implemented successfully, if the students require more instruction, to ascertain if there is a need to change the approaches used in curriculum implementation and how the teaching and learning process can be improved. Dreyer (2015) further argues that assessing curriculum implementation is a dynamic process not only as a result of the changing legislation to this effect, but because the current students face a world that requires new knowledge, understanding and skills. Thus students cannot be assessed on only one ability or type of intelligence.

Stakeholders involved in curriculum implementation in higher education are called upon to appreciate that students do not only need to have a basic understanding of the subject content, but they also need to think critically, reflectively, analytically, practically and creatively. Curriculum implementation and the subsequent various forms of assessment must therefore be designed and administered in such a manner that they help the students to meet these requirements.

However, the idea of multiple intelligences has not been without its distractors. Much of the criticisms directed at the idea of multiple intelligences has emanated from the failure by its proponents to provide compelling scientific evidence. Ormrod (2014a) subscribes to the earlier views of Waterhouse (2006) who notes that many psychologists argue that there is no sufficient evidence which is compelling enough to substantiate the view of multiple intelligences.

Nevertheless, while there is very limited evidence and research on multiple intelligences, Seroto (2015) maintains that this view upholds the idea that the

curriculum has to be implemented through different approaches and that the students' learning can be assessed and evaluated through a variety of activities. Seroto (2015) further notes that the argument of multiple intelligences is very important in implementing the curriculum to the diverse and multicultural students in the learning environment and also for instructional purposes. The idea of multiple intelligences and abilities demonstrates that all students have the ability to acquire deep understanding and mastery of teaching and learning activities in most of the subject content which is presented to them in the lecture halls in one way or the other.

Lastly, the theories of multiple intelligences provide opportunities for authentic learning premised on the students' learning needs, interests and abilities. Stakeholders involved in curriculum implementation need to design and implement a host of instructional material for their diverse students and to vary curriculum implementation accordingly. They should be able to make demonstrations and illustrations from diverse social, economic and cultural backgrounds in curriculum implementation.

After a thorough analysis of both Gardner's (1999) theory of multiple intelligence and Sternberg' (1977) triarchic theory of successful intelligence, the researcher concludes that Sternberg (1977, 1983, 2001, 2003, 2008) provides a more accurate and realistic view of intelligence from an educational perspective. Gardener's (1999) nine intelligences were found to be difficult to measure and identify in the learning environment where the accounting curriculum is implemented. They are simply too broad and general. It must also be noted that, Gardner (1999) failed to defend his idea of nine distinctive intelligences by follow-up scientific studies, like Sternberg (2002, 2004, 2006, 2008). There is currently no existing further research (either by Gardner himself or by his followers) known by this researcher to corroborate Gardner's (1999) idea of nine distinctive intelligences which can be used as a basis to justify the use of this theory in curriculum implementation.

Unlike Gardener (1999) Sternberg (2008) provides his followers with some guidelines on how to practically incorporate and evaluate the various types of intelligence when they implement a curriculum. Like the revised Bloom taxonomy (cf. 2.3.3), Sternberg's (2002, 2004, 2006, 2008) theory of successful intelligence provides those involved in curriculum implementation with a clear cut criterion and actual verbs that can be used to promote each of the three types of intelligences which are imbedded in this theory.

In addition, the analytical, practical and creative intelligences are easily distinguishable in the learning environment of this study. This is demonstrated by the first question of the questionnaire which was distributed to the first year accounting student teachers (Appendix 4). Furthermore, their prevalence in curriculum implementation could be measured easily and accurately (Sternberg,2008 and 2009).

Thus the triarchic theory of successful intelligence was chosen as the most suitable theoretical perspective from which to explore the learning experiences of first year accounting student teachers and the implications such experiences have on curriculum implementation. It also informed the subsequent discussions on curriculum implementation and in the creation of the model. The upcoming section therefore presents an in-depth analysis of Sternberg's triarchic theory of successful intelligence.

2.4.1 Sternberg's Triarchic Theory of Successful Intelligence

According to Sternberg (1998, 2003, 2004, 2007, 2008), there are three major types of intelligence in which individuals can be highly or lowly intelligent. These three domains form the basic foundation of the triarchic theory of successful intelligence. The triarchic theory of successful intelligence by Sternberg (1984) symbolises significant effort to synthesise the few available theories of intelligence. Sternberg's triarchic theory of successful intelligence (1977) has some significant implications on classroom pedagogy and curriculum implementation in the learning environment.

Krause *et al*. (2010) argue that it is called a triarchic theory of intelligence because Sternberg (1977) has identified three key domains of intelligent behaviour. Through this threefold perception of intelligence, the theory of successful intelligence provides an illuminating view of implementing the curriculum in ways that are appealing to all the diverse students in the learning environment for successful teaching and learning to take place. It also lays a foundation for teaching and learning which guarantees the academic success of every student in the learning environment, regardless of the absence or presence of certain specific skills, competencies and cognitive thinking abilities.

Sternberg's triarchic theory of successful intelligence advocates for an approach to teaching and learning which recognises the needs of individual students in learning environment and strongly warns against a one size fits all approach to teaching and learning activities. This line of thought is also supported by Horsthemke *et al*. (2013)

in their work on curriculum implementation and learning experiences. By so doing, it challenges those involved in the implementation of the curriculum to make sure that no student is left behind as a result of differences between the student's teaching and learning needs and the pedagogical paradigm used in the learning environment (Killen 2016). This point vindicates the earlier concerns of Vygotsky (1978, 1986) who questioned the value and applicability of standardised tests to evaluate and determine the educational potential of individual students. It further strengthens Vygotsky's (1978; 1986) argument that there is no a single effective model or approach for curriculum implementation and in the assessment of the teaching and learning process.

According to Pal *et al.* (2004) of the many theories of intelligence, none of them deals with and addresses the scope of intelligence holistically, satisfactorily and successfully. Contrary to these sentiments, the researcher is adequately convinced and satisfied that Sternberg's triarchic theory of successful intelligence provides an equally exhaustive and all-inclusive view of intelligence. As earlier alluded to, a survey of related literature has revealed that Sternberg (1977, 2002, 2004, 2006, 2008) identifies and describes three types of intellectual abilities which qualify intelligence. Such three types of intellectual abilities are creative, analytical and practical.

Judging from the various facets of intelligence which it covers, this theory plays a critical role in illustrating and helping accounting lecturers involved in curriculum implementation to comprehend the relationship between students' learning experiences in the classroom and curriculum implementation and the implications these experiences have on assessments and evaluations. It then proceeds to explain how lecturers should implement the curriculum and evaluate it to promote successful learning and the academic success of every student in the learning environment.

In support of the theory of successful intelligence and its contribution to educational psychology, Krause *et al*. (2010) maintain that Sternberg is one of the most prolific scholars on intelligence whose ideas continue to influence curriculum implementation, teaching practice and assessments in most educational systems today. A well balanced assessment, for instance, must adequately include and cover all the students' abilities and intelligences as propounded by Sternberg (1977, 2002, 2004, 2006, 2008).

The triarchic theory of multiple intelligences as propounded by Sternberg (1977, 2002, 2004, 2006, 2008) will now be discussed.

2.4.2 Sternberg's triarchic views on intelligence

An in-depth discussion and analysis of these three domains will now be presented below.

2.4.2.1 Analytical Intelligence

Analytical Intelligence is componential. According to Sternberg (1977, 1998, 2008) this is the first type of intelligence which is about making sense of, contrasting, analysing and evaluating the various kinds of information and problems that are usually found in academic settings such as the learning environment and in intelligence tests. Analytical intelligence is associated with reasoning, problem solving and knowledge acquisition. Analytical intelligence is measured by the student's problem solving skills. It deals with a person's ability to think and reflect critically, to analyse and evaluate ideas meaningfully and to solve problems and make decisions successfully (Sternberg, 1977, 1980, 1983; Sternberg andGardner,1983; Guyote and Sternberg, 1981; Sternberg and Powell,1983a, 1983b).

In light of the revised Bloom taxonomy, this type of intelligence falls under levels four and five, namely analysing and evaluating respectively (Killen 2016; Jacobs, 2016 and cf. Tables 2.1 and 2.2). Analytical intelligence reflects and shows how individuals relate to their internal world (Sternberg, 1977; Sternberg and Gardner, 1983). Sternberg (1977) argues that analytical intelligence is rooted in the collective functioning of metacomponents and performance components as well as the knowledge acquisition components of intelligence. It is important to discuss what Sternberg believes to be the primary function and significance of each of these three components of analytical intelligence.

Sternberg (1977) argues that metacomponents are responsible for controlling, monitoring and evaluating the cognitive processing. These are regarded as the major functions whose sole responsibility is to sequence and direct the knowledge acquisition and performance components. Individuals use metacomponents when analysing problems and selecting the most suitable strategy to solve those problems.

Metacomponents decide what to do while the performance components actually put that decision into action.

From the last sentence above, it follows that Sternberg's (1977) view of performance components is that they are responsible for executing problem solving strategies that would have been suggested and assembled by metacomponents. As such, they are the essential operations involved in any cognitive action (Sternberg, 1977).

In the view of Sternberg (1980), performance components deal with the thinking and mental functioning processes that enable human beings to make sense from given experiences, store information in short memory, carry out calculations which are simple and mental based, differentiate between various stimuli and recover the information that was stored in long term memory. This is an important aspect of intelligence which must be seriously considered in curriculum implementation and in learning activities if all students are to reach their highest academic potential.

The last component of analytical intelligence which this study believes to be significant in the teaching and learning process is the knowledge acquisition component. According to Sternberg (1977; 1981), these are the processes used by individuals to acquire and store new knowledge. By and large, the knowledge acquisition components determine the students' learning capacity, for instance, the strategies they use to understand and remember new knowledge. Referring to the definitions of the key words and terms used in this study (c.f. 1.12.2), Sternberg's view of the knowledge acquisition components is consistent with the definition of learning strategies as suggested by Merriam, *et al.* (2007); Evans, *et al*, (2010); Fayombo, (2015); Fardon, (2013); Dunn and Griggs, (2000) and Fardon, (2013). It is therefore advanced in this study that the knowledge acquisition components are synonymous with learning strategies.

In light of the professed significant role played by the knowledge acquisition components of analytical intelligence, it is necessary to caution the stakeholders involved in curriculum implementation that any approaches that do not complement the students' preferred learning styles will hinder them from reaching their highest academic potential. In support of the researcher's sentiments on the importance of the knowledge acquisition components in the teaching and learning process, reference can be made to the work of Seroto (2015), Evans *et al*. (2010); King (2003) and

Desmedt and Valcke (2004). They collectively emphasise that the curriculum must be implemented using approaches that support the students' chosen learning styles. Sternberg (1977, 1981) refers to this as the knowledge acquisition components of analytical intelligence.

To strengthen the above sentiments, investigations by Grigorenko, Jarvin and Sternberg (2002) and Sternberg, Torff and Grigorenko (1998) demonstrate that when students are taught in ways that are not consistent with their learning styles, they are bound to perform poorly in all academic activities. The shortage of recent research evidence to support or dispute these claims; calls for further investigations into the relationship between learning styles, teaching approaches and academic performance in higher education.

Sternberg (1977, 1983) suggests that the difference in students' academic performance, reasoning and problem solving skills is largely attributed to individual differences in application of the knowledge acquisition components. To this effect, Sternberg (1977) argues that students who have superior and efficient reasoning abilities tend to spend more time to understand the problem. However, once such students have acquired the required understanding, they are able to find solutions to the problem faster than their counterparts who are less skilled at the task.

According to Sternberg (2009), implementing the curriculum analytically implies that lecturers and educators encourage students to analyse; critique, judge, compare and contrast, evaluate and assess. To determine the prevalence of analytical intelligent seeking questions, this study posed question one in the qualitative interviews to students (Appendix 5). Teaching for critical thinking is synonymous with teaching for analytical thinking. The challenge of the contemporary lecturer and educator is to figure out the translation of such teaching instructional and assessment activities when implementing the curriculum. For instance, students can be presented with a host of different transactions and be asked to analyse and illustrate their effect on the accounting equation.

As demonstrated by Killen (2016) and Jacobs, (2016), learning tasks and activities which seek to promote the analytical intelligence of students would be categorised under the applying and evaluating levels of the revised Bloom taxonomy. Thus analytical intelligence falls within levels four and five of the revised Bloom taxonomy

(cf. Table 2.1). It must also be noted that Sternberg (2008) shares similar views with Jacobs (2016) on how to promote the analytical intelligence and skills of students. Both Sternberg (2008) and Jacobs (2016) propose almost similar verbs which those involved in curriculum implementation can use in teaching and learning activities to promote analytical intelligence (analysing according to the revised Bloom taxonomy, cf. Table.2.1).

2.4.2.2 Creative Intelligence

Creative Intelligence is experiential. Sternberg and Lubart (1995) and Sternberg (2002) note that creative intelligence emphasizes divergent learning activities and tasks such as writing short stories designing advertisements for boring products, designing artworks and responding to scientific creative problems. Sternberg (2002) goes on to argue that creative intelligence refers to a person's ability to go beyond that which is given to design and produce novel and interesting ideas. On the other hand, Jacobs (2016) defines creativity as the process of bringing something new into existence. In the perceptions of Ormrod (2014a) the analysis, supposition and imagination of ideas within the boundaries of new experiences and encounters is the main focus of creative intelligence.

Sternberg (1977) also suggests that this is experiential aspect of intelligence which demonstrates how individuals perceive the relationship and connections between the internal world and external reality. This assumption is consistent with the principles of the social constructivism view of teaching and learning as propounded by Vygotsky (1976, 1986). Vygotsky (1976) argues that students learn better when they are led to new conclusions and about the learning matter. He further argues that students are more likely to retain knowledge and remember it better when they have discovered it for themselves. When students are actively involved in the creation of knowledge, they are bound to retain it for a lifetime.

The educational implication of this for curriculum implementation is that teaching and learning which do not promote the creative ability of students do not result in lasting and meaningful learning. Students must be given opportunities to establish the link between their internal world and the external world of reality and to use what they already know about the subject matter to arrive at new conclusions and ideas. For students to reach their highest creative ability, they need to have a sound knowledge

and understanding of the subject content and be able to use it to design, develop, generate or come up with new products, ideas, hypothesis and conclusions. It must also be noted that for students to be able to create something, they rely heavily on previously learnt ideas and knowledge.

According to Sternberg (1977), the creative component of intelligence comprises of the individual's ability to think creatively and adjust to new situations with a higher degree of creativity and efficiency. In Sternberg's (1977) analysis of the above, people who are intelligent creatively can easily navigate between learning new and abstract things to finding ways of dealing with new learning tasks with great ease. Creative intelligent students are therefore able to arrive at new ways of solving academic problems based on the prior knowledge and previous learning experiences. They find better and more efficient ways and methods of learning and dealing with challenges.

In his articulation of the implications of creative intelligence in curriculum implementation, Sternberg (2009) suggests that to teach creatively is to encourage students to create, invent, discover, predict, imagine and suppose. In their earlier studies of intelligence, Sternberg and Lubart (1995) and Sternberg and Williams (1996) argued that teaching for creativity calls upon curriculum implementers to encourage and support creativity, to demonstrate it in their classrooms and to reward it when their students display it. In the views of Jacobs (2016), to foster and nurture creativity, those involved in curriculum implementation should not only stick to a typical lesson or classroom script. Instead, they should ask many open-ended questions that stimulate and facilitate divergent answers from students. This will encourage students to take risks, be willing and free to steer classroom discussions away from the comfort of the usual norm to totally new and unusual directions and horizons (Jacobs, 2016).

Furthermore, lecturers can promote the creative ability of students through modelling that creativity itself. Jacobs (2016) suggests that this can be achieved through being curious, innovative, inventive and enthusiastic in the implementation of the curriculum and in teaching and learning activities. Modelling creativity also includes the lecturer's approach to subject content and general attitude in the learning environment. To promote the creative ability of students, it is important for those involved in curriculum implementation to provide students with adequate opportunities to demonstrate their unbiased views, diversity and uniqueness towards subject content and learning

activities. Nurturing creative intelligence also connotes to the ideologies of multiple perspectives to the truth and reality as propagated by constructivists, interpretivists, phenomenologists and relativists.

When this is considered in the context of this study, students can be asked to come up with transactions which reduce owner's equity on the accounting equation or to describe a typical example of unethical conduct in a business sense. The first suggested task challenges students to create, design, imagine and invent their own original transactions, with imaginary names of businesses, monetary value of the transaction, imaginary dates and reasons for the transactions.

To be able to successfully and meaningfully engage in this type of a learning activity, students need to have an adequate and sound understanding of the accounting equation and how it is affected by various transactions. When students excel in this type of learning activities, there is no doubt that they will do well in all the other tasks related to the accounting equation. This is because when looking at the revised Bloom taxonomy, creative intelligence falls in the last level of higher-order thinking (Jacobs, 2016). For students to be creative, they need to be adequately competent in all the other cognitive levels that culminate to creativity. It is also important to highlight that the students' creative intelligence does not function in isolation of the analytical and practical intelligences.

2.4.2.3 Practical Intelligence

Practical intelligence is contextual. It is the tacit knowledge which individuals need to be successful in life. It is not explicitly taught and is usually not verbalised (Sternberg, 2002). Sternberg (1977) believes that practical intelligence focuses on the individual's ability and capacity to grasp, comprehend, understand, handle and deal with daily tasks encountered in real life. Therefore, it is viewed as the contextual component of intelligence in which individuals demonstrate their perceptions about their relationship with the real external world (Sternberg, 2007).

As viewed by Ormrod (2014a), practical intelligence is concerned with the effective and efficient application of one's knowledge and skills to react to and be in control of the problems and challenges experienced in daily life. Practical intelligence is further regarded as the ability to make effective solutions, solve real problems that one encounters in real life and to implement ideas successfully (Sternberg, Forsythe,

Hedlund, Horvath, Snook, Williams, Wagner and Grigorenko, 2000). It must be pointed out that individuals do not necessarily learn the skills of practical intelligence at school or in universities, but these skills make them successful in their interactions with the world and reality, which is a shared view with social constructivism (Vygotsky, 1978, 1986) and interpretivism (Creswell, 2013).

Practical intelligence enables individuals to operate and navigate successfully in the real world. It deals with one's ability to have continued survival in various contexts. Sternberg (1977) points out that individuals who are practically intelligent are always successful in adapting to and shaping their environments. Practical intelligence is a product of three distinctive components. These are, adapting to the environment to meet one's goals, changing the environment to meet those goals according to one's preferences and in the event that the aforementioned two components fail, relocating to a totally new environment in which goals can be attained. The selection of a new environment is entirely based on an environment which is consistent with the individual's needs and preferences. When individuals successfully control their environment, they are also able to use their strengths to the fullest potential while compensating for their weaknesses.

This notion of three distinctive components of practical intelligence has some very important implications for students and educators. Both educators and students always work towards achieving some specific educational goals within a given context and learning environment. For students, it can be in the classroom, in the library or at home. Sternberg (2008) suggests that students who succeed in attaining their educational goals are those who can successfully adapt to the environment in which they engage in teaching and learning activities.

Davis, Haworth and Plomin (2009) and Ormrod (2014b) reiterate the sentiments of Sternberg (2008) and argue that students always actively look for environments that are compatible with their existing behaviours and characteristics. Ormrod (2014b) in particular argues that as learners get older, they develop an increasing desire and ability to control their learning environments. This view is applicable to this study in its totality because the study involved more mature individuals –first year accounting student teachers who tend to have a much more increased desire and ability to be in control of their learning environment.

Ormrod (2014b) notes that with such high desire and ability, the students tend to look for learning environments in which they feel comfortable, which conform to their learning abilities, needs, and interests, and which ultimately enable them to successfully engage in preferred learning activities. In their study on adaptation, Davis *et al*. (2009) discovered that the students' tendency to search for learning environments that matched with their behaviours and characteristics tended to increase any possible existing differences among the students. From a social constructivist perspective, it further complicates issues of diversity among students in the same learning environment.

If the environment is not conducive for meaningful and successful learning, the student must make effort to change and shape it so that it becomes favourable for learning. This explains why for instance, an individual closes the window or door when trying to study and concentrate and there is noise, wind or cold air coming from the outside. Another example is when a person trying to study fails to do so properly because of darkness or lack of visibility in the environment in which they are trying to study. A practically intelligent student will find ways to improve visibility in that environment to be able to study properly. This can be done by switching on the lights or lighting a candle. All these efforts are meant to modify the environment so that ultimately, the student can study properly and be able to achieve set educational goals.

Curzon (1991) provides another dimension of practical intelligence and the students' desire to be in control of their learning environment. Accordingly, Curzon (1991) notes that the aspects of reception, interpretation, storage and retrieval of information and learned facts; are important variables in the students' attempts to change and control their learning environment. Individuals who are more successful in carrying out these operations are generally more able to control and change their environment in accordance with their needs and wishes.

When all the practically possible adaptations and modifications of the environment fail to make it possible for the student to achieve the desired educational goals in it, a practically intelligent student will look for a new environment in which the goals can be attained (Sternberg, 2008). Referring to the above examples, the student will have to look for a new classroom or place to study and engage in learning activities successfully. This explains why a student may move from a very noisy class or

environment to an isolated quiet place where goal attainment is possible. Thus, the inherent desire by individuals to constantly be in control of their surroundings; especially those in which they operate and seek to achieve certain goals; is an important pointer of practical intelligence.

From the above view of practical intelligence, one can therefore conclude that it refers to common sense and its application in various daily experiences the individuals find themselves in. This conclusion is also consistent with Vygotsky's (1977, 1986) basic requirement and pre-requisite for individuals to succeed in life. Like Sternberg (1977, 1982), Vygotsky (1977) believes that a person's continued survival in any given context is based on one's ability to adapt to or modify their surroundings and to identify an alternative environment in which continued survival is guaranteed.

Therefore, it follows that every person can be practically intelligent, depending on the context in which the practical intelligent behaviour has been demonstrated. To come near home, when implanting the accounting curriculum, a lecturer who manages to get the cooperation and collaboration of a rebellious and uncooperative student community and implement the curriculum successfully is also regarded as practically intelligent. In the same way, student who manages to can quickly adjust in an accounting examination and be able to pass the exam while the other students are failing to adjust to the prevailing examination condition is regarded as practically intelligent. During a discussion, a student who can identify a possible conflict and do everything to avert it also regarded as practically intelligent. Lastly, while on teaching practice in the schools, an accounting student who manages to settle in the school environment very quickly and get along with all the other people in the school is also regarded as practically intelligent.

Sternberg (2009) argues that teaching practically implies that lecturers and educators encourage students to use, apply, implement or employ what they already know in various learning activities. Similar to constructivism, teaching practically means that curriculum implementation must be informed by and correspond with the real practical needs of all the students as opposed to what would only be practical for a few students in the learning environment. Practical intelligent promoting learning activities would fall under level three (applying) of the revised Bloom taxonomy (Jacobs, 2016). Both

Sternberg (2008) and Jacobs (2016) suggest similar verbs that can be used to promote the practical abilities of students (cf. Table 2.1).

For instance, in this study, a relevant learning task which promotes the practical ability of students would be one which requires students to calculate the depreciation of a vehicle that was bought on 01 July 2017 using the reducing balance method at a rate of 20% per annum. The financial year end of will be 30 June 2018. This learning task requires students to practically apply the theory they have learned on calculating depreciation using the reducing balance method on this given practical situation.

After explaining and expressing his views on multiple intelligences, Sternberg (2001, 2003, 2007, 2008) further suggests that intelligent behaviour is about an interplay of three factors, which all differ from one experience to the next. These are the environmental context in which the behaviour occurs (Vygotsky 1976, 1986 refers to this as real life experiences), the manner in which ones' previous experiences are applied on a specific task (Vygotsky 1976 and 1986 refers to this as prior learning) and the cognitive processes that are required by the task. These three factors are presented diagrammatically below in Figure 2.1

As explained above, Figure 2.1 below shows the interplay of the three pivotal factors in any discussion of intelligent practical behaviour, which are the environment prior experiences and cognitive processes. These three factors will now be explained individually.

- **The role of the environment**

Ormrod (2014a) and Sternberg (2008) contend that intelligence involves adaptation. According to Sternberg (2002, 2008) such adaptation usually manifests itself in three forms. These are developing and modifying a response to deal successfully with specific environmental conditions. In the current study, this refers to the ability of the first year accounting student teachers to formulate responses in accordance with the given information in Accounting. Sometimes students need to alter their existing schemes or patterns of knowledge to deal with, for instance, additional information when preparing financial statements. Viewed from the immediate confines of this study, the learning environment of accounting for first year student teachers is full of students with different languages. These students will have to formulate their

responses and present them in a language that is suitable and understandable to all the other students.

Figure 2.1. Factors at the centre of intelligent behaviour

In addition, the tone and language which students use to respond to questions in formal lecturers is different from the one they use in group discussions or during supplementary sessions and even on their subject related social networks. Looking at the role of the environment, it is also necessary to look at the students' ability to select an alternative environment that is more conducive to success. Explained within the boundaries of this study, when the first year accounting student teachers realise that the current venue they are using for group discussions is noisy or not comfortable at

all, they tend to look for an alternative venue in which they will be able to engage in learning more effectively and productively.

The behaviour of students can be more or less adaptive, based on three skills that qualify that adaptiveness (Sternberg, Forsythe, Hedlund, Horvath, Wagner, Williams, Snook and Grigorenko, 2000). Firstly, they identify practical problem solving ability as one of the three factors which qualify adaptive behaviour. This includes the students' ability to identify the exact nature and type of a problem in a given context, to reason logically about such a problem and generate a host of possible solutions to the identified problem. For instance, in the current study, when the first year accounting student teachers are drawing up a balance sheet or trial balance and it fails to balance at the end, they should be able to work out the problem why it does not balance and be able to correct it.

Sternberg *et al*. (2008) also identify the students' verbal ability as the second qualifier of adaptive intelligence. According to Sternberg *et al*. (2008) this refers to the students' ability to speak and write clearly, develop and use an extensive vocabulary and be able to learn and understand from a written text or what one reads. Research on reading skills for understanding and their role towards academic achievement of students demonstrates that reading for understanding is an indispensable skill for students in any learning area.

Lastly, Sternberg *et al.* (2002, 2006) cite social competence as the third factor which influences adaptive behaviour. They argue that social competence refers to the ability of the students to relate well and effectively with others, being sensitive to and conscious of their needs, wishes and providing leadership. Ormrod (2014b) argues that this skill in particular is cultural and is promoted by group activities in which students work in groups. This is where Vygotsky's (1978) philosophy of group teaching and learning can come into perspective, specifically the idea of cooperative learning, which is also enshrined in the grades 10 to 12 accounting Curriculum and Assessment Policy Statement (Department of Basic Education, 2011).

Both Ormrod (2014b) and Vygotsky (1978) argue that in such cooperative learning groups, students need to develop and adopt a working and social relationship for them to be able to work collaboratively and cooperatively towards the attainment of shared educational goals and objectives. For them to arrive at a shared and common

understanding of the subject matter, it is imperative that the students relate to each other effectively. They also need to show respect and tolerance towards each other's different views, learning needs and opinions. Social competence thus implies that the students can work united and harmoniously to accomplish a learning task without the direct supervision of the lecturer.

- **The role of prior experiences**

Sternberg (2008) and Ormrod (2014b) point out that intelligent behaviour includes the ability to successfully deal with completely new situations and encounters. This requires students to be able to apply what they already know to solve such new problems. As such, when students come across a new learning task, they should be able to draw on past experiences and consider the nature and types of responses that have been considered as correct in circumstances of a similar nature.

The students' ability to generalise correctly from previous learning experiences improves and increases their ability to adapt quickly and deal with challenges successfully. To this effect, Ormrod (2014b) conclude that students can behave more intelligently when they have the necessary prior experience to learn and draw from. Prior experiences also imply that the students are more prepared and ready to face and deal with new challenges and learning tasks. Lastly, prior experiences mean that previous learning mistakes that led to failure are less likely to be repeated in new learning tasks.

For instance, the concept of automaticity is demonstrated when a first year accounting student teacher can quickly and accurately calculate depreciation of an asset using a given method such as the reducing balance method. According to Slavin (2009) and Ormrod (2014b), automaticity is the student's ability to respond quickly and efficiently to a learning task as a result of previous experience. As such, students can behave in a very intelligent way when they have the relevant prior experiences to refer to for insights and guidance.

- **The role of cognitive processes**

Researchers such as Nisbett (2009), Moran *et al*. (2006) and Evans *et al*. (2010) concur with Ormrod (2014b) that the ability of students to behave intellectually differs significantly from one student to the other, subject to the specific knowledge, skills and cognitive processes required to perform the task. Sternberg (2008) was convinced that

the students' levels of cognitive engagement in teaching and learning activities and their ability to engage in higher cognitive processes depended largely on distributed intelligence.

According to Ormrod (2014b), distributed intelligence refers to the thinking which is enhanced and facilitated by social collaboration and support, physical objects and technology or symbols and concepts of one's culture. This view is also very consistent with the underlying assumptions and principles of constructivism, as advanced by Vygotsky (1878) and demonstrated by Mapuya (2018). The idea of distributed intelligence as an important of determinant of cognitive processes suggest that students are more likely to succeed in handling and dealing with a task of any magnitude and cognitive level if they can (share) pass the cognitive burden to someone else or something else.

Evans *et al.* (2010) suggest that sharing and passing on the cognitive burden of a learning task can be done in three ways. Firstly, it is possible when the students can use a physical object such as a technological device and technology itself to deal with and process huge volumes of information. In the current study, the first year accounting student teachers can achieve this when they use calculators for calculations. Secondly, Evans *et al.* (2010) and Nisbett (2009) concur that students can pass and share the cognitive burden when they can represent and think about their experiences using various symbols of their culture such as words, diagrams, charts and other cognitive tools. The use of diagrams and charts is very common in the teaching and learning of accounting for first year student teachers. For instance, a flow diagram can be used to present and illustrate the recording and posting of transactions from the books of prime entry to the general ledger. The accounting equation is one of the most famous and common diagrammatical presentation of the effects of individual transactions in a business sense. Lastly, distributed intelligence is enhanced when the students can work together with their classmates to share ideas and solve problems (Ormrod, 2014b).

Having discussed the three major types of intelligence that are at the centre of Sternberg's triarchic theory of successful intelligence, it is necessary to examine the compatibility of triarchic teaching with the revised Bloom's taxonomy. At this moment,

it is worth reminding the reader that all teaching and learning must always conform to and be in harmony with the revised Bloom's taxonomy.

2.4.3 The Compatibility of Sternberg's Triarchic Theory of Successful Intelligences with the Revised Bloom's Taxonomy

By virtue of Bloom's taxonomy being a custodian and gatekeeper of the formulation of learning objectives, assessment and evaluation of student learning, all of which are important aspects of curriculum implementation, it becomes an indispensable tool in curriculum implementation. Killen (2016) endorses this claim by noting that the revised Bloom's taxonomy can be used to guide those involved in curriculum implementation to identify the common aspects of learning outcomes and to simplify the process of aligning learning outcomes with teaching strategies.

According to du Toit, Louw and Jacobs (2016), the revised Bloom's taxonomy is a prominent and most commonly used educational tool in most educational systems. This study also maintains that any approach to curriculum implementation which does not conform to the ideas of the revised Bloom's taxonomy is cognitively and pedagogically lacking. As such, it is therefore necessary to explore its implications, applicability and how it resonates with the views advanced by Sternberg (2008) in his triarchic theory of multiple intelligences.

In their work on educational studies, Horsthemke, Siyakwazi, Walton and Wolhuter (2013) suggest that the revised Bloom's taxonomy is a useful goalpost to those involved in curriculum implementation on structuring learning activities that enable students to actively engage with the subject content and knowledge at various levels of complexity. Horsthemke *et al*. (2013) point out that the revised Bloom's taxonomy of teaching and assessing implies that those involved in curriculum implementation should carefully reflect on learning activities that engage students at different complex thinking levels.

Creating Knowledge (Creating): Creative Intelligence

This is where the students use their existing knowledge to create something totally new. It refers to the students' ability to construct or generate new ideas through organising known information and facts (du Tiot *et al*, 2016)

Evaluating Knowledge (Evaluating): Analytical Intelligence

Students make judgements with regard to a given scenario and learning within the learning area and justify a point of view or position. The ability of students to make well calculated and informed judgements (du Toit *et al*, 2016).

Analysing Knowledge (Analysing): Analytical Intelligence

Students are involved in differentiating between various components of the whole. It is the students' ability to break down or deconstruct information to establish and identify connections among constituent parts (du Toit *et al*, 2016).

Applying Knowledge (Applying): Practical Intelligence

The students' ability to use what they have learnt in solving new problems. It requires the students to implement or use information within a given scenario or context (du Toit *et al*,2016)

Understanding Knowledge (Understanding)

The students can establish how the subject facts and concepts are related to each other. Refers to the students' ability to interpret and construct meaning from information (du Toit *et al*, 2016).

Remembering Knowledge (Remembering)

Students are able to recall the subject knowledge they have learned. The students' ability to recall and retrieve relevant previously learned information (du Toit, *et al*, 2016)

Figure 2.2 The revised Bloom's taxonomy levels of thinking complexity. Adapted from Horsthemke, Siyakwazi, Walton and Wolhuter (2013:476) and du Toit, Louw and Jacobs (2016:134)

Figure 2.2 above presents the revised Bloom's taxonomy and explains its requirements for student activities at each level. It explains what students are involved in at each level of the taxonomy and provides guidance to those involved in curriculum implementation on the nature and types of activities which students must do at each level from lower-order thinking to higher-order thinking.

According to Horsthemke, *et al.* (2013), higher-order thinking is when the students construct and engage with knowledge through cognitive processes such as problem-solving, analysis, synthesis, comparing and contrasting, generalising and arriving at various conclusions. When students are involved in higher-order thinking, they transform information and ideas and establish the interrelationship and connectedness between various learning concepts

On the other hand, lower-order thinking refers to the teaching and learning process whereby the students are largely involved in recalling the information received from their lecturer during direct instruction and in doing simple procedural activities. As observed by Horsthemke, *et al.* (2013) central to lower-order thinking is that it emphasises rote-learning and memorisation of facts. Thus lower-order thinking is biased towards lecturer centred approaches in curriculum implementation, which is in direct contrast with the principles advanced by social constructivist and triarchic learning.

While the South African educational system recognises the importance of lower-order thinking as a foundation for higher-order thinking, it provides for the incorporation of only 30% of lower-order thinking in all summative assessments of various subjects (Department of Basic Education, 2011). The other 70% is distributed from middle order-thinking (40%) to higher-order thinking levels (30%). However, this provision on cognitive levels may vary slightly from one subject to the other and must therefore be verified with the specific subjects.

Because the Sternberg's theory of successful intelligence is pitched at a very high level of high-order thinking, it does not provide for easier thinking. Implementing the curriculum triarchically alone will therefore not be consistent with the provisions of the revised Bloom's taxonomy, especially in terms of the cognitive level requirements for summative assessments (assessment of learning) after curriculum implementation.

Sternberg's theory of successful intelligence is also not aligned with the ideas of the revised Bloom's taxonomy of teaching and learning objectives.

Anderson and Krathwohl (2001) bring into perspective some important considerations behind the revised Bloom's taxonomy which have some important implications to both Sternberg's (2008) triarchic theory of multiple intelligences and curriculum implementation as a whole. Anderson and Krathwohl (2001) argue that the revised Bloom's taxonomy seeks to address four aspects, all of which impinge curriculum implementation. According to Anderson and Krathwohl (2001) the revised Bloom's taxonomy seeks to assist those involved in curriculum implementation to identify the important parts of the curriculum which students should learn and suggest how instruction of such identified important parts of the curriculum can be organised and implemented to enable students to experience high levels of learning.

Furthermore, Horsthemke, *et al.* (2013) and Anderson and Krathwohl (2001) believe that the revised Bloom's taxonomy seeks to help lecturers to define the assessment tools and processes that will be used to provide them with feedback on the students' learning and their academic progress. Lastly, it seeks to guide those involved in curriculum implementation in ensuring that there is a perfect match and alignment between learning outcomes, curriculum implementation and assessment. On the premise of these considerations behind the revised Bloom's taxonomy, as argued by Anderson and Krathwohl (2001), it is therefore necessary to establish the compatibility of Sternberg's (2008) triarchic teaching with the revised Bloom's taxonomy (Jacobs, 2016 and Killen, 2016). Figure 2.3 below thus represents the researcher's analysis of the compatibility of multiple intelligences and revised Bloom's taxonomy.

From the figure 2.3 below, one can conclude that Sternberg's triarchical teaching implies that teaching and learning activities should actually start from level three of the revised Bloom's taxonomy, (Killen, 2016 and Jacobs 2016) which is applying and then move upwards to higher-order thinking activities (analysing, evaluating and creating). Sternberg does not provide for the first two lower order levels of the revised Bloom's taxonomy as indicated by Killen (2016) and Jacobs, (2016). These levels are remembering and understanding. Implementing the curriculum triarchically alone would mean that students who are not good at higher level teaching and learning activities will be left behind. It only caters for the academically and cognitively stronger

students. It also fails to take into consideration and test the students' prior learning and ability to make sense of their individual experiences. From a South African perspective, triarchic curriculum implementation is also not consistent with the minimum requirements for summative assessments as set out by the Department of Basic Education, (2011).

This can be cited as a significant shortfall of the triarchic theory of successful intelligence. Contrary to Stenberg (2008) who only recognises three abilities, the revised Bloom's taxonomy is an important tool in curriculum implementation which provides for all the cognitive levels of students in the learning environment. According to Jacobs (2016) and Killen (2016), the revised Bloom's taxonomy categorises cognitive objectives and demonstrates to those involved in curriculum implementation how to organise the students' thinking skills into six distinctive levels, ranging from lower-order thinking such as remembering and understanding to higher-order thinking, which includes evaluating and creating.

Unlike the three broad types of student intelligence and abilities advanced by Sternberg (2008), the six levels of the revised Bloom's taxonomy enable those involved in curriculum implementation to organise and sequence learning content and activities systematically to develop and stimulate the students' ability to think effectively (Jacobs, 2016) from simple tasks to more complex and difficult ones. Above all, this taxonomy of cognitive learning objectives assists students to develop all their cognitive abilities to the highest possible potential.

The incorporation of the revised Bloom's taxonomy in curriculum implementation ensures that students are not taught in ways that are biased towards a specific level or type of thinking and intelligence. Jacobs (2016) further adds that the revised Bloom's taxonomy does not only promotes and facilitates the students' ability to view learning material and activities from various angles, but is also stimulates their imagination, problem solving skills, creativity and decision making abilities. It is important to note that all these abilities mentioned by Jacobs (2016) which are also covered by Sternberg (2008) under the practical, analytical and creative intelligences.

For students to master high-order thinking skills and activities, they first need to start with the lower-order thinking ones, successfully engage in them and then move upwards. This idea is also present in Vygotsky's (1978, 1986) views of teaching and

learning which is relevant and meaningful to the students. Unfortunately, the Sternberg's (2008) view of student abilities does not make reference to these lower-order thinking abilities which, according to the revised Bloom's taxonomy, should be the foundation of all teaching and learning activities.

This is why social constructivist teaching is recommended as another approach to be used in conjunction with other approaches. As earlier alluded to, it is also important to remind those involved curriculum implementation that there is no an absolute approach which can be used alone to single handedly provide students with academically enabling experiences. The following discussion focuses on how social constructivist teaching can compensate for the weaknesses of Sternberg's theory of successful intelligence towards the attainment of the revised Bloom taxonomy's cognitive levels.

- **Mitigating the shortcomings of the triarchic theory of successful intelligence in curriculum implementation**

A social constructivist approach in curriculum implementation compensates for the shortcomings of Sternberg's (1983, 2001, 2008) triarchic theory of successful intelligence. This is because social constructivism emphasises what students already know through prior learning (remembering) and individualised interpretation of reality and one's experiences (understanding) and the construction of meaning from experiences (understanding). For students to be able to construct meaning from their experiences and encounters with the world, they need to first have an accurate recall of them and then have a sound understanding of those experiences and encounters.

Social constructivism emphasises that identification of prior learning is an important entry level process in the teaching and learning process (Vygotsky, 1976, 1986; Woolfolk 2004; Garrison and Archer, 2000; Lombard and Themane, 2015). This view is particularly important when introducing new subject content. When students demonstrate their prior learning, which is the knowledge they have brought from previous learning experiences, they are merely remembering. In addition, when testing the prior learning of students, the social constructivist lecturer is more likely to use the verbs recommended by Killen (2016) and Jacobs (2016) to promote the students' ability to remember what they already know about the subject material and learning activities.

THE REVISED BLOOM TAXONOMY COMPARED WITH MULTIPLE INTELLIGENCES

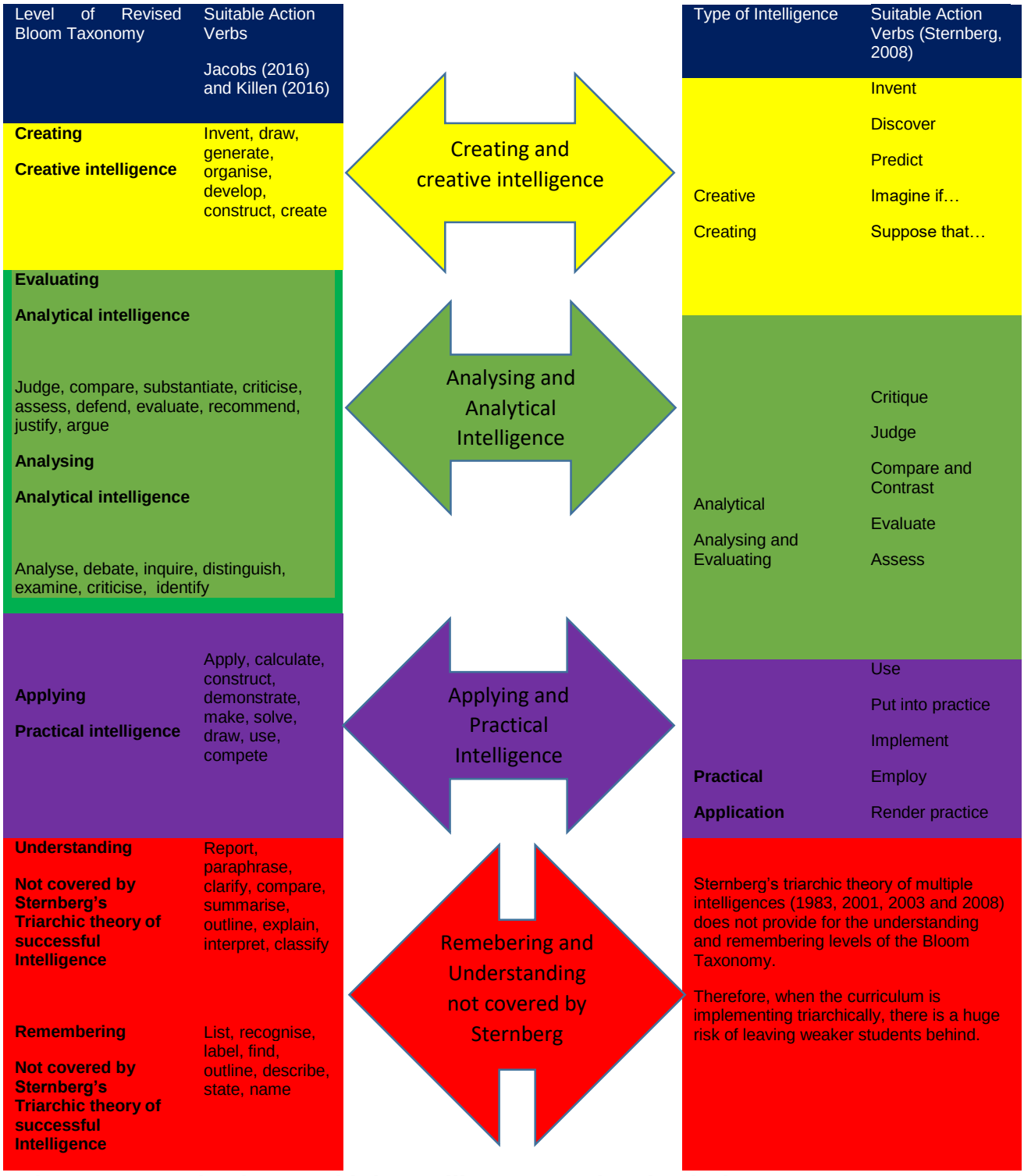

Figure 2.3 Synthesis of Multiple Intelligences and revised Bloom taxonomy

Figure 2.4 will now be presented below, followed by its interpretation and discussion.

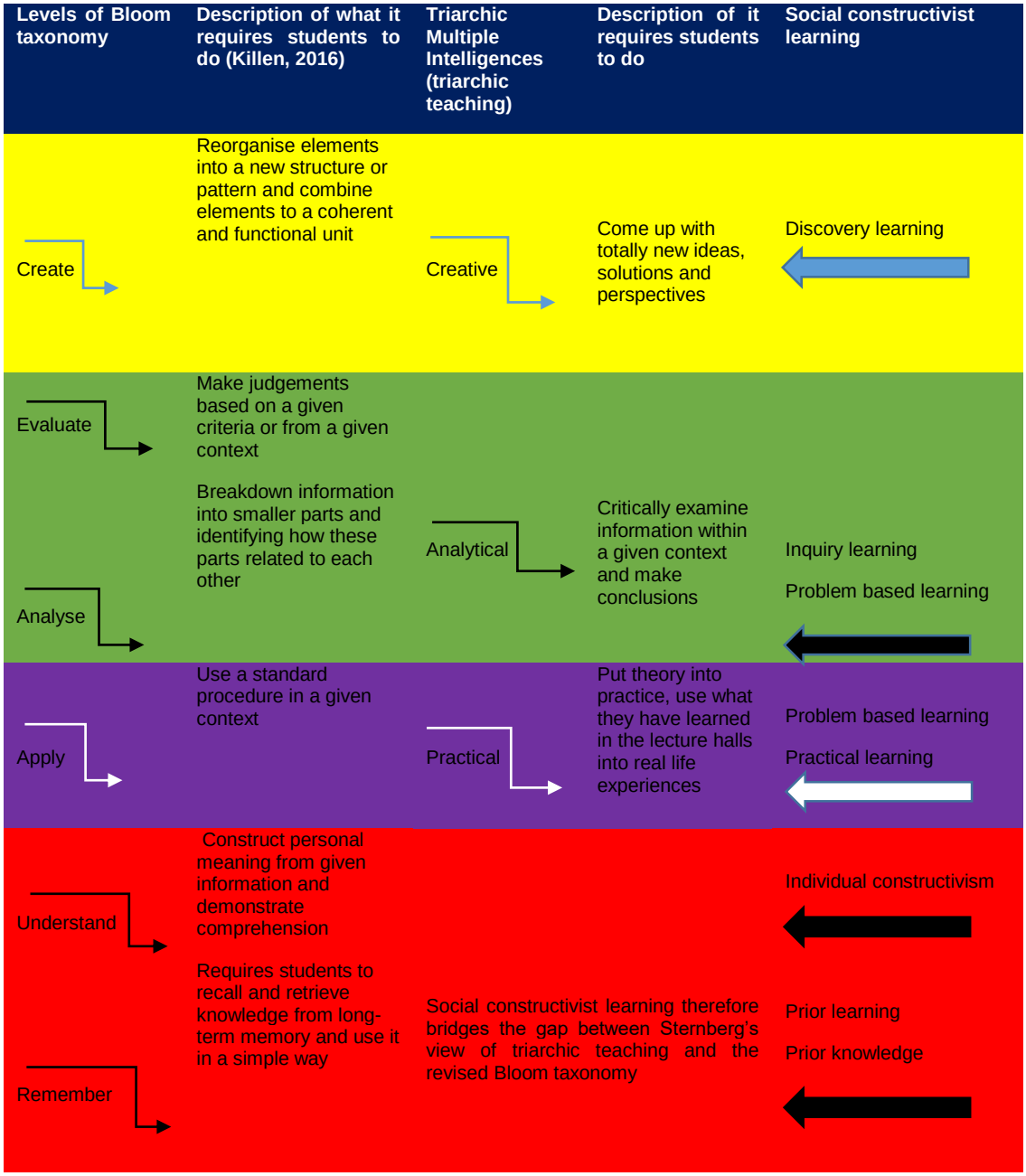

Figure 2.4: Conceptualisation of Bloom's taxonomy, triarchic teaching and social constructivist learning

Figures 2.3 and 2.4 above conceptualise how the ideas of multiple intelligences and social constructivism can be used in curriculum implementation to achieve the various cognitive abilities envisaged by the revised Bloom's taxonomy. Thus Vygotsky's (1978, 1986) and Sternberg's (2008) views of ideal curriculum implementation can be used concurrently or as alternative approaches, which complement each other to ensure that all the six levels of the revised Bloom's taxonomy are promoted and realised.

This way, students can be exposed to quality learning and an academically enabling learning environment in which goal attainment is not attached to a few abilities. It provides a broad and comprehensive view of curriculum implementation which is conscious of the learning needs and cognitive levels of the individual students in the learning environment. Lastly, it demonstrates how the curriculum can be implemented successfully and meaningfully to a highly diverse student population in tertiary institutions, ensuring that no student is left behind as a result of deficiencies in a specific type of skill or ability.

2.4.4 Social Constructivism as Compensating Teaching Approach towards the Realisation of the Revised Bloom Taxonomy's Cognitive Levels

Another important aspect of social constructivist learning which frequently comes across in literature (Mapuya, 2018; Vygotsky, 1976, 1986; Woolfolk 2004; Garrison and Archer, 2000; Lombard and Themane, 2015; Killen, 2016; Jacobs, 2016; Daniel and Bimbola, 2010; Van Wyk and Dos Reis, 2016; Evans, *et al*. 2010; Gray, 2007) is that is based on the individuals' subjective interpretation and expression of reality and one's experiences. Creswell (2013) refers to this as interpretivism. Social constructivism maintains that knowledge and understanding are collectively constructed and negotiated by the participants in the learning environment (Vygotsky, 1976; Lombard and Themane, 2015; Van Wyk and Dos Reis, 2016).

In their attempt to collectively construct knowledge and understanding, the participants in a social constructivist learning environment use their subjective individual interpretation and understanding, and then try to convince others to subscribe into those views (negotiated learning). In promoting the expression and presentation of individual views about subject matter and learning activities, the social constructivist lecturer will along the way use the key verbs suggested by Killen (2016) and Jacobs (2016). By so doing, the participants in a social constructivist learning environment demonstrate their understanding of the subject content and learning activities. In this way, social constructivism brings into the teaching and learning process the second lower-order level of understanding which neither is provided for by the triarchic teaching suggested by Sternberg.

Social constructivist teaching allows the accounting lecturer to structure students' tasks from lower-order thinking to higher order-thinking as argued by Horsthemke,

Siyakwazi, Walton and Wolhuter (2013). By default, social constructivism calls upon those involved in curriculum implementation to figure out how to structure learning activities that provide students with opportunities to work with and organise knowledge on their own (Horsthemke, *et al*. 2013).

2.5 THE EDUCATIONAL IMPLICATIONS OF STERNBERG'S TRIARCHIC THEORY OF SUCCESSFUL INTELLIGENCE ON CURRICULUM IMPLEMENTATION

Although much of the criticisms directed at the theory of multiple intelligences has emanated from the failure by its proponents to provide compelling scientific evidence on the idea of multiple human intelligence (Watkins and Canivez, 2004; Slavin, 2009; Ormrod, 2014a; Waterhouse, 2006), Sternberg's (2008) theory of successful intelligence emphasises the role of students and places student abilities at the centre of teaching and learning. Above all, it places student abilities at the centre of any debate on intelligence and intelligent behaviour (Krause *et al.*, 2010) within the context of a learning environment. Both Sternberg's triarchic theory and Gardner's theory of multiple intelligences suggest that those involved in curriculum implementation should teach and expose students to the curriculum using a wide spectrum of strategies that seek to promote the various intelligences and abilities of students (Campbell, Campbell and Dickerson, 2004; Kornhaber, Fierros and Veenema, 2004; Moran, Kornhaber and Gardener, 2006).

The Theory of Successful Intelligence (Sternberg, 1997a, 1999, 2005a, 2005b) and the idea of multiple intelligences can be used to illuminate and enhance one's understanding of the low course completions rates in some universities (Krause *et al*., 2010), why some students struggle in their teaching and learning activities and ultimately drop out of the education system (Killen, 2016; Makola, 2016). This argument as advanced by the researcher is informed by the sentiments of Sternberg (2008) who cautions that there are various reasons why a significant number of learners and students, especially the gifted ones, fail to reach and realise their full potential in life. Approaches to curriculum implementation and assessments which do not recognise and complement the learning needs of students have been cited as one of such reasons (Sternberg, 2008; Sternberg and Grigorenko, 2007).

According to Sternberg (2008), the traditional approaches used to implement the curriculum and assess these students do not enable them to learn and perform to the best of their abilities and skills. To this effect, Sternberg and Grigorenko (2007) advanced a set of teaching methods that can be used in curriculum implementation to enable the various and dynamic students in each learning environment to reach their full potential both academically and in other domains of their lives. Lecturers have to be very flexible when implementing the curriculum and should do so with approaches which are sensitive to the teaching and learning needs of individual students. They need to ensure that no student is left behind and that their abilities are equally promoted and developed.

According to Ormrod (2014) adequate pedagogical content knowledge is one of the key characteristics of effective educators. This implies that such educators have multiple strategies to teach specific topics and skills, always predict the challenges students may experience and anticipate the types of mistakes which students will make in the teaching and learning process. Therefore, effective educators acknowledge the various learning needs of their students and commit to address them using various teaching strategies.

Campbell *et al*., (2004), Gardner (2003) and Kline (2001) admit that it can be very challenging for those involved in curriculum implementation to include all the various types of intelligences or abilities in a single lesson plan. However, they are unanimous that a typical lecture hall or learning environment which promotes the students' various intelligences is the one in which the lecturer includes various presentation models in individual lessons to increase the number of students who will succeed.

Sternberg (1977, 2008) argues that traditional teaching is usually appealing to and suitable for students who are predominantly memory oriented. Sternberg (2008) proceeds to warn those involved in curriculum implementation that traditional teaching neglects and ignores those students who are gifted and stronger in other types of conceptual skills such as creative, practical, analytical and wisdom-based. Consequently, for such students, neither the teaching and learning experiences nor the evaluations or assessments they are subjected to will adequately meet their learning needs. Ormrod (2014b) indirectly supports this claim by asserting that one of the most important goals of education is to nurture the students' critical thinking abilities and all the other types of intelligences.

In his follow up investigation to the 2008 study findings, (Sternberg, 2008), Sternberg (2009) consistently maintains and emphasises that the traditional approach to curriculum implementation only focuses on a very limited number of students with specific kinds of abilities. In so doing, it disregards the majority of students in the learning environment who have the potential to succeed but whose abilities are not in harmony with those regarded as important by the lecturer and those involved in curriculum implementation.

As such, these students will be deprived of the opportunity to realise their full potential in life and will be forced to go through their studies as under achievers. It is for this reason that Sternberg (2008); Guyote and Sternberg (1981) and Sternberg and Gardner (1983) pointed out that out of the many reasons why students especially gifted ones, fail to perform to their highest possible potential is the use of ineffective approaches in curriculum implementation. This view is also endorsed by Vygotsky (1986) and Curzon (1991). In one of his studies on intelligence and academic performance, Sternberg (2009) establishes that the inability by students to perform at a level which is equivalent or equal to their full potential is usually caused by teaching and assessments whose implementation is rigid and whose concentration is narrow.

In support of this observation by Sternberg (2009), Ormrod (2014b) calls upon those involved in curriculum implementation to think critically about why students behave in particular ways, why students perform at particular levels and how the current practices in the learning environment can potentially influence the behaviour and academic achievement of students. To this effect, Ormrod (2014b) suggests that the key stakeholders in curriculum implementation need to engage in reflective teaching. By this, Ormrod (2014b) connotes that they ought to continually and constantly re-introspect, critique and examine their assumptions, inferences and how they interpret the curriculum and implement it to the students.

Of importance to Ormrod's (2014b) suggestion and how it implicates curriculum implementation is that these key stakeholders, especially lecturers, need to change and adjust their beliefs and teaching strategies on a regular basis, in light of new research evidence. This view is also endorsed by Nel, Nel and Hugo (2012) who do not only acknowledge the need for a paradigm shift in curriculum implementation, but also indicate that reviewing of strategies used in curriculum implementation is an

ongoing regular process which those involved in curriculum implementation need to practise uncompromisingly. Accordingly, this enables curriculum implementation to be in touch with the ever-changing and dynamic teaching and learning needs of students in the learning environment.

The above finding by Sternberg (2009) challenges those involved in curriculum implementation to be very flexible in their teaching and assessments of the curriculum itself. Noting the compelling nature of his research evidence on intelligence and curriculum implementation, Sternberg (2009) warns that those involved in curriculum implementation should value and acknowledge all the various abilities of students. He further cautions that teaching and learning and assessments must be designed in such a way that all students can succeed, regardless of their specific abilities and intelligences.

Informed by above research evidence, it can thus be argued with a greater sense of conviction that curriculum implementation and evaluation must always be informed by the needs of all the individual students in the learning environment. Therefore, the goal of every individual involved in curriculum implementation, especially the lecturers and other teaching staff when implementing the curriculum should always be to meet the dynamic and diverse learning needs of students. To this effect, curriculum implementation approaches need to be uncompromisingly effective, diverse and accommodating.

This study realigned the meaning and definition of ineffective approaches in curriculum implementation to include teaching approaches which are not sensitive to the learning needs of students in the learning environment. On the contrary, effective curriculum implementation refers to the use of teaching methods which offer all the students in the learning environment equal opportunities for success. As revealed in this study, this can only be realised when the learning needs of every student are adequately provided for and when assessment is designed to cater for all their various abilities and intelligences.

For those involved in curriculum implementation to be able to do this, Ormrod (2014b) maintains that they need to have sound pedagogical content knowledge. Equipped with the relevant sound pedagogical content knowledge, Ormrod (2014b) argues that these stakeholders in curriculum implementation can easily anticipate and address the

challenges likely to be experienced by students and the types of mistakes they will make in the process of mastering the subject content and the skills.

In the identical views of Krause *et al.* (2010), Sternberg (2009) and Ormord (2014b), the success of students needs to be defined in the precise sense of the terms that are meaningful to them and to the institution as well. To defend this assertion, Sternberg (2009) and Vygotsky (1986) argue that students have different goals in life and consequently, different outcomes. The argument advanced by Sternberg (2009) is also consistent with social constructivist beliefs and perceptions of the same phenomena. Social constructivists believe that the students' ability to learn and succeed varies from one student to the other because of their social, environmental factors and past experiences as well as their goals and what they perceive as important to them (Wertsch, 1997; Vygotsky, 1978; Van Wyk and Dos Reis, 2016).

Social constructivism suggests that education has no specific aims but rather, the aims of education are derived from what individual students regard as important to them (Van Wyk and Dos Reis, 2016; Gray, 2007). Ormord (2014b) also subscribes to this school of thought by stating that from a social constructivist perspective, reality is objective because it is based on the individual's experiences and the paradigm through which one views such experiences. These observations were earlier made by Sternberg (1997a, 1997b) when he claimed that while there are multiple ways of teaching and learning, there is only a single way of assessing the students' achievements. The only way referred to is teaching and assessing to both the weaknesses and strength of students.

Like social constructivists, Sternberg (2009) suggests that as a result of diversity in the learning environment, lecturers should always provide students with a wide range of examples that cover numerous types of applications. Following his research on multiple intelligences, Sternberg (2009) further suggests that lecturers must also give their students diverse and numerous options in assessments. When this suggestion is taken in its strict and precise sense, all academic assessments must incorporate all the different types of intelligence and give students some degree of freedom to choose the ones to respond to.

As an endorsement to the above claims and assertions, Ormrod (2014b) advises those involved in curriculum implementation to associate theory and abstract concepts and

principles with concrete examples. Ormrod (2014b) shares a similar view with Vygotsky (1977, 1978) that children become increasingly able to handle and think about abstract ideas as they become older and more experienced in life. Above all, both Ormrod (2014b) and Vygotsky (1978) believe that people of all ages can easily and readily understand and recall abstract concepts when they are related to practical, concrete experiences and objects.

To achieve this, Ormrod (2014b) suggests that those involved in curriculum implementation can introduce and illustrate new subject content and principles using case studies or short vignettes that describe certain student lecturer behaviours and actions within the context of the classroom. Ormrod (2014b) further proposes that lecturers should regularly ask students to view specific videos that are related to the new abstract content or ideas. When students visualise abstract and theoretical concepts and principles practically, their understanding is tremendously enhanced and this also helps them to remember such abstract and theoretical concepts when they come across them in their teaching and learning activities.

Viewed within the context of this study, this may involve taking the first year accounting student teachers on academic tours where they can visit accounting firms and actually experience what they learn in the classroom. Students can also be given expanded opportunities at the end of the lesson where they can be asked to visit their nearest retail store or outlet to see how transactions are recorded and how the accounting principles are applied in practice. Those involved in curriculum implementation can also occasionally request students to relate abstract and theoretical concepts to their own individual personal experiences.

Sternberg (2009) believes that lecturers should always strive to help their students to exploit their strengths and to deal with their weaknesses. He also maintains that students should be allowed to make mistakes and learn from them. These views of Sternberg (2009) on teaching and learning are also shared by constructivists who highlight and emphasize the importance of prior learning for successful teaching and learning and how mistakes can assist students to learn and improve academically.

Having catered for all the students' abilities and intelligences and offered them an opportunity to choose the ones they are comfortable with, there is a very small probability of students failing and being left behind in the curriculum. In direct

agreement with Sternberg (2008), Krause *et al*. (2010) allude that the idea of several abilities and intelligences remind those involved in curriculum implementation (lecturers and educators) to be aware of the students' strengths that can potentially assist them to excel in one of the several intellectual domains. In the process of doing that, Sternberg (2009) further recommends that lecturers need to arrange the work of students in ways that promote the quality of the curriculum as well as the image of the various life goals of individual students in the lecture halls.

In addition, it makes it imperative for curriculum implementers to appreciate and embrace the significance of using various and different approaches in curriculum implementation. This will enable them to accommodate the students' various abilities and strengths instead of expecting all of them to perform and learn everything in similar ways and methods. Researchers argue in a united voice that the proponents of multiple intelligences caution and warn those involved in curriculum implementation to adopt a broad stance to curriculum implementation as opposed to only concentrating on the academic domain (Pal *et al.,* 2004; Slavin, 2009; Ormord, 2014a).

For individuals to be successful in life, they require practical, creative and wisdom-based intelligence skills as much as they require memory, analytical and memory ones (Sternberg, 2008). Accordingly, Sternberg (2008) cautions that any learning community runs the risk of short-changing itself when it fails to adequately respond to the various abilities of its students in positive ways that promote growth. To ensure that the students of various abilities and cognitive levels realise their full potential, Sternberg (1997a, 1999, 2005a, 2005b) has designed a collection of strategies which can be used in curriculum implementation (Sternberg and Grigorenko, 2007). To this effect Sternberg (2009) cautions that the use of analytical, creative and practical thinking; must always be fairly balanced in all lesson presentations and assessments.

2.6 RELATIONSHIP BETWEEN THE TRIARCHIC THEORY OF SUCCESSFUL INTELLIGENCE, ACADEMIC PERFORMANCE AND CURRICULUM IMPLEMENTATION.

As earlier alluded to, Sternberg (2002) views successful intelligence according to a person's ability to succeed within the boundaries of the individual's socio-cultural context and what the person considers important in life. This perception is also supported by Van Wyk and Dos Reis (2016) who assert that a person's desire to learn

is dependent on what the individual considers to be important to them. The relationship between the theory of successful intelligence and academic performance must therefore be viewed in light of the above scholarly sentiments.

Sternberg and Clinkenbeard (1995) conducted a study to investigate whether conventional education in the classroom systematically discriminated against students with practical and creative strengths. This study by Sternberg and Clinkenbeard (1995) was necessitated and inspired by the assumption that most educational systems favoured students who have superior and high memory and analytical abilities. In this investigation, Sternberg and Clinkenbeard (1995) produced enough evidence to suggest that all the ability tests (analytical, practical and creative) were significant indicators and predictors of course performance. In their findings, Sternberg and Clinkenbeard (1995) reported that at least two of these ability intelligence measures contributed significantly to the prediction of each measure of achievement when multiple regression analysis was used.

An earlier investigation by Cronback and Snow (1977) demonstrated that students performed better at school when they were taught in ways that were consistent with how they thought. In this investigation, it was revealed that students with high practical and creative abilities were disadvantaged when they are taught or assessed in ways that were inconsistent with their abilities. The findings from this investigation are also supported by the work of Omrod (2014b), Curzon (1991) and Vygotsky (1978, 1986).

The above findings by Cronback and Snow (1977) were later corroborated by Grigorenko, Jarvin and Sternberg (2002). In a separate investigation conducted by Grigorenko, *et al.* (2002), students who assessed the curriculum through ways that acknowledged their multiple intelligences significantly performed higher than those students who were taught in traditional methods. Both findings by Cronback and Snow (1977) and Grigorenko, *et al* (2002) are in accordance with the views of Vygotsky (1978) who was gravely concerned with standardised tests and instruction. Vygotsky (1978) maintains that students fail to reach their maximum potential academically when they are taught and assessed with a one size fits all approach. This explains why the researcher in the current investigation is making some serious calls and advocating for differentiated instruction and assessments which consider the various cognitive level and abilities of students.

According to Sternberg (2002) individuals become successful through a balanced combination of adaptation to, shaping of and selection of environments. Vygotsky (1978, 1986) and Curzon (1991) also subscribe to this idea. These interactions with the environment are epitomised when the individual masters two things. Sternberg (2002) suggests that these are when the individual acknowledges and capitalises on their strengths and when the individual recognises and corrects and compensates for their weaknesses. To achieve this, Sternberg (1997) argues that a fair balance of analytical, creative and practical abilities is required.

Sternberg (2002) argues that teaching and learning promote analytical intelligence and abilities of students when they relate to relatively abstract and academic problems that the students are familiar with. When activities are related to everyday problems and require adaptation to, shaping and selection of a favourable environment, Sternberg (2002) notes that they promote the practical abilities of students. On the other hand, creative abilities are promoted when learning tasks are linked to novel kinds of tasks and situations. As noted by Sternberg (1984, 1985a), these three abilities are not fully distinct but are rather related to each other to a certain extent, depending on the learning task and the context in which it is solved.

In a study conducted by Sternberg *et al*. (1996, 1999), students who accessed the curriculum through approaches that were highly compatible with their triarchic patterns of abilities outperformed their counterparts who accessed the curriculum through ways which ignored or poorly supported their triarchic pattern of abilities. These findings were substantiated by Sternberg, Torff and Grigorenko (1998). In their study, Sternberg *et al*. (1998) revealed that students who accessed the curriculum triarchically performed far much better than those students who were taught for either memory or critical thinking. A follow-up investigation by Sternberg *et al*. (2002) proved that the academic performance of students who were taught triarchically was by far superior to that of students who were taught conventionally.

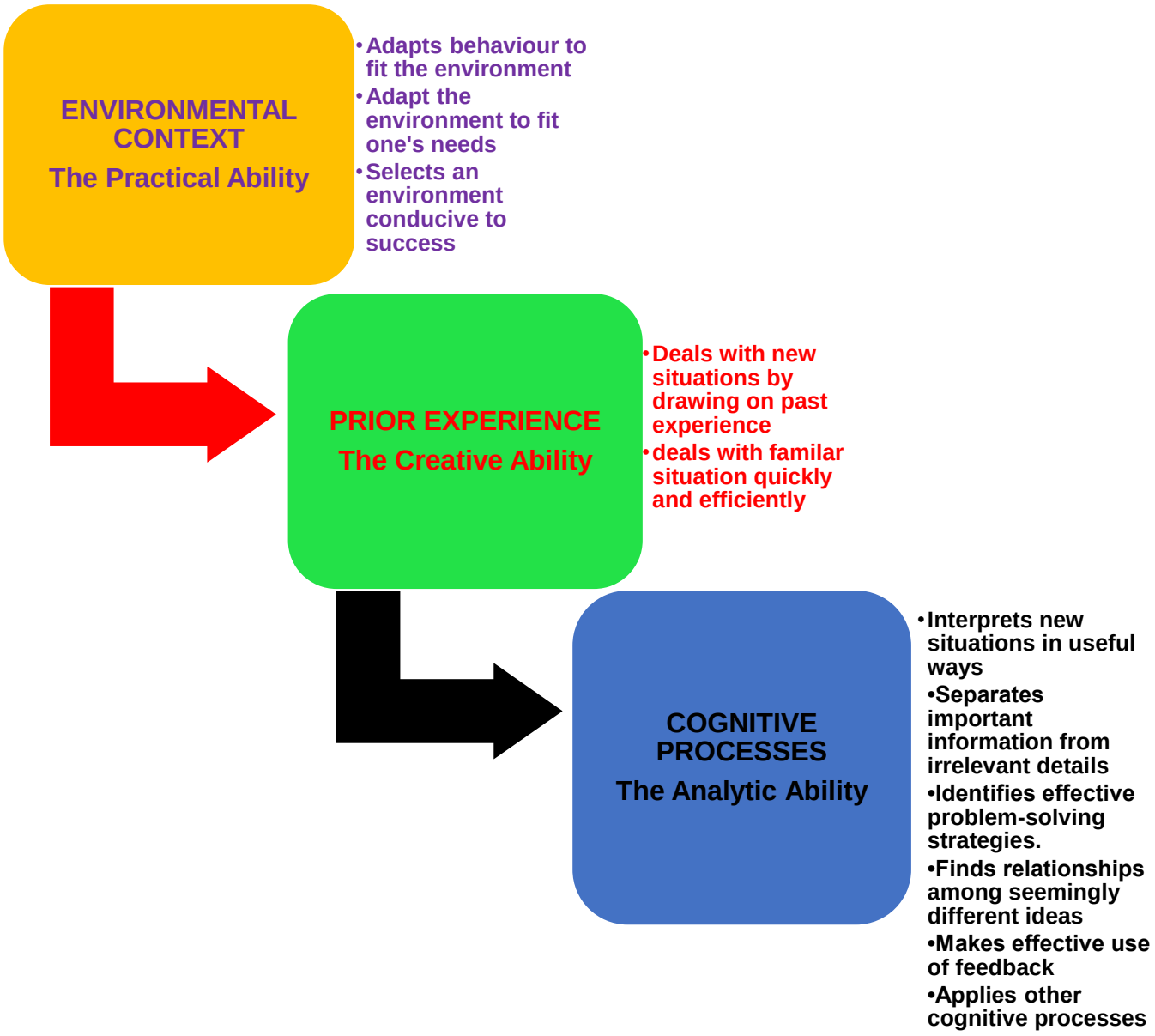

Figure 2.5 The educational implications of the triarchic theory of intelligence on curriculum implementation (Sternberg, 1997). Adapted from Ormrod (2008:152): Sternberg's Three Dimensions of Intelligence

Figure 2.5 above illustrates the various types of cognitive activities and behaviours demonstrated by students in all the three types of abilities (intelligences) advanced by Sternberg (1981). It also shows the exact types of actions which students need to take for them to be regarded as intelligent in each of the three abilities.

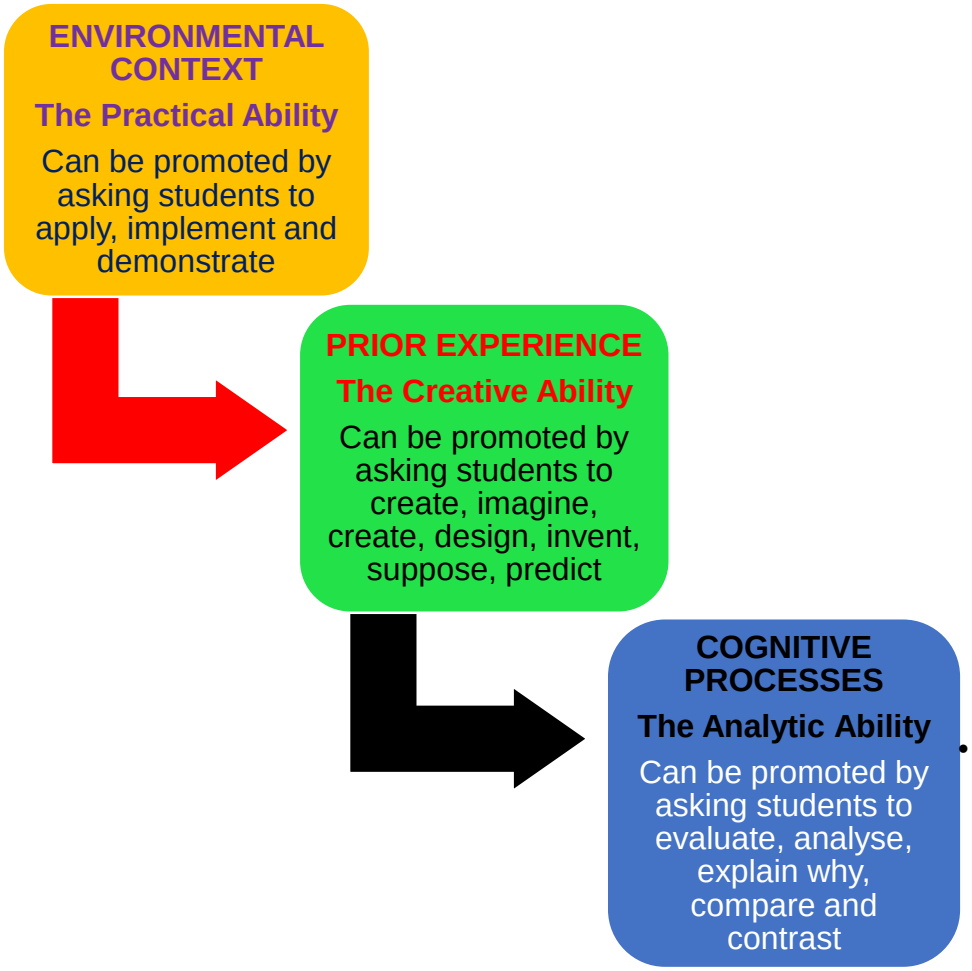

Figure 2.6 Illustration of the educational implications of the triarchic theory of intelligence on curriculum implementation (Sternberg, 1997)

Figure 2.6 above shows Sternberg's (1997) recommendation of how the triarchic theory of intelligence can be applied in curriculum implementation across various and diverse learning areas. The triarchic theory of intelligence is an antithesis of a one size fits all approach to curriculum implementation, which is a shared view with constructivism, interpretivism and relativism. It calls upon lecturers to engage students in a wide array of questions and learning activities. Thus teaching and learning activities must always be designed in accordance with the revised Bloom's taxonomy to develop the various cognitive levels of students.

Vygotsky (1978) shares Sternberg's (1985) views on the adaptive and problem solving abilities of learners as essential requirements for success in life. However, Vygotsky's (1978) views on the practical ability of children are enshrined/ embedded in the use of

psychological tools. In Vygotsky's (1978) perspective, educators need to empower learners with the relevant psychological tools and skills for them to be more effective and efficient in their adaptive and problem solving efforts as they seek to control their environment.

Vygotsky (1997) further argues that in real life, human beings sustain their existence by adapting nature to their needs. By virtue of them being unique and different, Vygotsky (1997) maintains that people adapt to their environment in different ways. This view emphasises the need for lecturers to give students a wide array of options for successful adaptation in their learning environment.

Curzon (1991) maintains that students in further education have heightened analytical abilities. It is suggested that this is as a result of previous experiences which could have compelled them to acquire the capacity to make accurate decisions under stressful conditions. When used positively, this ability can be very beneficial to the students in the teaching and learning process.

2.7 SUMMARY OF THE APPLICATION OF THE TRIARCHIC THEORY OF SUCCESSFUL INTELLIGENCE TO THE TEACHING AND LEARNING OF ACCOUNTING

From the foregoing discussion of the multiple intelligences, it can thus be concluded that Sternberg's theory of Triarchic intelligence requires lecturers and instructors to recognise and prioritise three important dimensions of human intelligence. Curriculum implementation must be analytically, practically and creatively oriented. The stakeholders involved in curriculum implementation have to implement the accounting curriculum not only in ways that make it understandable to all the individual students, but they also need to ensure that students can relate to the content and find meaning in it.

Lastly, they must adopt a zero tolerance to a one size fits all approach in curriculum implementation. Instead, they need to implement the accounting curriculum in ways that can stimulate and promote the different types of student abilities and intelligences in the lecture halls. It is therefore a professional duty of those involved in curriculum implementation to ensure that all students are exposed to the maximum possible teaching and learning experiences. All students must in one way or the other be involved in relevant and meaningful analysis, practical application of subject matter

and creation of knowledge. Ultimately, the accounting curriculum must be implemented through mechanisms that afford all the students accessing it equal opportunities for success, regardless of their abilities and intelligences.

The theory of social constructivism as pioneered by Vygotsky (1978) will now be discussed in the following section. The pedagogical ramifications of its principles will also be discussed in light of multiple intelligences and the revised Bloom taxonomy of learning objectives. Where necessary, reference will also be made to findings from previous relevant literature.

2.8 THE THEORY OF SOCIAL CONSTRUCTIVISM

The underlying assumptions of the theory of social constructivism resonate very well with the provisions set out in both the primary and secondary legislation which inform teaching and learning in primary and secondary schools and teaching practice in South Africa. It is therefore important to start by acknowledging that as enshrined in the National Curriculum Statement (Grades R- 12) and the Curriculum and Assessment Policy Statement for Accounting (Department of Basic Education, 2011), the South African education system is fundamentally grounded in social constructivism.

A synopsis of the National Curriculum Statement (Grades R- 12) and the Curriculum and Assessment Policy Statement for Accounting attests to the influence of Vygotsky's (1978, 1986) main assumptions of teaching and learning and how individuals best acquire knowledge. This claim is endorsed by the Department of Basic Education (Masondo and Fengu, 2019) when it notes that South Africa has one of the best learner-centred curricula in the world.

The educational gains of this social constructivist oriented curriculum are evidenced by an upward trend of the annual national matric results since its adoption in 2014 as indicated by the Department of Basic Education (Masondo and Fengu, 2019). However, as reported by Seleka (2019), most educational analysists and critics in South Africa question the credibility of these statistics. Nevertheless, the educational relevance of social constructivism and its implications on curriculum implementation are worth exploring.

From a higher education perspective in a South African context, the Central University of Technology, Free State (CUT) also upholds and promotes social constructivist approaches in curriculum implementation, as stated in its graduate attributes (CUT, 2012, 2014). The CUT (2012, 2014) graduate attributes point to social constructivism as the university's ethos towards curriculum implementation. Furthermore, some of these graduate attributes can be best realised through the use of social constructivist approaches in curriculum implementation and in all the other pedagogical aspects of the curriculum. Among others, these include, community engagement, innovation and problem solving, communication, team work and citizenship and global leadership

The acknowledgement of social constructivist teaching and learning goes to as early as 1954, when Dale, an American educator (1954) developed the cone of learning. A careful analysis of Dale's (1954) conceptualisation of teaching and learning experiences which are educationally effective, meaningful and long lasting reveals that the whole idea of the cone of learning was informed by the principles of social constructivism. Among others, it incorporates concepts such as active and passive learning, both of which are significant constructs in social constructivism.

While this cone of learning is not as prominent as social constructivism itself, it demonstrates the educational implications of social constructivist teaching and learning. As illustrated in Figure 2.7 below, the cone of learning emphasizes that students tend to remember 90% of what they say and do in the learning environment. Dale (1954) refers to this as active learning, which involves receiving instruction and participating in curriculum implementation. Thus according to Dale (1954), students need to be exposed to participative and active learning for them to succeed in their studies.

On the other hand, students can only remember 10% of what they read, 20% of what they hear, 30% of what they see, 50% of what they hear and see and 70% of what they say. Dale (1954) classifies all these teaching and learning activities under passive learning. This analysis means that an ideal approach to curriculum implementation is one in which the students' senses are not only actively involved in the teaching and learning process, but also the one in which the students play an active role in the process. It must be one which provides students with hands-on opportunities for practical and active learning. Of all the available alternative approaches for curriculum

implementation, social constructivist learning emerges as the most suitable one to provide students with such experiences and conform to Dale's (1954) envisaged cone of learning.

To support the long standing dominance, recognition and inclusion of social constructivist ideas in teaching and learning, reference can also be made to the seven principles of good teaching practice developed by Chickering and Gamson (1987) in the American education system. Chickering and Gamson (1987) developed some principles of good teaching practice to guide those involved in curriculum implementation. Some of these principles applicable to this study will be discussed shortly. These principles reveal such a strong influence and undeniable nature of the key assumptions which are central to Vygotsky's theory of social constructivism that one would assume that Chickering and Gamson (1987) were guided by this theory itself.

One of the most important principles which shows a strong reflection of and alignment to the ideals of constructivist teaching and learning is the one on active collaboration and interaction among participants in the teaching and learning process. According to Chickering and Gamson (1987) good teaching practice should always encourage active interactions and collaborations between students within the learning environment. They further argue that student learning is promoted and guaranteed when it is based on team effort and collaboration than when it is individualistic. In their view, good learning is both social and collaborative and not isolated and competitive (Chickering and Gamson, 1987).

Like social constructivists, they maintain that when students work together collaboratively and in groups, their involvement in the teaching and learning process itself is substantially enhanced and increased. Furthermore, Chickering and Gamson (1987) attest to the influence of the principles of social constructivist teaching when they assert that the students' thinking and understanding of the content is

strengthened when they share ideas and respond to each other's questions.

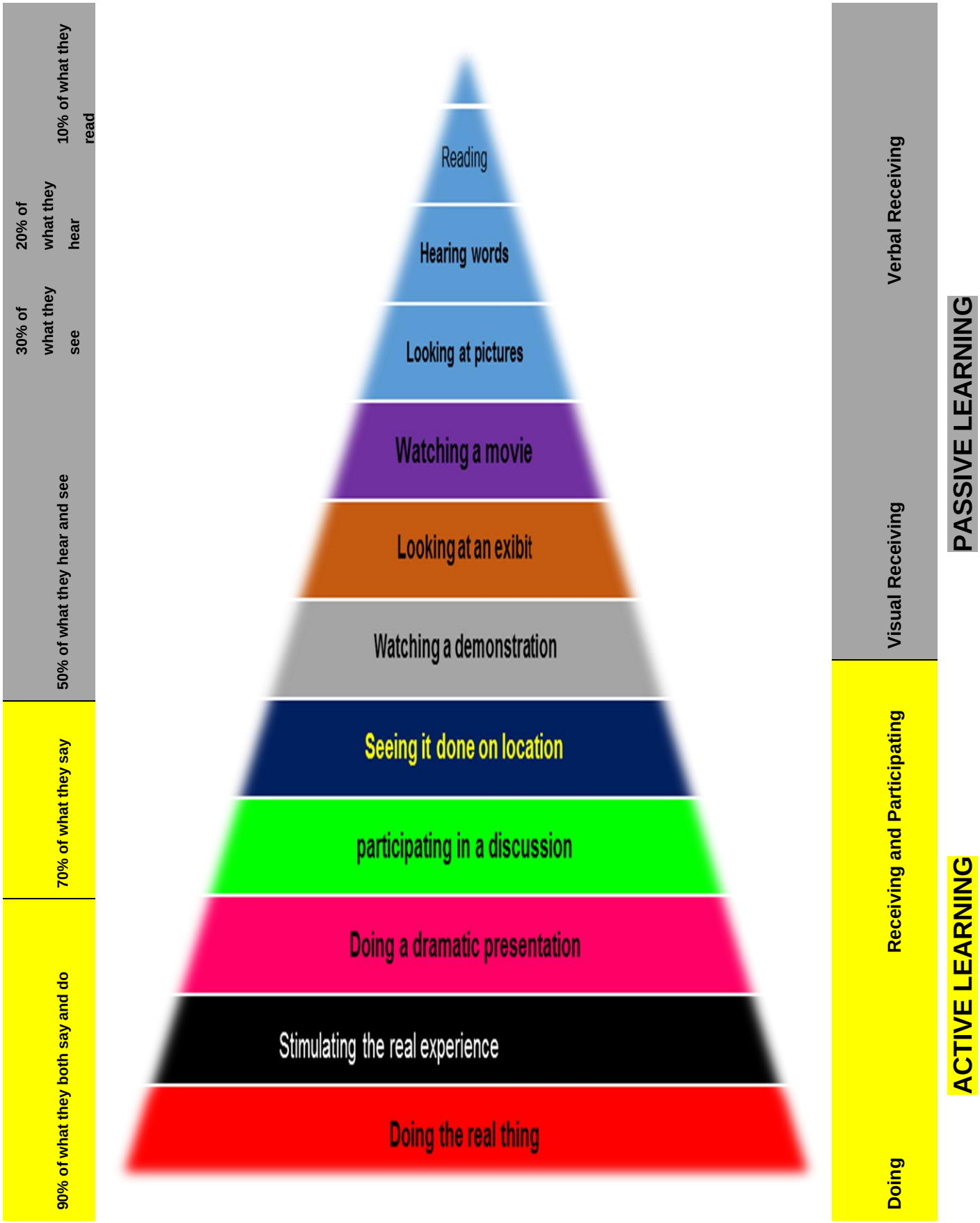

Figure 2.7: Cone of Learning: Adapted from Dale (1954)

This is one of the most important principles of social constructivist learning, as noted by Vygotsky (1979); Lombard and Themane (2015); Van Wyk and Dos Reis (2016); Brady (2012) and Tulbure (2012).

In addition, Chickering and Gamson (1987) suggest that good teaching practice (curriculum implementation) should be based on active learning methods. They argue that learning is not a passive process, a claim which was also raised by Dale (1954) in his cone of learning. Chickering and Gamson (1987) recommend that good curriculum implementation is one in which the students are not merely sitting in the lecture halls, listening to the lecturers, engaging in rote learning, memorising pre-packaged assignments and re-producing what they were taught. This view is also in direct alignment with the views of du Toit *et al.*, (2016) and Horsthemke, *et al*. (2013) on curriculum implementation. In explaining this principle, Chickering and Gamson (1987) advance that good curriculum implementation should provide students with opportunities to actively engage in discussions about the learning content, write about it reflectively, establish how it is related to their previous experiences and prior knowledge and to apply it in their everyday life situations. This explanation offered by Chickering and Gamson (1987) shows a strong attachment to social constructivist learning.

Another important principle of good teaching practice advanced by Chickering and Gamson (1987) which is in line with constructivist learning is the respect and tolerance for diversity in the learning environment. Some researchers believe that students access the curriculum at different levels and come to the learning environment with various talents, skills and competencies (Sternberg, 1981, 2008; Vygotsky, 1978; Horsthemke *et al.*, 2013). In a direct allusion to the perception of intelligence being context based a brilliant student in one aspect of the learning content or the curriculum may be very weak in other aspects in as much as practically intelligent student may not do well in learning activities that are theoretical (Chickering and Gamson, 1987; Slavin, 2008; Sternberg, 2008; Ormrod, 2014b).

To this effect, Chickering and Gamson (1987), argue that good curriculum implementation is the one which offers students equal opportunities to showcase their talents, skills and abilities and to achieve academic success, regardless of variations

in the types and levels of abilities. They further assert that those involved in curriculum implementation need to provide students with opportunities to learn in their own preferred learning styles and minimise compelling them to learn through new techniques and they struggle to cope with. In their evaluation of the educational implications of social constructivist learning and curriculum implementation, Horsthemke *et al.*, (2013) also subscribe to these sentiments. As such, Horsthemke *et al.*, (2013) advocate for differentiated instruction as opposed to a one size fits all approach to curriculum implementation.

Now that the prevalence and dominance of social constructivism principles education has been addressed, it will now be explained in detail.

2.8.1 The Meaning of Social Constructivism, its Major Assumptions and the Nature of Constructivist Learning

Social constructivism refers to the internalisation of knowledge and skills that are developed by students in their interactions with each other in the learning environment (Woolfolk, 2004). On the other hand, Garrison and Archer (2000) provide an important interpretation and analysis of social constructivism, which is consistent with the views of Vygotsky (1978, 1986). Accordingly, Garrison and Archer (2000) remark that from a social constructivist school of thought, knowledge is created by an individual student but facilitated, precipitated and influenced by the social interaction and collaboration among the people in the learning environment.

In line with Lombard and Themane's (2015) work on social constructivism, this study maintains that the basic assumption of social constructivism is that knowledge is not imposed to the students by external forces, such as the lecturer during curriculum implementation. Instead, it is internally created and generated by the students in their interactions with all the various components of the learning environment. This sentiment embodies the view that learning and learning experiences are dependent on the students' interactions with the external environment. Lombard and Themane (2015) add that this interaction can involve other students or experiences.

Van Wyk and Dos Reis (2016) share similar views with Ormrod (2014b); Vygotsky (1978 and 1986) and Brady (2012) and Tulbure (2012) on the most important aspect of curriculum implementation which is advanced by social constructivism, which are student activities. Accordingly, Lombard and Themane (2015) argue that through

performing a wide range of overt actions, students are covertly involved in analysing, evaluating and interpreting their experiences to construct knowledge and make sense from their experiences.

Ormrod (2014b) views social constructivism as a theoretical perspective which looks at the collective efforts of individuals to construct and impose meaning on the world from their experiences. Social constructivism emphasises that the social, cultural and historical contexts in which students grow up and find themselves in have some serious effects and implications on their thinking, learning and effective classroom instruction (Jensen and Frederick, 2016; Ormrod, 2014b). Social constructivists are interested in the internal aspects of the teaching and learning process.

Vygotsky (1978, 1986) proposes that individuals create knowledge from their experiences and observations rather than absorbing it. Ormrod (2014b) expands this point by adding that social constructivists believe that individuals put together what they learn into solid bodies of knowledge and beliefs that may either be accurate or correct. Perhaps, the most important aspect of social constructivism is that it focuses on how students create and acquire knowledge through their personal interactions with the environment, a process which Ormrod (2014b) refers to as individual constructivism. More important still is the fact that social constructivism emphasizes and maintains that through working together, two or more students can obtain a better understanding than an individual student can gain when working alone (Ormrod, 2014b; Vygotsky, 1978). Thus social constructivism advocates for the socialisation of the teaching and learning process and regards peer collaboration and cooperation as important variables for successful curriculum implementation.

Consequently, the educational implications of social constructivism in the teaching and learning process cannot be overlooked. The Theory of social constructivism has some important implications on classroom pedagogy and curriculum implementation, especially on the nature and type of teaching and learning activities. It provides a compelling explanation on how students acquire knowledge in the teaching and learning process. It also illuminates and amplifies humanity's understanding of the relationship between the three distinguishable variables in the learning environment. These are teaching strategies employed in implementing the curriculum, the quality of

the learning environment and students' learning experiences and knowledge acquisition.

Vygotsky (1978) sought to present educationists with a powerful tool for restructuring and redefining teaching and learning through his theoretical formulations and ultimately influence curriculum implementation. To this effect, Brady (2012) and Tulbure (2012) concur that stakeholders involved in curriculum implementation have become increasingly aware of the significance of having a sound understanding of how students learn because it influences the teaching strategies, the academic performance of students and the attainment of educational goals and objectives. It is therefore envisaged and argued by the researcher that the underlying precepts of the theory of social constructivism will contribute towards enhancing such a sound understanding of the various elements involved in curriculum implementation.

Vygotsky (1978) warns that the use of effective communication among all the stakeholders involved in teaching and learning cannot be overlooked or underestimated. While the role of effective communication on teaching and learning has not been widely and adequately researched, Vygotsky (1978) argues that it is an indispensable variable of the teaching and learning process. In his investigation of communication among children, Vygotsky (1978) designed a task that required children to engage in collaborative activities with other children who did not share their language. This was done by including foreign speaking and deaf children. The study demonstrated that effective communication was essential for students to engage in meaningful and purposeful teaching and learning activities.

One of the points on which Vygotsky (1978) and Sternberg (2002, 2008) share similar perspectives is the ability of human beings to modify their immediate environment for goal attainment. Vygotsky (1978) argues that in higher forms of human behaviour, individuals actively modify the stimulus situation as part of responding to it. This argument is consistent with Sternberg's (2002, 2008) theory of successful intelligence in which he postulates that individuals continuously seek to change their environment so that it becomes favourable and conducive for the realisation of set goals and objectives.

As an allusion to the above views, Curzon (1991) argues that the survival of individual depends on their ability to successfully adjust and adapt to changes in their

environments, which he refers to as the ability to learn. The failure to react accordingly and appropriately; and inability to learn how to adapt is not consistent with an individual's continued survival and success. The significance of the process of adaptation to one's environment lies in the fact that adaptation necessitates the individual's reception, interpretation and storage of information. Thus like Sternberg (2002) and Vygotsky (1986), Curzon (1991) suggests that individuals need to learn from their experiences to survive. Students need to learn from the experiences in the accounting lecture halls how to pass and succeed in their studies.

Similar to Sternberg (2002, 2008), Vygotsky (1978) believes that students learn or develop abilities to deal with their present situations or realities. This view is similar to Sternberg's (2008) idea of practical intelligence, which basically refers to the individual's ability to handle their current experiences and encounters. Vygotsky (1978) further propounds that before mastering their own behaviour, students always begin with mastering their own environment with the help of speech. This results in new organisation of behaviour and new relations with the environment, both of which are an important prerequisite for goal attainment, successful teaching and learning and productive work.

From a general perspective, Evans, *et al*. (2010), points out that not all issues are equally significant to an individual. This line of thought is also supported by Curzon (1991) who observes that a person's previous experiences with other individuals and in the learning environment influence the ways in which that person engages in learning. These claims are consistent with the assumptions of the general aim and function of education as envisaged by social constructivism (Vygotsky, 19780). From a social constructivist angle, Curzon (1991) argues that one of the most important factors that influence students' learning in institutions of higher learning is what they have previously learned and organised in their conceptual schemes and structures. As such, their perceptions of the learning environment are dependent on their feelings about what they consider to be of lasting value.

Accordingly, Van Wyk and Dos Reis (2016) argue that social constructivism maintains that education has no specific aims but rather, the aims of education are derived from what individual students believe is important to them. Social constructivists argue that learning is driven by the individual's' levels of curiosity and inquisitiveness and one's

perceptions about life and reality (Curzon, 1991). The perceptions are determined by the individual's values, beliefs, attitudes, needs and self-experience (Vygotsky 1978, Curzon, 1991). It is this stance of social constructivism on the aims and functions of education at which some of the criticisms against social constructivism have been directed (cf. 2.6).

According to Al-rahmi, Othman and Yusuf (2015), any strategy used to implement the curriculum has its inherent benefits and weaknesses. Therefore, the upcoming sections will focus on the educational benefits and negatives of a social constructivist approach to curriculum implementation, starting with the positives.

2.8.2 Educational Benefits of a Constructivist Approach to Curriculum Implementation.

The advocates of constructivism in curriculum implementation argue that constructivists teaching emphasizes physical output of the teaching and learning process which has been largely overlooked and underestimated by those involved in curriculum implementation over the years (Lombard and Themane, 2015; Daniel and Bimbola, 2010; Van Wyk and Dos Reis, 2016 and Evans, *et al*., 2010). A constructivism curriculum emphasises student-centred methods in curriculum implementation Wertsch, 1997; Gray, 2007; the Bright Hub Education, 2012).

A considerable number of studies on student-centred strategies have thus far demonstrated that social constructivist teaching has a host of benefits to offer to the students. Looking at the educational benefits of social constructivism in curriculum implementation, Lombard and Themane (2015) argue that the learning experiences of students and their academic performance are influenced by the students' interactions with the authentic learning environment.

In the view of the Bright Hub Education (2012) students may benefit significantly from curriculum implementation when some principles of social constructivism are incorporated into the lecture hall setting. An investigation by Mapuya (2018) revealed some of the most important benefits which accounting students enjoy when they access the curriculum in social constructivist learning environments. These benefits are improved interpersonal relationships, better communication, improved confidence and self-esteem, improved participation and engagement in the teaching and learning process and ultimately, improved understanding and academic performance.

However, this was not the only one or the first to deliver such a diagnosis. There are also studies that have also delivered similar verdicts (Jensen and Frederick, 2016; Daniel and Bimbola, 2010; Akpan and Onweh, 2014; Vygotsky 1978, 1986; Roscoe and Chi, 2007; Hatano and Inagaki, 2003); Gray, 2007; Stavredes, 2011; Brickner and Etter, 2008; Ganyaupfu, 2013; Feitosa, Santos, Filho, Bezerra and Pederneiras 2013).

Constructivists argue that students are independent and have the ability to think, argue and reason critically. According to Van Wyk and Dos Reis (2016), this notion is in direct contrast to the lecturer-centred approach to curriculum implementation in which a student is regarded as empty vessels and is only expected to sit quietly during lecturers, take notes and do evaluations to the satisfaction of those involved in curriculum implementation. Ormrod (2014b) also emphasises the important aspect of the students' active involvement in the teaching and learning process as an inherent benefit of social constructivist approaches in curriculum implementation.

Mapuya (2018) agrees with Van Wyk and Dos Reis (2016) that while some of the approaches to curriculum implementation are still lecturer-centred, most of the individuals involved in curriculum implementation have come to understand that students need to be fully involved in the teaching and learning process, utilising all their senses rather than just listening and observing. This acknowledgement alone by those involved in curriculum implementation is a significant step towards the realisation of student-centred approaches in teaching and learning. This is because as argued by Van Wyk and Dos Reis (2016), students are not merely passive participants in the implementation of the curriculum, instead, they must be actively involved in the teaching and learning process and the bigger picture within which their world is formed and embedded.

In support of constructivist approaches in curriculum implementation, Killen, (2016), the Bright Hub Education (2012) and Van Wyk and Dos Reis (2016) remark that constructivist teaching has been used in various educational settings for a considerable amount of time and has yielded positive results. In the work of Van Wyk and Dos Reis (2016), it is enunciated that the use of constructivist approaches in curriculum implementation is very effective for students with special needs such as sensory processing disorders.

In Van Wyk and Dos Reis' (2016) perspective, some of these students have arguably brilliant minds but cannot simply be reached through the traditional approaches to curriculum implementation. As an endorsement to Van Wyk and Dos Reis' (2016) sentiments, the Bright Hub Education (2012) notes that as opposed to simply transmitting knowledge from themselves to the students, the lecturers are more of a guide in the teaching and learning process whose success depends on the active involvement of students in every lesson they conduct. This assertion acknowledges Vygotsky's (1978, 1986) notion of guided instruction and scaffolding and the Higher Education Qualifications Framework's (2010) view of those involved in curriculum implementation as learning mediators.

Mays, Grosser and de Jager (2014), assert that research findings on social constructivist approach to curriculum implementation have demonstrated that active participation and student interactions with their lecturers and classmates have the advantage of enabling students to build their own understanding of concepts, remember such concepts better and use them in real life. Mays *et al*. (2014) further advocate for the use of social constructivist approaches in curriculum implementation by pointing out that social constructivism emphasizes small group teaching and learning, which enables students to talk for longer periods of time than in other approaches that can be used to implement the curriculum. It also encourages students to work together in achieving learning objectives by upholding the norms of the groups and sharing similar educational goals (Brickner and Etter 2008).

When examined in the context of this study, this advantage points to better and more meaningful interactions that can enhance and improve the learning experiences of students. The first year accounting student teachers will be afforded more time to argue, debate, elaborate and understand complicated concepts and ideas that cannot be easily understood within a short period of time. In addition, the students have the benefit of repeating the learning content and concepts to each other until they are all on the same page.

Additionally, Ganyaupfu (2013) and Mokoena and Materechera (2015) also support the use of social constructivist approaches in curriculum implementation by appreciating that social constructivism provides a less intimidating and threatening learning environment for the students. To this end, Mays *et al.* (2014) allude that this

automatically encourages and motivates even the less confident students to open up, participate and contribute their ideas to the learning process. Thus, the increased participation from all students creates even more superior opportunities for meaningful discussions that can ultimately enrich the learning of accounting (Feitosa, Santos, Filho, Bezerra, and Pederneiras, 2013). Students are bound to experience meaningful and lasting memories of the accounting lessons.

Another advantage of the use of social constructivist strategies in implementing the curriculum is that it allows those involved in curriculum implementation to individualise classroom instruction much more effectively than when using other strategies to implement the curriculum. Van Wyk and Dos Reis (2016) agree with the earlier remarks of Daniel and Bimbola (2010) and Akpan and Onweh (2014) on the benefits of individualised instruction.

In their investigation on instructional skills for structuring appropriate learning experiences for students, Akpan and Onweh (2014) establish that when lecturers implement the curriculum using social constructivist approaches, they are able to work closely on the learning difficulties of weaker students when they group them instead of holding up stronger students. However, this remark by Akpan and Onweh (2014) is not consistent with the provisions of the National Curriculum Statement (Grades R-12), the Curriculum and Assessment Policy Statement for Accounting and the theoretical assumptions of social constructivism.

Furthermore, it is contrary to the ideological foundations of inclusive education as described by Ramratham, le Grange and Higgs (2017). The guiding documents of the South African system in the form of the National Curriculum Statement (Grades R- 12) and the Curriculum and Assessment Policy Statement for Accounting together with the assumptions of social constructivism (Vygotsky 1978, 1986) and inclusive education (Ramratham *et al.,* 2017) do not suggest that weaker and slower students must be isolated from their stronger and faster counterparts when implementing the curriculum. They are all unanimous that should group learning be considered, each group must comprise of students of different learning abilities and cognitive levels. Akpan and Onweh's (2014) observation is therefore perceived to be indirect contravention of social constructivist learning and inclusive education.

Mays *et al*., (2014) agree with Ormrod (2014b) that if well-structured and implemented, social constructivist approaches in curriculum implementation can provide lecturers with the opportunity to empower students to be lecturers as well. This line of thought is also supported by Roscoe and Chi (2007) and Hatano and Inagaki (2003) who allude that when using social constructivist approaches to implement the curriculum such as group learning as suggested by Mokoena and Materechera (2015), stronger students can be asked to facilitate learning in their respective groups and even clarify concepts that the lecturer has not yet clarified. This benefit of peer tutors has been consistently identified and raised in numerous studies and by various scholars. It has also been found to have positive effects on the academic performance of students (Daniel and Bimbola, 2010; Akpan and Onweh 2014; Gray 2007; Taole 2015; Ramratham *et al.,* 2017)

In addition, recent conceptualisations of social constructivist approaches in curriculum implementation have revealed that social constructivist learning creates and foster a culture that not only resembles but encourages students to listen to others, share ideas and model other students' ways of thinking and doing things (Mays *et al.*, 2014). This benefit is also embedded in the assumptions of social constructivism (Vygotsky 1978, 1986) and is also promoted by the National Curriculum Statement (Grades R- 12) and the Curriculum and Assessment Policy Statement for Accounting.

As such, students who are exposed to social constructivist learning learn to cooperate and embrace different mentalities as they try to solve problems and accomplish a learning task. Thus social constructivist learning does not only create suitable and diverse learning experiences, but it also fosters diversity of views on learning activities and tolerance. In addition, it effectively helps students to be more motivated towards success with a shared passion. As observed by Mokoena and Materechera (2015) and Mapuya (2018), social constructivist learning further develops the students' interpersonal skills that are pronounced in the National Curriculum Statement (Grades R- 12), the Curriculum and Assessment Policy Statement for Accounting and the graduate attributes for Central University of Technology, Free State. These views are elaborated by Mays *et al.,* (2014) who suggest that by its nature and application, social constructivist learning enables students to learn and develop skills that are required for success in life.

Students who are exposed to social constructivist learning approaches such as group learning and cooperative learning frequently and over long periods of time tend to develop strong interpersonal skills than their counterparts who access the curriculum through other approaches. Mokoena and Materechera (2015) observe that such students learn how to communicate better and more effectively with their peers and develop goals based on common and mutual agreement. These interpersonal and communication skills are essential for the students' success in their daily lives, their studies and in the future work environment.

May *et al*., (2014) proceed to point out that students develop very powerful collaborative working skills. Being able to cooperate and collaborate with others is essential in balancing competition and individualism which is prevalent both at university and in the workplace (Van Wyk and Dos Reis 2016). Another educational benefit of implementing the curriculum from a social constructivist perspective is that students develop skills that are vital for critical thinking and problem solving which are of great importance in a constantly changing world (Taole 2015). To this effect, social constructivist learning can be regarded as a driver for some of the objectives and principles which the National Curriculum Statement (Grades R- 12) and the Curriculum and Assessment Policy Statement for Accounting seek to achieve.

From all the foregoing discussions on the educational positives of social constructivist approaches in curriculum implementation, it can be concluded that social constructivist learning can be considered to compensate for the weaknesses and failures of other alternative approaches in curriculum implementation. However, despite of all the positives of constructivist approaches to curriculum implementation as presented above, there is certainly no shortage of disagreement and criticisms on the educational gains of a constructivist approach in teaching and learning. Therefore, the following section will look at the educational negatives of a constructivist approach to curriculum implementation which give critics ground to contest its suggested educational benefits.

2.8.3 Educational Negatives and Challenges of a Constructivist Approach to Curriculum Implementation

In Stavredes' (2011) and Van Wyk and Dos Reis' (2016) perspective, while constructivism has a place in curriculum implementation it has some flaws as an absolute learning system. Other researchers who have raised some concerns about

the challenges associated with a social constructivist approach in curriculum implementation include Zhang, Olfma and Firpo (2010); Wang, Teo and Woo (2009); Brown (2012) and Gulati (2008). One of the major criticisms of social constructivism which one frequently comes across in literature is that it is more appealing in theory but lacks practicality.

As observed by Peach-Squibb (2014) and Wang *et al.* (2009) it is very challenging for those involved in curriculum implementation to create a learning environment that promotes social constructivist learning, let alone implementing the curriculum social constructively. Baylor and Kitsantas (2005) attribute this problem to the challenges and difficulties in translating the social constructivist theory into meaningful and viable instructional strategies and pedagogical practice, especially for novice educators. Hirumi (2002) further adds that creating a student-centred constructivist learning environment within the set-up of a lecture hall can be very time consuming. These scholarly sentiments provide some significant insight into the ideal challenges and negatives of implementing the curriculum social constructively.

Those who are against implementing the curriculum from a social constructivist perspective also argue that it demands a lot of planning and administrative time regarding the learning activities and group learning logistics. In corroborating the above views, Mays *et al.* (2014) observe that a lot of time is wasted when making arrangements for social constructivist learning, such as grouping the students and giving them instructions on how to engage in the learning task. This explains why some individuals involved in curriculum implementation are reluctant to use social constructivist approaches.

Sometimes furniture has to be re-arranged to make the seating arrangement to be compatible with the learning activities. Furthermore, Mokoena and Materechera (2015) point out that social constructivist learning approaches such as group learning require more time for students. They argue that students need to know and understand each other very well before they can meaningfully and successfully engage in a learning task. This was also confirmed by a study by Mapuya (2018) in which students complained that they required more time to get used to each other during the initial stages of group learning.

Premised on the above challenge, it can also be concluded that the use of social constructivist approaches to implement the curriculum can potentially make it difficult for those involved in curriculum implementation to complete the formal prescribed curriculum as outlined in the study guides. This explains why social constructivism cannot be used as an absolute approach to implement the curriculum for the whole year. It is thus imperative for lecturers to blended social constructivist learning approaches with other strategies when implementing the curriculum.

Following their study on strategies for promoting active learning in principles of accounting course Brickner and Etter (2008) cautioned that some students found it difficult to share their learning materials in the lecture hall. They also observed that students struggled to participate in some forms of social constructivist learning such as group learning mainly because of their shyness or uncooperativeness and unwillingness to listen and inability to communicate effectively. Jensen and Frederick (2016) are concerned that some social constructivist approaches used in curriculum implementation may sometimes lead to low academic achievement if the task it too simple and there is no opportunity for students to construct and reflect deeper meaning. This is one of the shortfalls which lecturers should always be vigilant and on the look out to prevent.

A study by Gulati (2008) on constructivist learning environments reveals that applying constructivist knowledge in face to face learning environments does not give students the opportunity to put to test their knowledge of various situations that have real life applications. This finding was later confirmed by Bahaddin, Anilan and Anagun (2010) in a separate investigation on the problems encountered by those involved in curriculum implementation in designing and fostering social constructivist learning.

In this investigation, Bahaddin *et al.* (2010) criticised classroom learning environments for not being real life oriented. Bahaddin *et al.* (2010) further concluded that classroom learning environments are not able to adequately provide students with autonomy in the teaching and learning process. Thus while a social constructivist approach to curriculum implementation emphasizes real life and practical learning experiences, most learning environments lack that real life and practical element. This becomes a challenge to the contemporary social constructivist lecturer, who then has to rely on their creative skills to make the learning experiences more real and practical.

In a South African context, this can possibly justify the most recent sentiments of the Department of Basic Education (Masondo and Fengu, 2019) when it admitted that the current social constructivist based curriculum is not being implemented effectively and properly. Accordingly, the Department of Basic Education establishes a serious need to train and socialise educators to teach the social constructivist oriented curriculum to the learners (Masondo and Fengu, 2019).

As such, one of the biggest shortfalls of constructivism which has been consistently raised is its lack of structure (Stavredes, 2011; Van Wyk and Dos Reis, 2016; Gray, 2007; Brown, 2012; Gulati, 2008) which compromises the teaching and learning process. On the contrary, the majority of students require more structure and evaluation to succeed. This supports the view that social constructivist learning is sometimes difficult for those involved in curriculum to enhance and maintain order in the learning environment (Stavredes, 2011; Van Wyk and Dos Reis, 2016). This concern is also sustained by the work of Peach-Squibb (2014) who alludes that most students require highly structured learning environments for them to be able to function effectively. Unfortunately, social constructivist approaches do not provide for such highly structured learning environments.

As an expansion of the findings by Peach-Squibb (2014) and Wang *et al.* (2009) point out that the key prerequisites for successful curriculum implementation from a social constructivist perspective include the students' ability to explore, construct, experiment, reflect and converse. In addition, Wang *et al*. (2009) maintain that these pre-requisites are very challenging to promote in a traditional classroom environment. This perceived challenge also implies associated difficulties when implementing the curriculum triarchically, within the confines of the theory of multiple intelligences.

Evidence in support of this position can be found in the work of the Bright Hub Education (2012) in which it is established that constructivism can actually result in students being confused and unsatisfied. The reason cited by Ireland (2007) for this subsequent confusion and unsatisfaction is that students may not have the ability to successfully conceptualise and form associations between prior knowledge and new knowledge, which is the learning content they are currently dealing with and learning.

Some critics of social constructivist learning also argue that it requires lecturers to have special skills for its successful use in implementing the curriculum. Wang *et al*

(2009) and Brown (2012) indicate social constructivist learning also requires students to have specific characteristics such as team work, interpersonal skills and excellent communication skills. Students who are found wanting in such or some of these skills and characteristics will find social constructivist learning very challenging. As a result, they are likely to lose interest in teaching and learning activities and fall behind. Those involved in curriculum implementation must therefore be very mindful of such students and make sure that they are not left behind.

Despite these criticisms, the popularity and educational gains of social constructivism in curriculum implementation remain significantly undiminished. Responding to the negatives of social constructivism in curriculum implementation, Gray's (2007) cautions that to ensure that students reap the maximum benefits of social constructivism, there is a need to consider its weaknesses in curriculum implementation. It is therefore important for those involved in curriculum implementation to be very mindful of these negatives and to adopt the necessary measures to mitigate them. However, noting the compelling nature of empirical evidence in support of social constructivist learning from the amplitude of studies reviewed by the researcher, its superiority over other possible alternatives in implementing the curriculum still remains high. These findings therefore provide a sound basis for one to advocate for social constructivist approaches in curriculum implementation.

To defend social constructivism in teaching and learning, it is thus imperative to examine its implications on curriculum implementation over and above all the explored educational benefits that are associated with it. Therefore, the following section of this thesis provides an account of how Vygotsky's (1978, 1986) theory of social constructivism implicates curriculum implementation, both in theory and in practice.

2.8.4 The Educational Implications of Vygotsky's Theory of Social Constructivism on Curriculum Implementation and Education

As a point of departure, Lombard and Themane (2015) caution the stakeholders involved in curriculum implementation to always remember and acknowledge that students do not come to the learning environment with an unblemished view of the learning content and subject material. Meier (1995) is cited by Horsthemke, *et al*.

(2013) to also have subscribed to this view by noting that understanding starts with what students already have in their minds.

Horsthemke, *et al.* (2013) cite Meier (1995) to have argued that the essence of pedagogy therefore is to put the inside out, work on it together while it is still out and then put it back into the students' minds. It is thus important to start from what students already know and then navigate to new learning tasks and activities. Constructivist learning calls upon the lecturers to actively engage students to work with knowledge. To this end, Horsthemke, *et al.* (2013) suggest that it is imperative for lecturers to make use of substantive conversation as opposed to just giving students information and talking at them.

In support of substantive conversation as a key element in constructivist learning to promote student participation, Horsthemke, *et al.* (2013) note that to promote a shared understanding of the learning content, substantive conversation enhances substantial interaction among the students and between the lecturer and all the students in the learning environment about subject content. To achieve this, Horsthemke, *et al.* (2013) suggest that those involved in curriculum implementation may opt to create group work learning opportunities for the students in which students explain concepts to each other and engage in subject specific discussions.

In line with the above, after developing their seven principles of good teaching practice, Chickering and Gamson (1987) recommend that those involved in curriculum implementation should nurture and promote the intellectual curiosity of students, encourage them to ask questions as well as to respond to questions raised by other students.

From Taole and Van Wyk's (2015) perspective, lecturers need to acknowledge what each student brings to the learning environment. Social constructivism requires lecturers to recognise and emphasise the social and practical aspects of curriculum implementation and incorporate them into the learning environment. When learning material and activities are not practically and socially relevant, social constructivists would argue that learning becomes an abstract and meaningless process, which students can not relate to.

In her work on social constructivist approaches to curriculum implementation, Taole (2015) subscribes to above views and add that lecturers are faced with students who

have various and diverse learning needs. As such, Taole (2015) shares in the views of Killen (2016); Ormrod (2014b) and Van Wyk and Dos Reis (2016) that the approaches used to implement the curriculum ought to accommodate all the students in the learning environment, regardless of their social, cognitive, cultural, language and economic backgrounds. Taole (2015) admits that this can be a very challenging task because every teaching and learning context is unique and plays out differently in other situations.

In suggesting how the curriculum should be implemented from a social constructivist school of thought, Ormrod (2014a) reiterate the earlier recommendations of Vygotsky (1978) and Shapiro (2004) that lecturers and educators should consider the use of discovery learning methods in their lecturer halls and classrooms. In their analysis of discovery learning, Bostrom (2012) and Fayombo (2015) portray it as an approach to curriculum implementation in which students produce and derive new concepts, principles, understanding and about a topic for themselves through their first hand interactions and experiences with the environment. This view is one of the basic tenets of social constructivism in curriculum implementation (Vygotsky, 1986).

Another constructivist approach suggested by Vygotsky (1978) and later supported by Bosman (2015), Fayombo (2014) and Ormord (2014b) in curriculum implementation is inquiry learning. On this matter, Ormrod (2014b) in particular subscribes to the earlier views of Lorch *et al.* (2008) by viewing inquiry learning as an approach to curriculum implementation in which students seek new information and understanding through well-calculated and deliberate application of complex cognitive processes such as critical thinking and scientific reasoning. This version of inquiry learning is in accordance with Sternberg's (1997, 2005a, 2008) interpretation of analytical intelligence as enshrined in his theory of the Triarchic theory of successful Intelligence.

Of central concern therefore to the above sentiments by Lorch *et al.* (2008), Fayombo (2014) and Ormrod (2014b) is that all their views place students at the centre of the teaching and learning process. This is one of the fundamental pillars of constructivism in curriculum implementation as propagated by Vygotsky (1978) and later corroborated by Stavredes (2011) and Van Wyk and Dos Reis (2016). It is therefore important for the stakeholders involved in curriculum implementation to always ensure

that students are at the heart of all teaching and learning activities. Any approach which is contrary to these suggestions will thus be in conflict with social constructivism.

In their justification of constructivism in curriculum implementation, Lorch, Calderhead, Dunlap, Hodell, Freer and Lorch (2008) argue that constructivism places students at the centre of the teaching and learning process. Above all, they maintain that with social constructivism, learning depends on the students' prior learning and beliefs. This empowers and allows them to be in control of their own learning. Shapiro (2004) agrees with Lorch *et al.* (2008) by adding that what students already know provides a foundation and knowledge base on which new meaningful learning can be founded. An investigation by Cromley and Azevedo (2007) also produced evidence in support of the sentiments above. In their scholarly work, Cromley and Azevedo (2007), observe that students who already know something regarding a topic tend to learn more information about that specific topic more easily and effectively as opposed to their counterparts who have less necessary background.

This prompted Fox (2009) and Carr (2010) to suggest that ideally, those involved in curriculum implementation must always use the students' prior knowledge as a point of departure when introducing a new topic. Ormrod (2014b) refers to this strategy as prior knowledge activation and argues that curriculum implementers should always encourage more meaningful learning by clearly demonstrating to and showing students new content relates to what they already know.

Carr (2008) and Fox (2009) confirm the earlier sentiments of Vygotsky (1978) on implementing the curriculum in ways that enable the students to relate to the subject content. According to Vygotsky (1978), studies on how children think when they are required to transpose a previously learned relation with a set of stimuli to an identical set have revealed that their transfer is mere remembering with respect to isolated instances. Children's general representations of reality and the world are based on their recall of concrete instances. This stresses the importance of using teaching and learning activities which students can easily relate to when implementing the curriculum.

As argued by Carr (2010), the more interrelationships and connectedness students can identify and locate within the subject matter they are dealing with, the more they can organise it and the more easily they can recall it. Sternberg (2008) would suggest

that the accounting lecturer needs to start with the most basic type of intelligence, which is practical intelligence and then build from there. Sadly, enough, Ormrod (2014a) admits that in most cases, students are exposed to the learning of isolated facts with very little, if any, understanding of how these facts are connected.

In response to the findings by Cromley and Azevedo (2007) and Ormrod's (2014b) suggestion, Fox, (2009), Ku, Chan, Wu, and Chen (2008) and Posner and Rothbart (2007) developed some guidelines on how stakeholders involved in curriculum implementation can help students to relate new ideas to their prior knowledge and experiences. As such, they suggest that this can be achieved by showing students how concepts and ideas in the same learning area or subject are related. For instance, in the context of accounting, the lecturer can show students how the principle of double entry is related to the general ledger or how the various current assets of a business are related to each other in terms of liquidity. Considered within the confines of Sternberg's theory of multiple intelligences, (Sternberg 1977, 2001, 2003) this is compatible with analytical intelligence.

Fox, (2009) goes on to suggest that making students to relate prior knowledge to the new content can be achieved through revealing to students how the concepts and ideas in different learning areas or subject relate to each other. For example, in the realms of this study, the accounting lecturer can demonstrate to students how the various pieces of legislation in business studies influence employee deductions and the company's operating expenses in accounting, or how inflation and unemployment in economics can lead to bad debts and liquidation in accounting.

In a different dimension, Ku, Chan, Wu, and Chen (2008) agree with Carr (2010) proposal that those involved in curriculum implementation can demonstrate to students how their general knowledge of the world is connected to the subject content or the concepts being learned. Drawing from this suggestion, the accounting lecturer can relate the concept of ethics and professionalism to anti-corruption campaigns in the country. Alternatively, they can relate the concept of depreciation in accounting to how valuables such as cell phones and television sets lose value over time, or how their interest in a new pair of shoes or jeans declines with time from the first date of purchasing and owning that item. All these scenarios can help the students to relate new ideas to their prior knowledge and experiences.

More still, Posner and Rothbart (2007) and Fox (2009) suggest that to help students relate new content to their prior knowledge and experiences, lecturers can try to make the students see and understand how the new content or ideas are related to their own personal experiences. Viewed in the context of this study, the accounting lecturer can ask students who have ever tried to sell second hand items such as cell phones at unreasonably higher prices and explain how they struggled to sell those items. This will be used to explain the concept of depreciation. They can also be asked to explain how they see differences on the prices of brand new vehicles and pre-owned ones for them to have a better understanding of the concept of depreciation and why it is an expense.

Implementing the curriculum from a social constructivist also implies that the curriculum implementers need to acknowledge and accommodate the diversity of students' background knowledge (Ormrod 2014b; Fox, 2009). Sternberg (1981, 2001) refers to this as practical intelligence. Van Wyk and Dos Reis (2016), Evans, *et al* (2010) and Gray (2007) concur with Vygotsky (1978) that while students come to school with certain shared perceptions, views and understanding about reality and the world, most of their personal experiences in the world and with reality are totally different from each other and should therefore be viewed separately in curriculum implementation. To support this claim, Ormrod (2014b) concludes that in many ways, the students' understandings and prior knowledge are truly and purely their own and thus individual. Fox (2009) attributes this differentiation to the fact that every student in the lecture hall has been exposed to a unique set of experiences, inter-personal relationships, beliefs and cultural practices.

To this effect, Ormrod (2014b) concludes that, therefore, students coming from diverse backgrounds, and with diverse experiences with reality and the world come to school with totally different knowledge which they can use to make sense of new knowledge. Curzon (1991) communicates a similar message with the remark that students in higher education bring to the teaching and learning process a host of learning abilities, knowledge and previously learned skills. Most importantly, they also come with a variety of handicaps, all of which cannot be separated from each other.

It is in light of such views that Curzon (1991) points out that the approach used to implement the curriculum in higher education plays a more significant and decisive

role in the learning process and the acquisition of knowledge that for learners. Implementing the curriculum from a social constructivist perspective also demands the lecturers to acknowledge that there is a huge difference between how learners learn from lower grades and how students learn in institutions of higher learning and that their perceptions of the learning environment are significantly different.

The knowledge of students differs in terms of concepts, schemas, self-constructed theories and scripts. This explains why for instance students arrive at different conclusions even though they are working on a similar transaction or case study in accounting. The students' individual prior knowledge and beliefs can possibly lead them to arrive at different conclusions and derive a different view on a similar phenomenon. Farkas (2008) cautions that this does not imply that some of the students are more knowledgeable than the others, but it simply means that students have different knowledge about the learning task on hand.

Referring to the views of Ormrod (2014a), implementing the curriculum social constructively also requires those involved in curriculum implementation to provide students with questions and tasks that promote and facilitate elaboration. This will promote a spirit of debate among the students. In direct agreement with this line of thought, Siegler (2009) concurs with Serpell, Baker and Sonnenschein (2005) that the more students are offered opportunities to elaborate on new subject content, the more they can expand mentally on what they are learning. Ormrod (2014b) concludes that students are more effectively apt to comprehend and understand subject content when they can mentally expand on the teaching and learning activities.

According to Brophy, Alleman and Knighton (2009), students obtain a conceptual comprehension of the learning topic when they can formulate several logical relationships with the various concepts and ideas of the subject content. This school of thought has been earlier alluded to by Carr (2010), Azevedo (2007), Fox, (2009), Ku, Chan, Wu, and Chen (2008) and Posner and Rothbart (2007). In their studies, they do not only provide some pointers on how students can be assisted to relate to the subject content in various ways but they also emphasise the educational importance of making students to perceive and understand the interrelationships between different learning concepts. To realise this in their learning environments, Brophy *et al.* (2009) suggest that those involved in curriculum implementation can

organise and structure instructional units around the few main themes and ideas and then constantly relate specific ideas back to this centre.

For instance, when teaching students instructional units that cover content such as the rule of double entry and the general ledger, the accounting lecturer can build and organise lessons around the accounting equation. The accounting equation should always be the foundation of such content and when students have a sound understanding and command of the accounting equation; it becomes very easy for them to identify the interconnectedness within the content areas, such as the general ledger and financial statements.

From the perspectives of Ormrod (2014a), the fundamental assumptions of the theory of social constructivism also imply that those involved in curriculum implementation should always acknowledge and be conscious of the significance of meaningful learning and the constructive nature of learning and memory. To achieve this, Roscoe and Chi (2007) suggest that the accounting lecturer can ask students to teach each other what they have learned. Hatano and Inagaki (2003) support this strategy by noting that it can motivate and encourage students to concentrate on the main ideas and integrate them together in a meaningful way. Roscoe and Chi (2007) proceed to claim that in the final analysis, students have a high probability of gaining and developing a sound conceptual understanding of the learning content and topic if they explore the content and topic in depth. In Ormrod's (2014b) view, this can be done through exploring various examples, analysing the cause and effect relationships between variables and finding out how specific details connect to general principles.

Moreover, Brophy *et al.* (2009) and Roscoe and Chi (2007) believe that implementing the curriculum social constructively also requires the stakeholders actively involved in curriculum implementation to provide the students with many opportunities to put into practice learned important knowledge and skills. They argue that students can learn basic skills and knowledge to automaticity through using and practising them repeatedly. However, they caution that this suggestion does not mean that the social constructivist lecturer should give student endless drill and practice activities that involve isolated facts and procedures. Students need to practice the new skills within the boundaries of instruction and guidance which assist them to improve those skills.

They still rely on the assistance of the lecturer to help them learn and understand new subject content. In agreeing with this idea, Costa (2008) asserts that when the learning environment is conducive, students can construct knowledge and understandings together with their lecturers and other more knowledgeable and experienced individuals. Vygotsky (1978, 1986) refers to these experienced and knowledgeable individual as significant others and the whole process as mediated learning and scaffolding.

In his illustration of the importance of mediated learning, Vygotsky (1978) developed the concept of zone of proximal development. He used this term to refer to the distance between the students' actual developmental level as determined by independent problem solving and the level of potential development which was determined by the students' problem solving abilities under adult guidance or in collaboration which more capable peers (Vygotsky, 1978). In his follow up on how human beings learn and acquire knowledge, Vygotsky (1986) used the term "zo-ped" to imply a similar meaning with zone of proximal development.

A revised definition of the zone of proximal development offered by Vygotsky (1986) is that of the point where a child's empirically rich but disorganised spontaneous concepts meet the logic and systematic reasoning of the adult. Vygotsky (1986) argues that as a consequence of this convergence, the shortfalls of the child's spontaneous reasoning are compensated by the strengths embedded in the adult's scientific logic. Vygotsky (1986) argues that the zone of proximal development differs from one student to another, depending on the student's relative abilities in relation to the appropriate structures of the adult. The subsequent result of the cooperation between the student and the lecturer becomes a significant part of the student's reasoning upon being internalised. This view emphasizes the role of the lecturer for successful implementation of the curriculum from a social constructivist paradigm and for successful teaching and learning to take place.

Vygotsky (1978) insinuates that students need both their lecturers and more capable peers for cognitive growth and development and ultimately, for academic success in their studies. The idea of the zone of proximal development as pioneered by Vygotsky (1978, 1986) is a constant reminder to those directly involved in curriculum implementation that students can do more and can go beyond the boundaries of their

capabilities when they learn from and where applicable, imitate their lecturers and classmates.

In his work on how individuals learn and acquire knowledge, Vygotsky (1978) argues that as more knowledgeable and experienced individuals, adults and lecturers often assist students to make sense of the world and reality by joint discussion of a phenomenon they are experiencing together. Daniel and Bimbola (2010) agree with Costa (2008) that interactions of this nature usually encourage and motivate students to think about the subject phenomenon in various ways, encourage them to connect labels to it, recognise its underlying concepts and principles and to make some inferences and conclusions about it.

In addition, a social constructivist approach to curriculum implementation calls upon curriculum implementers to assess the students' understandings regularly, identify their misconceptions about the learning content and deal with them accordingly. Ormrod (2014b) points out that in most cases, students do not necessarily construct the meanings from curriculum implementation which lecturers want them to construct. Instead, the students will interpret subject content in their own idiosyncratic ways. It is therefore imperative to monitor how students understand both the subject content and non-academic issues. According to Vosniadou (2008), curriculum implementers can obtain some insights into the realities which the students have constructed for themselves about the learning content and topic by asking them questions, encouraging open dialogue and carefully listening to their ideas and elaborations.

In view of the above, Vosniadou (2008) postulates that while lecturers often implement the curriculum with the anticipation that the newly acquired knowledge will replace the students' misconceptions, the students usually hold on to their existing erroneous beliefs about reality and the world stubbornly. They continue to harbour their misconceptions even after a considerable amount of instruction with clearly contradicts them. Ormrod (2014b) suggests that those involved in curriculum implementation need to encourage conceptual change when their students hold on to scientifically incorrect and inaccurate beliefs about reality and the world. Conceptual change is when the lecturers work actively and tirelessly to help students revise their thinking about a particular idea, concept or reality at large. However, Vosniadou (2008) cautions that convincing students to set aside their well engrained and long held beliefs can be very

problematic and in the end, may require focusing on the students' epistemic beliefs and the processes of their long term memory.

In his investigation on the perceptions of first year student teachers about their constructivist learning environment and implications for teacher educators, Mapuya (2018) has discovered that students in institutions of higher learning have a tendency to underestimate their abilities and usually struggle with learning tasks that require the interpretation of complex instructions. Thus when implementing the curriculum from a social constructivist school of thought, it is therefore important for those involved in curriculum implementation to clarify to the students the environment, the need, the attitudes, the values and their interrelationships. To this effect, Curzon (1991) maintains that lecturers need to help students to perceive their goals and how important these goals are and to regard their experiences as a potential learning asset.

Implementing the curriculum from a social constructivist view also requires those involved in curriculum implementation to provide students self-empowering opportunities. Vygotsky (1978) argues that the increasing ability of students to manipulate, control and direct their own behaviour is one of the essential elements of cognitive development and subsequent academic success. As individuals who are directly involved in curriculum implementation, lecturers are therefore challenged to ensure that they create opportunities for students to engage in independent and self-regulated learning. In this way, students will learn in response to their own personal needs and views as opposed to those of the individuals involved in curriculum implementation.

Moreover, a social constructivist approach to curriculum implementation makes it imperative for individuals who implement the curriculum to recognise and acknowledge the students' individual experiences. It is important to note that the experiences of first year students have increased significantly, having gone through primary and secondary education. Curzon (1991) notes that such experiences have also been interpreted and re-interpreted and that the students' perceptions of the teaching and learning environment could have change tremendously. In addition, the students' rate of learning could have slowed down, even though this does not to their efficiency of learning. Furthermore, the students' levels of motivation could also have

heightened significantly but not necessarily the skills and abilities required for academic success.

In light of the above, Mapuya (2018) and Makola (2016) caution in a similar voice that those involved in curriculum implementation in higher education should be sensitive to the students' learning needs. Mapuya (2018) further warns that it is these learning needs of students which must inform the approaches used by lecturers to implement the curriculum. Adding to this, Curzon (1991) notes that they must minimise abstraction and avoid distraction, encourage participation and avoid direct competition among students. Individual problem solving skills should always be encouraged in classes where learning activities are task oriented (Vygotsky, 1978).

Lastly, the educational implications of a social constructivist approach to curriculum implementation demands those involved in curriculum implementation to focus assessment on meaningful learning as opposed to rote learning. In support of the above, investigation by Newstead (2004) reveals that students rely on rote learning, tend to assume that this strategy will give them higher marks and that meaningful learning is counterproductive when they discover that the assessments is based on unrelated facts as opposed to an understanding and application of knowledge. Thus in the final analysis, those involved in curriculum implementation need to always communicate to students in the lecture halls and in the assessments that making sense of the content and learning tasks is more important than memorising them.

Based on the discussion preceding discussion on the educational positives and negatives of constructivist teaching and learning as well as its implications on curriculum implementation, the researcher has developed the following tree map in **Figure 2.8** below. This tree map summarises all the important components of constructivist teaching and learning and revealed by relevant literature.

Figure 2.8 below presents a holistic overview of constructivist teaching and learning and gives some insight into its educational implications and how it implicates curriculum implementation. This figure illustrates that the fundamental core values of constructivist teaching and learning are active student learning and construction of knowledge by the students. Active learning and knowledge construction culminate in a benefit of greater student involvement while the setback is misconceptions regarding the subject content. This is very true especially in light of the fact that students are

sometimes led to construct knowledge and understanding on their own (individual constructivism). If not verified by the lecturer, such knowledge can be based on some misconceptions. The figure further suggests that group discussions and cooperative learning are some of the practical examples of social constructivist teaching and learning.

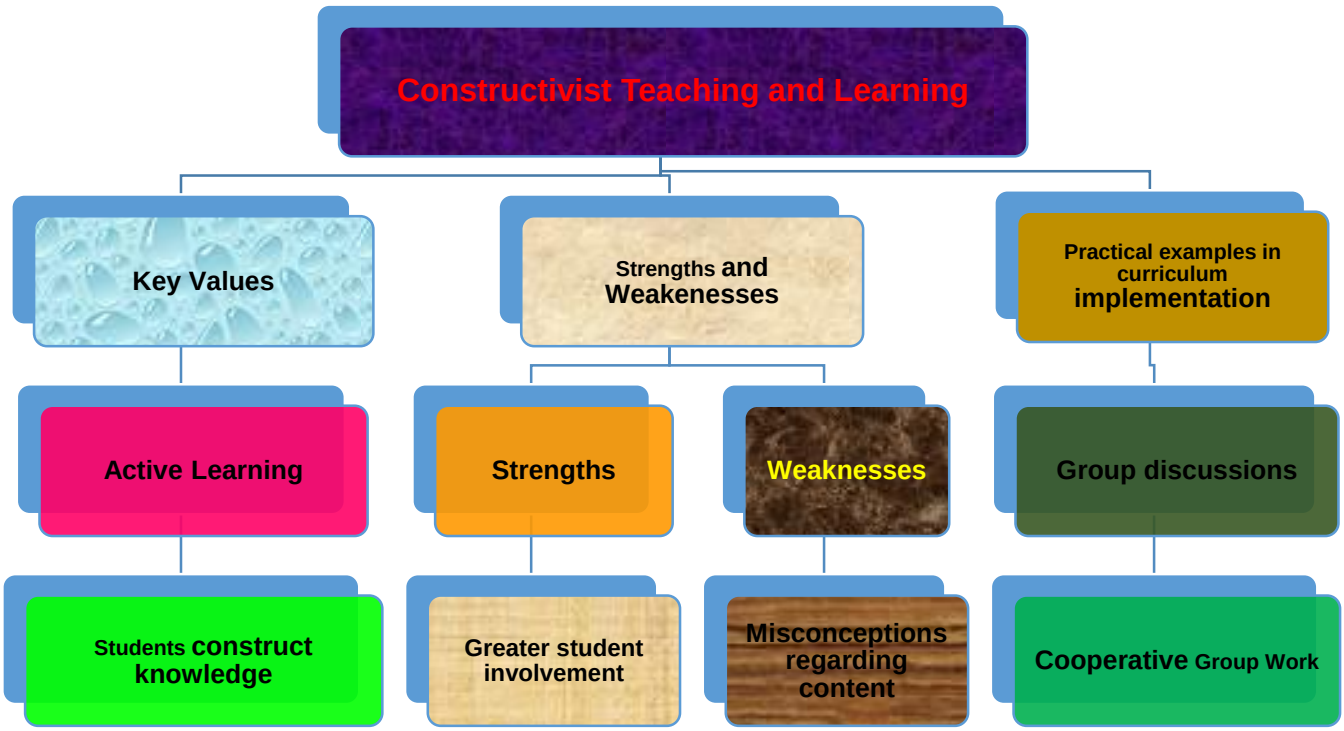

Figure 2.8 Conceptualisation of constructivist teaching. Adapted from du Toit, Louw and Jacobs (2016:78)

To demonstrate student diversity in the learning environment and the need to adopt constructivist teaching and learning approaches which make provision for student diversity, the researcher has developed **Figure 2. 9 below**. The figure demonstrates that students come to classroom with various set of experiences, interests, values, needs and abilities. It is therefore imperative for the lecturer to acknowledge these individual differences and design instruction in ways that are sensitive to and that address these needs. Furthermore, the learning environment consists of students who access the curriculum with different levels of motivation and who can engage the learning content at various cognitive levels. However, their levels of engagement in

the teaching and learning process is also a function and product of their levels of motivation.

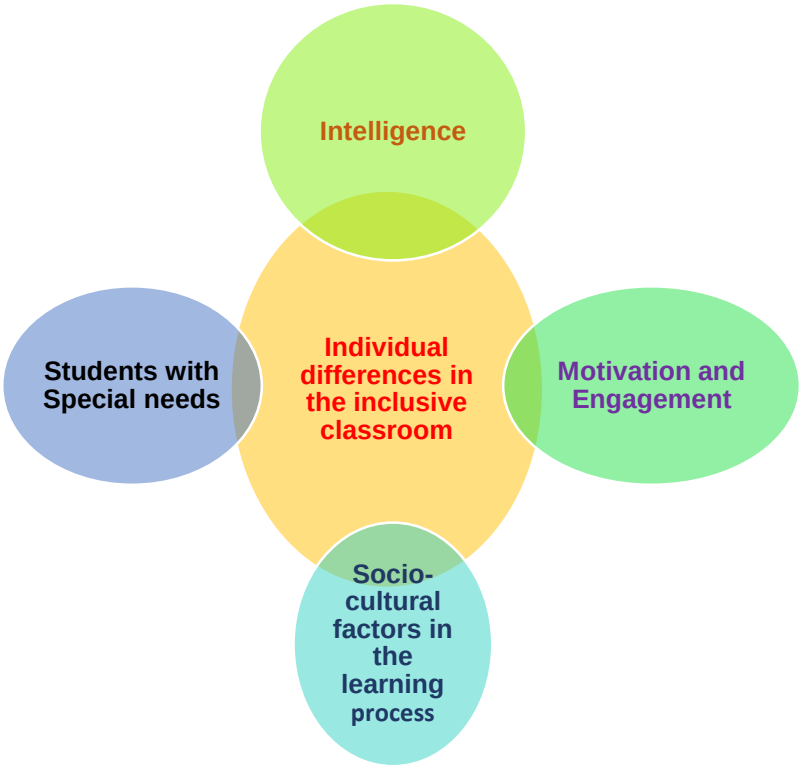

Figure 2.9: Diversity in the learning environment. Adapted from Krause, Sandra, Duchesne and McMaugh (2010:259)

2.9 SUMMARY

In concluding this chapter, it is befitting to make reference to the sentiments of Horsthemke *et al*., (2018) who caution that lecturers ought to be pedagogically responsive when implementing the curriculum. This implies that they need to consider the students, their diverse learning needs and contexts and then design and implement the curriculum in methods that enhance the students' epistemological access to the highest possible level. Horsthemke *et al.*, (2018) further caution that when those involved in curriculum implementation place too much emphasis on student diversity, they become pedagogically paralysed since they are not able to figure out how to meet the learning needs of every individual student in the learning environment. Thus lecturers have the difficult task of viewing their students as unique individuals with different and sometimes contrasting learning needs and also seeing

them as individuals who share enough common characteristics and learning needs to make provision for effective group learning.

From the foregoing arguments and discussions on the educational implications of social constructivism in curriculum implementation, it can be concluded that those involved in curriculum implementation need to understand the enormity and complexity of social constructivist teaching and learning. They need to comprehend that social constructivist learning is not just about absorbing information from the lecturer and the learning environment. Instead, it is an active process of formulating and creating understandings, interpretations and meanings from both formal and informal instruction. As such, students integrate their observations of reality and the world with their beliefs and existing knowledge to arrive at distinctive idiosyncratic comprehension of the world.

Consequently, curriculum implementers ought to regularly emphasise to students the significance of getting a sound understanding of the subject content. They also need to constantly emphasise to the students the rationale behind making sense and meaning out of the subject content, identifying how it is interrelated to each other and making some inferences as opposed to simply memorising it in a thoughtless and rote manner. To this end, the emphasis should not only be echoed in the words of those involved in curriculum implementation, but also in their instructional pedagogies and teaching and learning activities.

The students' activities, assignments and assessments must always to conform to and be compatible with assumptions of social constructivism. When implementing the curriculum, the pedagogical ethos of the accounting lecturer therefore need to be founded on and deeply grounded in social constructivism. Therefore, instead of simply presenting the accounting content in the lecture halls and asking students to write down notes, the accounting lecturer needs to ask students thought provoking questions that require them to assess, evaluate, organise, synthesise and apply what they are learning.

The following chapter presents focuses on the research design and methodology of this study.

CHAPTER III

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

The purpose of this chapter is to present research design and methodology as applicable to this study. This chapter is also a build up to the subsequent chapters on data presentation, analysis and discussion in that it provides the ontological, epistemological, philosophical and methodological assumptions which informed the researcher's actions, choices and justifications thereto. In this chapter, the researcher also takes a position on the methodologically sound and appealing path to follow in pursuit of answers to the research questions and to satisfy the research aim and objectives. Of course this decision is premised on the theories of multiple intelligences and social constructivism as presented in the previous chapter and on the study's topic as a whole.

Among others, it covers broad concepts such as research paradigm, research design, research methodology, research approach and the other sub related concepts under them. These include positivism, the quantitative research approach, interpretivism, the qualitative research approach, the phenomenological interpretive framework, pragmatism and the mixed methods approach. It also captures study related variables such as the population, the sample, the sampling technique, the pilot study, the research instruments, their construction, reliability and validity, data collection and analysis procedures and techniques. This chapter then concludes by explaining the ethical issues and considerations that were found to be relevant and consistent with the study, though the different phases of the study.

- **The researcher's conceptualisation of generic terms in this chapter**

After an extensive and in-depth review of a plethora of sources on research design and methodology, most of which are published by seasoned scholars and experts in social and educational research, such as Babbie (2013); Bitzer (2017); Cohen and Mannion (2013); Creswell (2013 and 2016); Denzin and Lincoln (2011); Kumar (2014), Leedy and Ormrod (2015); Maree (2016); MacMillan and Schumacher (2010) and Nieuwenhuis (2016), and the researcher has identified some controversies on what precisely is research design, research methods, research tools, research approaches and research methodology. However, following a rigorous interrogation of these

sources, the researcher has arrived at the conceptualisation of these terms as they are used in research as demonstrated in Figure 3.1 below.

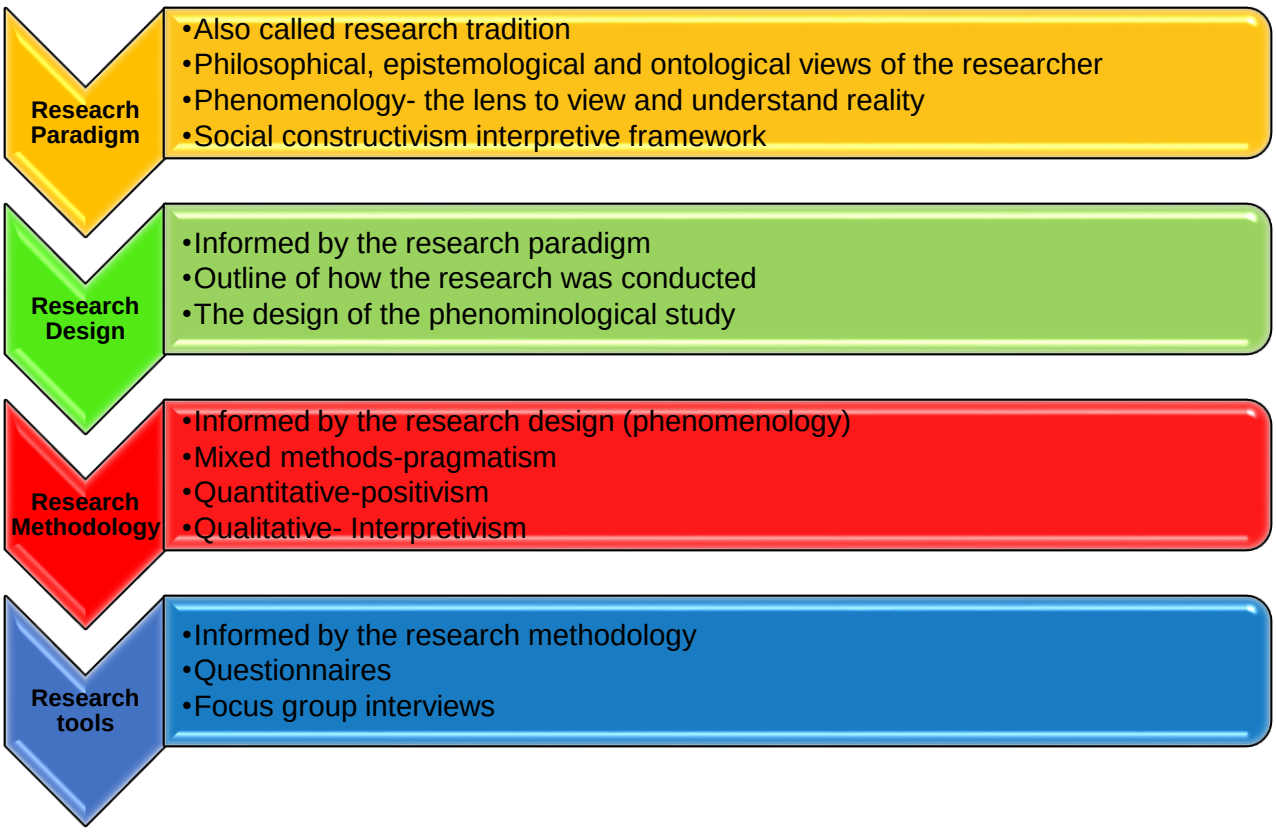

Figure 3.1: The researcher's conceptualisation of the various terms used in research

Figure 3.1 above presents the researcher's understanding and conceptualisation of research paradigm, research design, research methodology and research tools. Below is a presentation of a conceptual map of the research design and methodology of this chapter, with the various elements under each one of them.

Figure 3.2 which appears on the next page shows a conceptual map which outlines the key elements discussed in this chapter and how they relate to the problem under investigation.

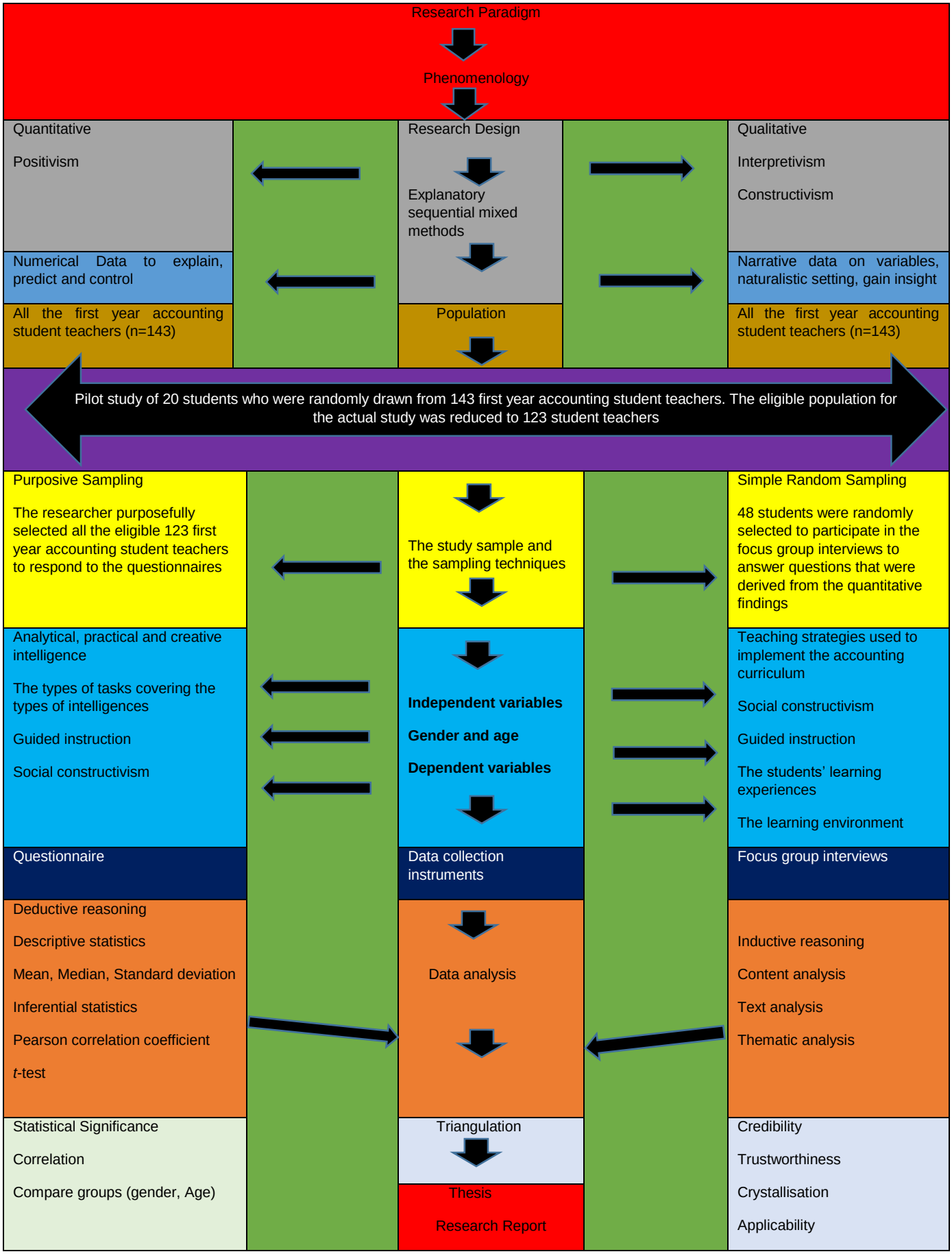

Figure3.2: Research design and methodology conceptual map

3.2 RESEARCH APPROACHES

At the climax of any investigation is a set of conclusions that are drawn from the data collected, usually translating into study findings. In making these conclusions, researchers have two approaches at their disposal which they can use to this effect. These are presented below in light of how they were also used by the researcher in this study to arrive at some conclusions, starting with the deductive approach.

3.2.1 Deductive approach

Leedy and Ormrod (2015) argue that deductive reasoning begins with the statements or assumptions taken by the researcher to be true. In the current study, these were the theoretical positions taken by Sternberg (2001; 2008) and Vygotsky (1976; 1997) in their respective theories on multiple intelligences, curriculum implementation approaches and collective assumptions on teaching and learning. This view is endorsed by Wagner *et al.* (2012) who allude that the deductive approach requires the researcher to arrive at some conclusions about the problem under investigation from a several grounds, migrating from theory to practice and observations. Therefore, reasoning takes place logically from the assumptions towards conclusions on the truth in those assumptions.

The researcher started by presenting the theoretical perspectives on the teaching and learning experiences of students and implications for curriculum implementation. These theoretical perspectives were imbedded in social constructivism and multiple intelligences. Above all, the theoretical underpinnings of social constructivism and multiple intelligences were the theoretical foundations for practice and research methodological choices and epistemological imperatives. All the conclusions arrived at were discussed in light of the assumptions advanced by the theoretical frameworks of the study. Henceforth, both the theoretical assumptions of social constructivism and the theory of multiple intelligences were used as a yardstick to either accept or reject the conclusions. By virtue of their assumptions having been backed scientific evidence, the researcher took them to be true and therefore as a starting point in arriving at conclusions.

The inductive approach will now be discussed below in view of how it was applied in the study.

3.2.2 Inductive approach

Silverman (2017) maintains that the inductive approach seeks to arrive at a conclusion about the study phenomena premised on the study of particular cases as opposed to just drawing conclusions from theory. Creswell (2016) and Leedy and Ormrod (2015) add that the inductive approach starts with an observation, investigation or study. From these observations, investigations or studies, the researcher uses specific instances to make conclusions regarding the total population. Thus, the researcher studies a sample to make generalisation about the entire population.

In the current study, the inductive approach was applied in the qualitative strand of the study. The researcher drew up a sample from the study population, which was involved in the focus group interviews. The qualitative data obtained from these focus group interviews was analysed thematically. The main and sub themes that emerged from each group for the focus group interviews were then used as a basis for conclusions. These conclusions were then generalised to all the first year accounting student teachers, including to those who did not participate in the focus group interviews.

In the section below, the researcher will now explain research design and methodology in the context of this study.

3.3 RESEARCH PARADIGMS

Deliberating on the rationale of identifying a paradigm which is at harmony with the study, Durrheim (2011) asserts that a paradigm is pivotal to research design because it has a direct effect on the nature of the research questions and the way in which these research questions are explored and answered. Researchers are warned not to ask research questions from the perspective of a certain paradigm and then attempt to answer them from the perspective of another paradigm. This explains why the researcher was guided by phenomenological, interpretivist and constructivist assumptions in collecting and analysing data. The research questions for this study were asked from social constructivist and phenomenological perspectives and the answers were sought from phenomenological and social constructivist approaches.

In the clarification of research paradigm, Bitzer (2017) uses the term research tradition as an alternative term for a research paradigm. Bitzer (2017) views a research paradigm as a world view lens to view and evaluate reality, which is related to the

purpose of the study. Similarly, Nieuwenhuis (2016) believes that a research paradigm is a collection of beliefs and assumptions about significant components of reality, the relationship between individuals and what they know and assumptions regarding methodology. In the views of Durrheim (2011), paradigms are systems of intertwined practice and thinking which define the nature of inquiry for a researcher along three important dimensions of ontology, epistemology and methodology. Evans *et al*. (2010) define a paradigm as an interpretive framework, a fundamental set of beliefs that guide and inform action. This definition suits Nieuwenhuis' (2017) view that paradigms are lens and organising principles used by individuals to interpret and understand reality. It comprises three major elements, which are methodology, epistemology and ontology. In the opinions of Evans *et al*. (2010), paradigms guide and inform both theory and research.

As such, attention will now be given to the three major paradigms in research and how they are exemplified in this study.

3.3.1 Positivism

As noted by Gall *et al.* (2014) positivism believes that there is a real world that can be investigated and understood through scientific methods of inquiry that are similar to those used in physical sciences. The quantitative strand of this study was rooted in positivism. Jansen (2016) and Maree (2016) concur that positivism maintains that science can only be based on observable facts. According to Evans *et al*. (2010) a positivist interpretation of the world believes in the existence of an objective reality which is free from the influence of time and context and which can be stated in terms of cause-and- effect laws. This study sought to explore the learning experiences of first year accounting student teachers and the implications such learning experiences have on curriculum implementation, which is a cause-and-effect relationship.

In addition, Leedy and Ormrod (2015) content that positivism assumes that scientists can objectively discover absolute, unquestionable truths about cause-and effect relationships within the physical world and human experiences, provided that these scientists are equipped with the relevant measurement tools. These sentiments speak to the correlations that were established in this study between guided instruction and multiple intelligences and between social constructivism and multiple intelligences. These correlations were arrived at after a meticulous and methodical application of the

relevant statistical techniques by the statistician on the quantitative data that was obtained in the closed ended section of the questionnaire.

The researcher will now focus on interpretivism, which gives way to the qualitative strand of this study.

3.3.2 Interpretivism

To begin with, the researcher wants to reaffirm that he subscribes to the epistemological assumptions of interpretivism and constructivism as advanced by scholars such Creswell (2016); Denzin and Lincoln (2011); Durrheim (2011); Maree (2016) and Nieuwenhuis (2016). The epistemological abstractions held by these scholars are not only consistent with the theoretical frameworks of this study but they also provide a logical and sound basis for phenomenology. To this, Jansen (2016) adds that interpretivism argues that social science can only be used as a lens through which one can practice social research and not necessarily to establish an absolute and single reality. Henceforth, Jansen (2016) stresses that interpretivism emphasises the meanings which people ascribe to their real life experiences. Phenomenologists refer to these real life experiences as the "lived experiences" (Kumar, 2014; Leedy and Ormrod, 2015; McMillan, 2010).

Gall, Gall and Borg (2014) argue that interpretivism is based on the assumption that social reality cannot exist outside the meanings that individuals ascribe to it. According to Nieuwenhuis (2013), interpretivism is concerned with the meanings participants assign to their experiences of the world they live in. Viewed in the context of this study, interpretivism deals with how the first year accounting students perceive, define and give meaning to their interactions and learning experiences in the accounting lecture halls where they access the curriculum. Like social constructivism, an interpretivist philosophical orientation towards curriculum implementation proposes that the students' knowledge and understanding are influenced by their exposure, unique experiences and their interpretation of these experiences. As argued by Maree (2016), interpretivism uses inductive data analyses. It allows themes to emerge from data, which enables the researcher to identify the possible realities and perspectives that are present in the data. Similar to constructivism and phenomenology, Maree (2016) notes that interpretivism assumes that there is no single reality, but a multitude of perspectives of what reality is all about and what it constitutes.

Comprising of both philosophical assumptions of positivism and interpretivism, pragmatism will now be discussed, as a paradigm for mixed research methods

3.3.3 Pragmatism

Denscombe (2013) and Denzin and Lincoln (2011) argue that pragmatism does not adopt a specific position on what constitutes a good research. As such, Creswell (2013) advances that pragmatism assumes that both objective observable phenomena and subjective meaning can provide rich knowledge depending on the questions formulated for the study. Therefore, pragmatism does not claim that either the qualitative or quantitative research approach is the best to investigate a problem. To this effect, Swain (2017) indicates that pragmatists view research as a process where concepts and meaning are generalizations of individuals' actions and experiences as well as the interactions people have with the environment. Pragmatism emphasizes the relationships between theory and practice

Noting the sentiments of Fraenkel *et al.* (2015) who argue that explaining and predicting relationships is the purpose of educational research and ultimately, educational research should develop laws that make it possible for humanity to make predictions. It is the researcher's firm view that those involved in curriculum implementation can make use of theories on the relationship between the approaches used to implement the curriculum and the students' learning experiences to improve the learning experiences of students, which is the goal of qualitative research. To this end, the pragmatist school of thought becomes handy.

Thus quantitative research was used to develop a comprehensive understanding of the relationship or correlations between the approaches used to implement the accounting curriculum and the students' learning experiences. In the education fraternity in general and in the precise context of this study, understanding the meaning the first year accounting student teachers ascribe to their learning experiences and encounters in the purpose of educational research is vital. Since laws that can be highly generalized do not exist to the qualitative research school of thought, pragmatism was considered to provide for both research approaches.

The statistical evidence on the correlation between the various teaching approaches and the realization of the various types of multiple intelligences was used as a basis for the recommendations and the model which was developed in this study. Thus both

the quantitative and qualitative research strands were combined to add value to this study and in making recommendations to improve future learning experiences of first accounting student teachers.

The following discussion focuses on research approaches in the precise context of this study.

3.4 RESEARCH DESIGN

The meanings of research design and research methodology have been highly contested in the social research and academic communities. These terms have been defined in many different ways since different scholars have different views pertaining to them. Swain (2017) also subscribes to this contestation on the meaning of these terms and emphasises the importance of differentiating between the two terms. However, despite the diversity and usually contradictory nature of the debates on the meaning of research design and research methodology, a host of writers have tried to capture the most distinctive and defining features among them. These perspectives on research design and research is presented separately below.

Research design is a plan that provides the underlying structure to incorporate the various elements of a study to make sure that the study findings are credible, free from bias and maximally generalizable. Trochim (2006) is cited by Dannels (2010) to have argued that research design is a glue which holds the research project together. Dannels (2010) proceeds to claim that the research design of a study determines how the study participants are selected, the manipulation of study variables, data collection and analysis and lastly, how extraneous variability is managed to be able to adequately address the research problem in its entirety.

From another perspective, Wilson (2017) defines research design as a strategy that combines the various aspects of the research study into a coherent and cohesive study. Creswell (2014); Gray (2014) and Punch 2011) collectively perceive research design as a plan of action in which the researcher decides how to communicate the chosen framework for the study and conduct the research. In the views of Kumar (2014), research design is not only a road map followed by the researcher in finding out answers to the research questions in a valid, accurate, economical and objective way, but also a procedural and operational plan which explains and shows how various methods and procedures were applied in a study. Similarly, Greenwood (2007)

believes that research design is synonymous with research strategy which is defined as a term used to identify the overall approach taken, including techniques, epistemological positions and the values advocated or embodied in the enquiry process.

In accordance with the views of Terre Blanche and Durrheim (2011), research design is a strategic framework for action which connects the research questions with the actual implementation of the study. Terre Blanche *et al.* (2011) further assert that a research design is a plan which guides the preparations for data collection and analysis in a way that is consistent with the purpose of the study and available resources. This view supports the views of Bitzer (2017) who regards research design as a blueprint or detailed plan which outlines how the researcher will conduct and carry out a study. This plan also operationalises the research variables to make them measurable, focusing on the selection of the study sample, data collection to answer the research questions or test a research hypothesis and analysis of results and provides a more comprehensive and all-inclusive definition of research design.

All the definitions above indicate that a researcher design is an overall plan of how the research was conducted, taking into consideration the research questions and research objectives. In the researcher's views, research design is therefore not a process but presentation of the steps that were followed in carrying out the study, in their sequential order, from the determination of data collection instruments, the actual data collection process, data analysis and interpretation. This is where the researcher demonstrates to the audience about various interrelated processes and events that were followed in the study.

After explaining research design, it is necessary to discuss research methodology since these are viewed by the researcher as two different terms. Of all the views on research methodology expressed by various scholars, the researcher subscribes to the ones of Evans *et al*. (2010) and Nieuwenhuis (2016). Evans *et al*. (2010) argue that methodology explores and examines the process of how information (to understand reality, the world) is obtained while Nieuwenhuis (2016) reiterates that research methodology is a bridge which connects and brings together the researcher's philosophical position on ontology and epistemology and the research method. To

Nieuwenhuis (2016), methodology serves as a guide for the researcher in trying to link ontological and epistemological beliefs with research tools.

On the other hand, Swain (2017) believes that research methodology is a strategy, or plan of action which links the chosen research methods to specific conceptual assumptions and indicating how research design will generate answers to the research questions raised in the study. Some scholars such as Wilson (2017) believe that research methodology entails the overarching principles about how a research study has been designed. Others like Leedy and Ormrod (2015) view research methodology as the general approach followed by the researcher in conducting the study. They further argue that this approach usually influences and informs the researcher's choice of specific research tools.

Bitzer (2017) maintains that research methodology is a broad conceptualisation of the research project, which includes components such as the methods used by the researcher to generate data. The research methodology of a study helps the researcher to explain and answer questions related to the who, what, why, how and where of the study. Research methodology, according to Bitzer (2017) also covers items such as research paradigm, theoretical model and the various phases of the qualitative and quantitative techniques of a study. Methodology therefore refers to the research approach while research design pertains to the plan of action that connects and informs the methods used for data collection and data analysis in search of answers to the research questions raised in the study.

Referring back to research design, this study employed a mixed methods research design. This will now be discussed in the following section.

3.4.1 Mixed methods research design

Creswell and Clark (2011) and Teddlie and Tashakkori (2009) concur that a host of definitions have been put forward over the years to define mixed methods. Kumar (2014) argues that the outstanding similarity among all these definitions is that they incorporate the various elements of research methods. Maree (2016) prefers to use the term multimethod strategy to refer to the mixed methods research approach. Following their separate evaluations and assessments of qualitative and quantitative research approaches, Creswell (2013); Creswell and Clark (2011); Creswell and Plano Clark (2016) and Kumar (2014) unanimously conclude that both quantitative and

qualitative research approaches have their own strengths and weaknesses and deliver the verdict that none of them should be viewed as superior or inferior to the other in absolute terms. It thus makes methodological logic to suggest that mixing these two approaches allowed the researcher to use the strengths of one method to compensate for the weaknesses of another method in this study.

In support of the above analysis, Kumar (2014) points out that the combination of different methods is done to exploit and benefit from the strengths of both research approaches to enhance and enrich the validity, accuracy and reliability of the study findings and best achieve the research aims and objectives. For this reason, Creswell (2016) claims that there is no single standout research approach which can single handedly provide answers to all the research questions raised in a study. This is also substantiated by Leedy and Ormrod (2015) who indicate that the idea of mixed methods research approaches in social sciences is rooted in the assumption that in some cases, the researcher needs to have more than a single method from one paradigm to enhance the accuracy and meaningfulness of one's conclusions and to reassert the study's findings.

Denscombe (2013) and Kumar (2014) share similar views with Babbie (2013) and Creswell (2016) that the mixed methods approach is based on the assumption that within the same study, qualitative methods can be superior over quantitative methods and that quantitative methods can also be superior over qualitative methods. Of course this superiority of one research approach over the other depends on the nature of the problem under investigation and how the researcher uses them. To obtain the best results and a comprehensive picture of the study phenomena, the researcher is therefore compelled to use both approaches in the same study.

The advocates of mixed methods approach argue that to promote and achieve accurate and meaningful research findings and conclusions, one has to employ several methods belonging to one or both qualitative and quantitative approaches in the inquiry process (Babbie, 2013; Creswell, 2016; Durrnheim, 2011 and Leedy and Ormrod, 2015) in particular claim that those in favour of mixed research methods argue that the use of mixed methods in a single study does not only give the researcher a more comprehensive and complete picture of the study phenomena, but also enable the researcher to reconfirm the study findings. Therefore, one can

conclude that the mixed methods approach improves and enhances the rationale and impact of triangulation in a study. It is for this reason that a sequential explanatory mixed methods was used in this research.

To substantiate the argument in favour of mixed methods approach, Teddlie and Tashakkori (2009) argue that an even mix of both qualitative and quantitative data sets is unavoidable in social and educational studies, regardless of the researcher's theoretical perspectives. As demonstrated in this study, the data sets can be used to corroborate and explain each other to produce an illuminating view of the study phenomena. The first phase of this study was the quantitative research approach, following a sequential explanatory mixed methods research design. However, before deliberating on the sequential explanatory mixed methods research design, it has been found necessary to identify the major distinguishing characteristics of the quantitative and qualitative approaches that from the foundation of mixed methods approach.

- **Sequential explanatory mixed methods approach**

As indicated above, a sequential explanatory mixed methods research design was used in this study. Ivankova, Creswell and Plano Clark (2016) suggest that this research design is also known as the Quan-qual research model. On the other hand, McMillan and Schumacher (2010) note that the sequential explanatory mixed methods research design is a type of mixed methods in which the researcher collects and analyses quantitative data followed by a qualitative phase. As precisely explained by Ivankova, *et al.* (2016), the word explanatory in the name of the research design implies that qualitative findings are used to explain the quantitative results obtained from the first stage. In support of this research design, Fraenkel, Wallen, and Hyun (2015) argue that there are instances where the researcher can conduct a quantitative study and still require additional data to interrogate the quantitative data and enrich the study findings.

In the same breadth, Ivankova *et al.* (2016) suggest that the rationale behind the sequential explanatory mixed methods design is to use qualitative findings to illuminate quantitative results. This is view subscribes to the earlier statement of Creswell and Plano Clark (2011) who state that in using the sequential explanatory mixed methods design, the researcher acknowledges that while the quantitative

findings provide a general overview of the phenomena under investigation, there is a need for qualitative results to refine, explain and describe that general picture to make it more comprehensible.

In the current study, the researcher first carried quantitative research and then used qualitative research to follow up and refine the quantitative findings. After collecting and analysing quantitative data, a follow up qualitative study using in-depth focus group interviews and narrative descriptions of the learning experiences of the first year accounting student teachers was conducted. In line with the recommendations of both Fraenkel *et al*. (2015) and Ivankova *et al.* (2016) the two types of data were analysed separately and thereafter, the results of the qualitative analysis were used to expand the quantitative findings of the study. This is illustrated in Figure 3.2 below.

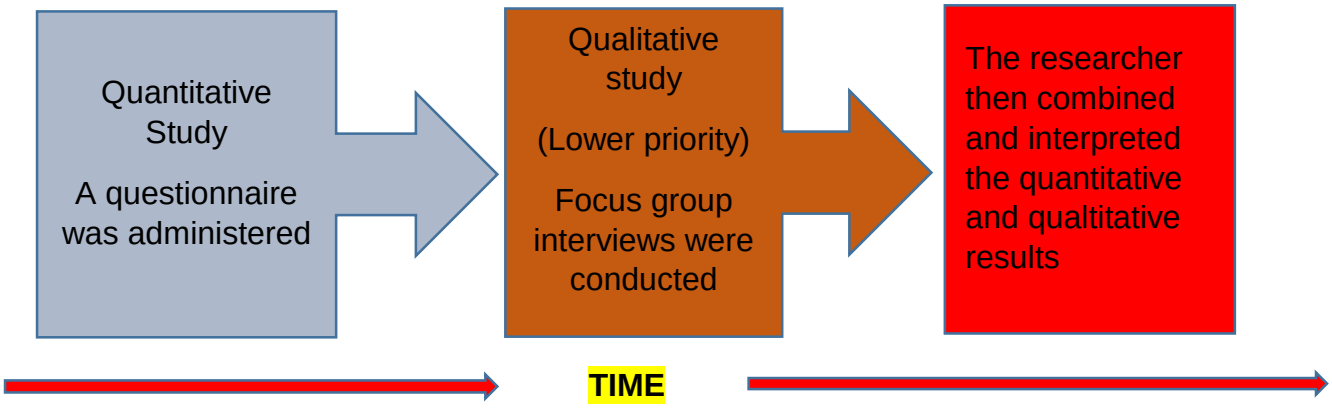

Figure 3.3: Explanatory Design

Source: Adapted from Fraenkel, Wallen, and Hyun (2015)

The quantitative findings directed the qualitative study in terms of the suitable research instrument and the relevant questions. Questions for the focus group interviews were drawn from the quantitative findings. However, while the illustration of the sequential explanatory mixed methods research design suggested by Fraenkel *et al*. (2015) shows the basic structure and sequence of explanatory sequential mixed methods design, this study was neither biased towards the quantitative strand nor prioritised it more than the qualitative one. As a result, below is an illustration developed by the researcher but adapted from Ivankova, Creswell and Plano Clark (2016) which portrays a more applicable and accurate diagrammatical presentation of how the two research strands were used in this study. Informed by pragmatism and phenomenology, the researcher believed that none of these two research strands

were either inferior or superior to each other. They were used in light of their equally significant and unique value they brought to this phenomenological study.

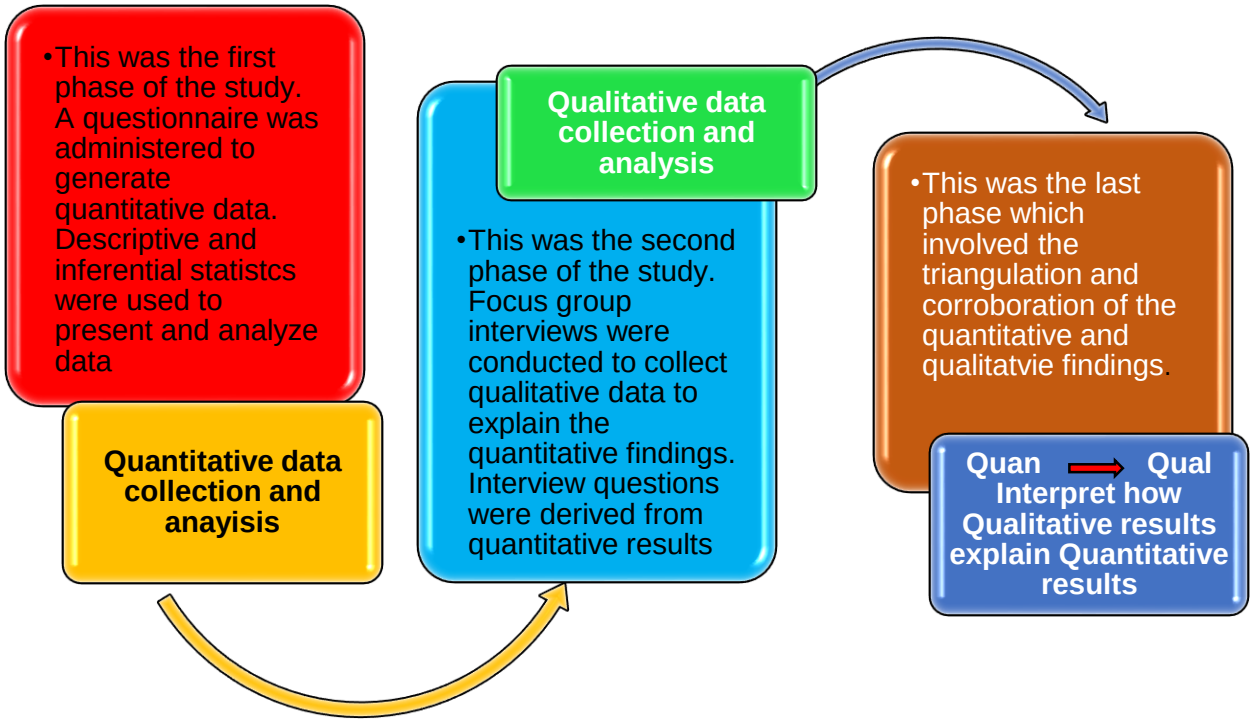

Figure 3.4: Explanatory sequential mixed methods design

Source: Adapted from Ivankova, Creswell and Plano Clark (2016)

A discussion of the quantitative strand of this study follows below.

3.4.2 Quantitative research

The research design that was adopted in the quantitative strand of this study was non-experimental research design. Some of the non-experimental research designs that are employed in research are correlational study, ex post facto study, longitudinal study, cross-sectional study, cohort-sequential design, naturalistic observation, meta-analysis and survey. The non-experimental approach employed in this study was correlational.

Fraenkel *et al.* (2015) endorse the earlier views of Kumar (2014) who argues that quantitative research is based on the philosophy of positivism which assumes that the world is a single reality that can be generally understood through a careful investigation. Creswell (2016) and Durrheim (2011) propound that quantitative

researchers maintain that reality exists independent of humanity and is simply waiting to be unearthed and discovered. In the views of Fraenkel *et al.* (2015), to discover the nature of this reality and how it operates is the ultimate responsibility of science. Furthermore, Leedy and Ormrod (2015) suggest that quantitative researchers believe that more and accurate precise statements about the nature of reality can potentially result from research investigations. Thus, Ormrod (2014a) observes that quantitative research seeks to obtain data which is inherently numerical in nature and which can be easily transformed to numbers.

As Creswell (2013) and Kumar (2014) point out, a research study is deemed quantitative when the aim of the researcher is to quantity the degree of variation in the phenomena under investigation. Durrheim (2011) believes that it is further classified as quantitative when data is collected through variables which are predominantly quantitative and when data analysis is done with the aim of establishing and ascertaining the magnitude of differences or variations in the study variables. The Pearson product moment correlation coefficient and *t*-test statistical techniques employed in this study appeal to this diagnosis of quantitative research.

Furthermore, in this study, the quantitative approach was used to determine and report on the level of variations on the students' responses to the items or statements that were posed to them in the closed ended section of the questionnaire. This, according to Kumar (2014) is typical of quantitative research. However, Kumar (2014) makes a very bold and brave statement by suggesting that the use of statistics is not necessarily a pivotal aspect of quantitative research. But rather, the main use of statistics is to serve as a test for the researcher to either accept or reject conclusions arrived at by the researcher from the data analysis. While most of the literature on quantitative research is very silent on this claim made by Kumar (2014), the researcher agrees with this assertion and establishes the basis for such statement.

In a study of this nature, in which a sequential explanatory mixed methods research design was used, statistics were used to corroborate and confirm the qualitative findings and vice versa. In support of this claim, Creswell (2013) argues that among other things, statistics assist the researcher to quantify the magnitude of association between study variables, which no other qualitative techniques can produce. Kumar (2014) proceeds to claim that statistics also give the researcher the level of confidence

and conviction to place in study findings and to separate the effect of variables that are different, for instance, guided instruction and social constructivism.

As noted by Kumar (2014), the quantitative research approach is vested in the philosophy of rationalism. It is usually designed around a set of procedures which are rigid, predetermined and structured to explore a study phenomenon. To clarify this point, reference can be made to the differences between the open ended and closed ended sections of the questionnaire. The closed ended section of the questionnaire, which represented the quantitative research aspect of the study provided some clear boundaries and limitations on the responses. This demonstrates the rigidity and predetermination of quantitative research. On the other hand, the open ended section of the questionnaire, together with the focus group interview questions, both of which were part of the qualitative research strand of this study, did not have clearly demarcated terms of reference in responding to the questions.

Furthermore, Johnson and Christensen (2014) and Leedy and Ormrod (2015) concur with Kumar (2014) that the aim of quantitative research is to quantify the degree of variation in a study phenomenon. It is for this reason that scholars such as Creswell (2013) and Fraenkel *et al.* (2015) conclude that the quantitative research approach emphasises measurement of the study variables and the outmost objectivity of the measurement process. The computation of the Pearson product-moment correlation coefficient which measured the degree of variation on the relationship between multiple intelligences, guided instruction and social constructivism testifies this aspect of the quantitative research approach. All the Cronbach's Alpha statistical tests on the reliability of the whole complete questionnaire and its subscales also demonstrate the emphasis on objective measurement of study variables, as a salient feature of quantitative research in this study.

Babbie (2013) and Fraenkel *et al.* (2015) advance similar ideas that the quantitative approach is well structured and is more relevant and applicable when the aim of the study is to establish the extent of a problem or phenomenon. Embedded in the aim of this study was to determine the extent to which the various elements of multiple intelligences were included and incorporated in the teaching and learning activities which the first year accounting student teachers were exposed to as they accessed the accounting curriculum. Furthermore, through the use of the Pearson correlation

coefficient, the study sought to establish the extent of the relationship between teaching strategies such as guided instruction and social constructivism are used in curriculum implementation and multiple intelligences.

Correlational research will now be discussed as the quantitative research design that was adopted in the study.

3.4.2.1 Correlational research design

The quantitative aspect of this study was executed using a non-experimental approach, which is collectively viewed by Gomm (2017) and Johnson and Christensen (2014) as a form of research where there is no manipulation of independent variables and random assignment to groups. A correlational study was found to be highly compatible with inferential statistics which is basically concerned with propositions and hypotheses. In addition, the methodological position taken by scholars such as Durrheim (2011); Gall *et al.* (2014); Gomm (2017); Osborne (2010) and Owen (2017) also informed the call to adopt a correlational study for the quantitative aspect of the study. Among others, Owen (2017) particularly points out that propositions and hypotheses can be proved false or true if they are empirical in terms of observable facts. It was this quest to obtain empirical evidence that led to this research design.

Coupled with the above, the researcher also identified previous studies by Borwarnginn, and Tate, (2014); Cassidy, Britisch, Griffin, Manolovizt, Shen and Turney, (2011); Hannah, (2013) and Somenarain, Akkaraju, and Gharbaran, (2010) which had produced empirical evidence on the existence of a relationship between certain variables of the learning experience, the learning environment and the approach used to implement the curriculum. Consequently, it was deemed necessary to investigate how the variables of this study are related to curriculum implementation approaches. The approaches used to implement the accounting curriculum were classified under guided instruction and social constructivism.

In their advice to novice researchers when conducting a correlational study, Gall *et al*. (2014) suggest that a correlational study should measure all the values of the study variables and include them in the statistical analysis. It was for this reason that the hypothetical statements posed in this quantitative strand of the study included gender, age, and the sub-variables under multiple intelligences, guided instruction and social constructivism. Guided instruction and social constructivism were perceived to be the

independent variables of the study and each one of them was tested separately with its own sub-elements. On the other hand, the students' attainment of the various types of multiple intelligences was considered to be a dependent variable whose level or intensity of attainment was a function of guided instruction and social constructivism, which are the umbrella terms representing the various approaches used to implement the curriculum.

Furthermore, it was also assumed in the study that gender and age have on effect on one's scores of the learning activities which promote the various types of multiple intelligences. Another assumption made was that gender and age influenced the students' scores on guided instruction and social constructivism. To this effect, a set of hypotheses was developed to hypothesise the relationship between these study variables. Therefore, a correlational study was adopted, with the Pearson correlation coefficient being the statistical technique used to test the existence and magnitude of that professed relationship between the various study variables identified above. Gomm (2017) and Osborne (2010) concur that a more accurate way of presenting the relationship between the study variables mathematically is through the correlation coefficient. It was against this backdrop that a correlational study was conducted using the Pearson product-moment correlation coefficient.

With the background to the correlational study having been presented, the researcher will now discuss the definition of a correlational study and its defining features as a quantitative research design. Evident in the views presented by various scholars on correlational research is their unanimous agreement on the basic underlying assumptions, description, function and structure of correlational research (Gall *et al.* 2014; Gomm, 2017; Gray, 2014; Johnson and Christensen, 2014; Leedy and Ormrod, 2015; Kumar, 2014; Owen, 2017 and Osborne, 2010). Gomm (2017) argues that correlational studies are rooted in positivism, which is the philosophical assumption of mainstream natural sciences. Ontologically, this implies that there are entities and processes which exist in the world regardless of the perspectives and assumptions held by the researcher. Similar to a positivist school of thought, correlational research assumes that knowledge can be scientific only if it is premised on a measured quantitative observation of empirical evidence (Gomm, 2017).

In the work of Gray (2014), it is assumed that a correlational study deals with associations between study variables, paying particular attention to the relationship between them. It is when a professed association between study variables is measured numerically and expressed mathematically. Gray (2014) maintains that numerical measurement of the association between the variables produces a correlation coefficient which indicates the strength and direction of the relationship between them.

Johnson and Christensen (2014) perceive it to be a form of non-experimental research in which the researcher studies the relationship between two or more quantifiable variables. More still, Gay *et al.* (2011) are convinced that correlational search deals with collecting data to determine whether and to what extent, a relationship exists between two or more variables that can be quantified in a study. Scores for the different variables on multiple intelligences, guided instruction and social constructivism were obtained and then paired for correlations. The result was expressed as a correlation coefficient of the relationship between multiple intelligences and curriculum implementation approaches.

Leedy and Ormrod (2015) believe that a correlational study examines the degree to which differences in one characteristic or variable are associated with differences in one or more other variables or characteristics. Gay *et al.* (2011) point out that for one to be able to conduct a correlational study, the study variables to be investigated must be scored numerically. All the values of the measured variable are then taken into consideration for correlation. In the current study, a semantic differential scale of 1 to 7 was used. Kumar (2014) propounds that a correlational study is conducted to investigate the existence of a relationship between two or more variables, for instance, the relationship between curriculum implementation approaches and multiple intelligences and the relationship between the students' learning experiences and curriculum implementation approaches.

To make the interpretation of the study findings more meaningful and relevant, Gay *et al.* (2011) suggest that the researcher should have a theoretical basis for choosing the study variables to be correlated. Osborne (2010) concurs with Gay *et al.* (2011) who suggest that when conducting a correlational study, it is important for the researcher to adopt a theoretical rationale for investigating the phenomena, high quality

measurements of the study variables of interest and a suitable analytical approach. In the current study, Sternberg's (2002; 2008) triarchic theory of successful intelligence and the theory of social constructivism as propounded by Vygotsky (1978; 1986) provided the researcher with the theoretical foundation and justification on the selection of the variables to be explored in this study. As such, the researcher drew from the theoretical perspectives and assumptions advanced by these theories to investigate the correlation between multiple intelligences, guided instruction and social constructivism.

After establishing a firm and sound theoretical foundation on which to justify the choice of study variables, Gay *et al.* (2011) vindicate the earlier sentiments of Osborne (2010) that it becomes imperative that the researcher develops valid and reliable measures of the study variables to be correlated. Gay *et al.* (2011) specifically caution that if the measuring instrument does not reflect the intended variables accurately and reliably, the resulting coefficient will not provide an accurate indication of the magnitude of the relationship. Osborne (2010) further cautions the researcher to choose and develop a valid and reliable measurement tool suitable for the study variables. Furthermore, Gay *et al.* (2011) suggest that the study variables to be correlated must be chosen on the basis of a given criteria. In consideration of this, the multiple intelligences were considered to be a dependent variable whose attainment was influenced by the independent variable of approaches used to implement the curriculum.

Premised on the above sentiments, the researcher developed the measurement tool for multiple intelligences, guided instruction and social constructivism within the theoretical imperatives and assumptions of Sternberg's (2002; 2008), triarchic theory of successful intelligence and the theory of social constructivism as propounded by Vygotsky (1978; 1986) and the subsequent follow up research on them (Gardner, 2004; Ormrod, 2014; Tobias and Duffy, 2009; Kirschner, Sweller and Clark, 2006; Sternberg and Grigorenko, 2003).The researcher also wants to reiterate that the reliability of the research instrument specifically designed to measure the study variables was satisfactorily high (cf. Table 3.1). The sample's scores were useful in identifying the most used type of approach in implementing the curriculum and the subsequent types of multiple intelligences the approach was appealing to. This was demonstrated in the established relationship between the approaches used to

implement the curriculum and multiple intelligences realised or attained. The following section discusses qualitative research in light of the study.

3.4.3 Qualitative research

The qualitative aspect of this study is manifested and exemplified in the open ended section of the questionnaire and the in-depth focus group interviews, whose questions were drawn from the quantitative findings of the questionnaire. It is also important to reiterate that the manner in which the ideas of multiple intelligences, guided instruction and social constructivism are dealt with in the entire study is reminiscent of qualitative research in principle. Most importantly, it is essential to highlight that guided instruction, social constructivism and multiple intelligences emphasise that reality is not constant but changes from context to context and person to person, which is also one of the fundamental assumptions of qualitative research and interpretivism.

Consistent with the researcher's sentiments above is the remarks of Nieuwenhuis (2016) that while there is no single way of conducting qualitative research, every qualitative research ought to be guided by certain methodological and philosophical positions that render it scientific. This school of thought is supported by Fraenkel *et al.* (2015) who maintain that qualitative researchers believe that the researcher's world view influences the theoretical framework of the study and the subsequent processes that are followed. It is for this reason that Kumar (2014) cautions that the aim of qualitative research is to explore the nature of diversity rather than to quantify it. In its quest to explore this diversity, the qualitative approach adopts a more liberal and unstructured stance in the research process, especially in data collection. To this effect, Babbie (2013) and Creswell (2016) are unanimous that an investigation is regarded as qualitative when it seeks to describe an event, situation, problem or phenomena. By adopting phenomenology as a framework for the inquiry, the researcher automatically sought to describe the learning experiences of first year accounting student teachers.

On the premise of such a purpose, Kumar (2014) argues that data is collected through the use of variables that are on ordinal or nominal scales, which according to Fraenkel *et al.* (2015), are commonly referred to as qualitative measurement scales. On the other hand, Ormrod (2014a) defines qualitative research as a kind of research that produces information which cannot be easily expressed in numerical terms and which

typically involves in-depth analysis of a complete phenomenon. Kumar (2014) further suggests that a study is deemed to be qualitative when data analysis is conducted to describe the extent or degree of variation in the study problem or phenomena under investigation without quantifying that data or expressing it in numerical terms. Moreover, Durrheim (2011) believes that qualitative studies are concerned with the description of the observed event, situation or experience, such as the learning experiences of first year accounting student teachers.

At the centre of qualitative investigations is the historical enumeration of events, situations and experiences and a detailed account of the perceptions, views and opinions held by people on a particular phenomenon (Denzin and Lincoln, 2011). Fraenkel *et al.* (2015) further suggest that at the heart of the qualitative research process is the belief that values, facts and views are fundamentally related. Viewed in the context of this study, how the first year accounting student teachers interpret their learning experiences in the learning environment where they access the accounting curriculum is important to understand how approaches used in curriculum implementation influence learning experiences.

When defining qualitative research, Creswell (2013) emphasises that its research process flows from philosophical assumptions, which is ontology in this study, to interpretive lens, which is social constructivism interpretive framework in this study, to the various procedures followed in the study of the research problem. Scholars such as Creswell (2013); Denzin and Lincoln (2011); Gall *et al.* (2014) and Leedy and Ormrod (2015) are unanimous that a framework exists for the data collection procedures which is the approach to inquiry. In this study, such a framework which was adopted for the inquiry is phenomenology.

Creswell and Clark (2011); Gall *et al.* (2014) and Kumar (2014) agree with Nieuwenhuis (2016) that qualitative research is naturalistic in nature, a view which is explained by Creswell (2016) and implying that qualitative research views social life in light of processes that happen as opposed to terms that are static. To this, Nieuwenhuis (2016) adds that qualitative research relies on linguistic rather than numerical data, and concludes that as a result, it analyses data using meaning based approaches as opposed to statistical evidence. This attests to Kumar's (2014) sentiments that the qualitative approach is grounded in the philosophical orientation

of empiricism and follows an unstructured, flexible and open approach to the research process. In this study, this assumption is exemplified in the open ended section of the questionnaire and the focus group interviews which were highly flexible.

In the views of Denzin and Lincoln (2011), qualitative research is a form of enquiry in which the researcher is located in the real world. To them, qualitative research is a blend of interpretive and material practices that render visibility to the world. Such practices revolutionise the world and turn it into a series of representations. These representations include interviews, field notes, photographs, conversations, recordings and diaries. The current study featured focus group interviews and recordings. Creswell (2016) maintains that this view of qualitative research by Denzin and Lincoln (2011) communicates the constantly changing nature of qualitative research from social construction to interpretivism. On the basis of Creswell's (2016) remarks, one can confidently establish the compatibility between guided instruction, social constructivism, multiple intelligences and qualitative research.

In support of the argument advanced by Creswell (2013); Fraenkel *et al*. (2015) and Nieuwenhuis (2016) allude that qualitative research believes in multiple realities which are socially constructed by different individual perspectives, ideas and perceptions of the same phenomena. This assumption is also at harmony with Creswell's (2013) and Denzin and Lincoln's (2011) ideas of the social constructivist interpretive framework and phenomenology. Like phenomenology, qualitative research seeks to understand a specific phenomenon from the perspectives of the study participants.

In the current study, the focus group interviews were found to be very relevant towards this social construction of reality and the meaning of experiences. Central to the researcher's aim in this study was to obtain a comprehensive and detailed understanding of the learning experiences of the first year accounting student teachers, how they interpret them, the meaning they ascribe to these learning experiences and to obtain an accurate view of how it feels like to access the accounting curriculum of the B Ed Senior Phase and FET Teaching first year level at a university of technology. This argument is consistent with the views of Creswell (2013); Denzin and Lincoln (2011) and Nieuwenhuis (2016) on the nature of qualitative research as presented above.

Perhaps a more illuminating and all-inclusive description of qualitative research is presented by the identical views of Creswell (2016), Fraenkel *et al.* (2015), Nieuwenhuis (2016) and Swain (2017) who all agree on the underlying assumptions of qualitative research. In line with Nieuwenhuis' (2016) views, qualitative research assumes that reality exists in the form of multiple formations and constructions because reality is co-constructed by the people involved in the study. To this, Fraenkel *et al.* (2015) add that qualitative research proposes that alternative perspectives and views of reality and the nature of the world can be produced by research investigations in which both the participants and the researcher are actively involved. As such, Creswell (2016) and Swain (2017) allude that researchers cannot isolate themselves from the people being studied. However, this line of thought contradicts the idea of "bracketing" the researcher's preconceptions which is a prerequisite for the phenomenological framework of inquiry which was adopted by the researcher in the qualitative approach strand.

Looking at the qualitative aspect of this study, Creswell (2016) suggests that the theoretical perspective commonly associated with qualitative research is phenomenology. In following paragraphs on the phenomenological approach, the researcher seeks to understand meaning in events and in human interactions. Therefore, the following section focuses on phenomenology as a qualitative strand of this study.

3.4.3.1 Phenomenology

A phenomenological design was found to be compatible with the researcher's philosophical perspectives, which are largely grounded in ontology and constructivist epistemology (Maxwell, 2012), social constructivism (Denzin and Lincoln, 2011) and the theory of successful intelligence. It is worth mentioning that ontology, as a philosophical assumption conforms to the ideas of multiple intelligences, constructivism and relativism in curriculum implementation. Methodologically, these philosophical positions call for an inductive approach to the research process and data collection. As noted by Denscombe (2013) phenomenology is associated with research approach which uses qualitative methodologies which emphasise the views and personal experiences of participants in the study. In the same vein, Terre Blanche, Durrheim and Painter (2011) suggest that qualitative research seeks to develop methodologies that enable the understanding of human behaviour.

It is also necessary to remind the reader of this thesis that the purpose of the study was to obtain a profound comprehension of the students' learning experiences in the accounting lecture hall and the implications they have on curriculum implementation. Expressed in the views of Terre Blanche, Kelly and Durrheim (2011) the meaning of human creations, words, actions and experiences can only be meaningfully established in light of the contexts in which they take place. As such, it was deemed necessary to make use of phenomenology. The researcher's methodological position is also in line with Creswell's (2013) suggestion.

Accordingly, Creswell (2013) propounds that the purpose of a phenomenological study is to describe the lived experiences of a group of people, the meaning they ascribe to these experiences and ultimately the essence of such experiences within a given context. In the same vein, Johnson and Christensen (2014) and Lindegger (2011) add that phenomenology is concerned with the self-world relationship. It assumes that individuals exist in a dialectical relationship with their lived world of experience and that the one cannot separate the self and the world, or subject and the object (Lindegger, 2011).

Thus, a qualitative phenomenological design was used to gain some phenomenal insights into the real learning experiences of first year accounting student teachers. It was also adopted to understand the reasons for realities or happenings that were discovered by this research. Phenomenology is in harmony with the research topic, its aims and objectives. In addition, the assumptions and theoretical perspectives of phenomenology are highly compatible with social constructivism and the idea of multiple intelligences as the theoretical frameworks within which the study was premised. McMillan and Schumacher (2010), White (2012) and Yin (2012) concur that the main benefit of phenomenology is that it allows the researcher to gain a deeper understanding of the phenomenon being studied through the views and perceptions of the participants within a defined context or setup.

Hence, McMillan and Schumacher (2010) claim that phenomenology describes meanings of people's lived experiences. This view is further endorsed by Leedy and Ormrod (2015) who add that a phenomenological study attempts to shade light on the perceptions and perspectives of people with regard to a given experience. As Leedy and Ormrod (2015) would have alluded to, this study attempted to answer the question

on what it is like to access the curriculum or to experience the implementation of the accounting curriculum for first year accounting student teachers. By analysing the multiple perspectives on the learning experiences in the accounting lecture hall, the researcher was able to make some generalisations of what it feels like to be in a first year accounting class for student teachers from an insider's perspective.

Terre Blanche, Durrheim and Painter (2011) note that a phenomenological paradigm is also known as the interpretive approach and allude that at the heart of phenomenology is the commitment to understand and comprehend human phenomena as they are lived in the context of given terms and categories. For instance, the specific statements which were presented to the first year accounting student teachers for rating were directly related to contextual learning activities embodied in the implementation of the accounting curriculum. In direct agreement with social constructivists, Briggs and Coleman (2007) and Tshabangu (2016) assert that phenomenologist views reality as social construction. This assertion is thus consistent with the assumptions of social constructivism which ascribes meaning and reality to social interactions and personal experiences. Lodico *et al.* (2010) also subscribe to this idea by adding that since phenomenology research paradigm assumes that there are multiple realities and that such realities are socially constructed, it can be viewed as taking a social constructivist approach.

The researcher is of the view that it is this aspect of phenomenology which makes it more of a qualitative oriented research paradigm. Slavin (2007) reinforces this view by further alluding that like social constructivist, phenomenologists believe that interaction with others result in different interpretations of experience. McMillan (2013) also confirm the above claims by noting that phenomenology assumes that there are multiple ways of interpreting a similar experience and that reality is made up of the meaning of the experience for each individual participant in the study. To this effect, Babbie (2013) points out that phenomenology emphasises that all individuals are constantly engaged in the process of making sense of their experiences. As such, people continuously interpret, create, ascribe meaning to and rationalise their actions.

From the various sources consulted on phenomenology, this study has noted and observed the strong presence of the key words and phrases used in formulating the purpose of a phenomenological study and in explaining what phenomenology is all

about. These are, to describe the lived experiences and meaning of a phenomenon, which have become synonymous. The persistent manner in which the various scholars on methodology mention these words and terms have had an undeniable and compelling effect on the researcher's perception of phenomenology. As such, the researcher is convinced that any revised definition and interpretation of a phenomenological study must be based around such keywords and phrases.

Therefore, this study views and defines a phenomenological study as an investigation which seeks to explore and describe the real life experiences of a group of individuals with regard to a similar phenomenon, experienced in a similar environment and the meaning these individuals ascribe to their experiences. It is a study in which the researcher attempts to understand meaning and experience from the perspectives of the participants. It is a research in which the researcher seeks to understand a specific topic or concept through the eyes and opinions on the people involved in the study.

- **Characteristics and theoretical assumptions of phenomenology**

Creswell (2013) and McMillan and Schumacher (2010) further stress that to obtain a better understanding of the participants' meaning of their lived experiences, the researcher ought to suspend or bracket any preconceived ideas about the study's phenomenon. This explains why Litchman (2013) warns that bracketing is a key concept in phenomenology. Slavin (2007), views this bracketing as suspending one's preconceived ideas or feelings about a specific study phenomenon. To this effect, Lindegger (2011) adds that the key component of phenomenology is a well-orchestrated description of the participants' views of their lived experienced based on suspension of all the preconceptions the researcher brings to the study.

Lodico *et al.* (2010) point out that phenomenology is based on existential and phenomenological principles and maintains that individuals seek meaning in their lives. Phenomenology emphasises that social, political and historical contexts influence people's experiences and the meaning they derive from them. Briggs and Coleman (2007) and Gray (2014) concur that phenomenology assumes that attempts and measures to understand social reality should be based on the people's experiences of that social reality. Thus, any understanding of the implications of the students' learning experiences on curriculum implementation should thus be informed by the students' experiences in the accounting lecture halls.

Furthermore, Johnson and Christensen (2014) argue that the main characteristic of a phenomenological study is that the researcher is interested in understanding how people experience a phenomenon from each person's perspective. The primary goal of the researcher is to get into the inner world of each person to fully understand their perceptions of the experience. Phenomenology seeks the opinions and subjective accounts and interpretations of the study participants. In the views of Denscombe (2013), phenomenology deals with peoples' perceptions, feelings, meanings, beliefs, attitudes and emotions. This explains why the researcher developed some specific statements that were based on the students' real learning experiences and their perceptions of the learning activities they encountered. The use of a seven-point sematic differential scale allowed students to rate these specific variables based on their lived experiences and perceptions. To some extent, it ensured the revelation of more accurate and unbiased opinions of what transpired in the accounting lecture hall.

A detailed summary of the characteristics and theoretical assumptions of phenomenology is presented by Briggs and Coleman (2007); Denscombe (2013); Gray (2014) and van Wyk (2015) In a united voice, they note that phenomenology emphasizes subjectivity and opposed to objectivity, description more that analysis, interpretation rather than measurement and agency rather than structure. Of outmost interest to phenomenology is the peoples' lived experiences, everyday world, multiple realities, suspension of common sense and social construction of reality.

The upcoming paragraphs provide the rationale and justification for adopting a phenomenological research paradigm in this study.

- **The rationale and justification for a phenomenological research paradigm in this study**

As noted by Johnson and Christensen (2014), the phenomenological paradigm has been used in various studies to investigate numerous issues and concepts in social sciences. Among others, Williamson, Pollio and Hood (2002) used this research paradigm in their study which was based on a phenomenological analysis of the anointing among religious serpent handlers. Bailey, Dunham and Kral (2000) used it in their investigation on factor structure of the grief experience questionnaires. Francis (2015) applied a phenomenological research paradigm in a study on learning how to become a teacher. Omizo and Omizo (1990) investigated children and stress using a

phenomenological approach. In their investigation on phenomenology and the meaning of aging for young and old adults, Adama-Price, Henley and Hale (1998) adopted a phenomenological research paradigm. Smith (1998) also used the same research design in their investigation on the problem drinker's lived experience of suffering

Most recently, van Wyk (2015) has contended that phenomenology has transformed and influenced various aspects and approaches in education. For instance, it has promoted participatory teaching strategies which have resulted in student or learner centred learning. In student centred teaching and learning environments, the phenomenological perceptions of students and their needs play an important role in the lecturer's lesson planning and delivery process of the subject content. Killen (2016) concurs with Denscombe (2013) that this explains why the banking concept of education propagated by Paulo Freire (1970) in which students are regarded as objects where educators are viewed as sources of knowledge and information has been diminished over the recent years, even in schools located in predominantly conservative communities such as in Africa's rural region.

This study took a phenomenological design to investigate and describe the remembered lived experiences and memories of the first year accounting student teachers about their learning experiences. McMillan and Schumacher (2010) maintain that phenomenology strives to understand and clarify the people's perceptions and experiences, with particular reference to the meaning they ascribe to events, concepts and issues. In the same vein, Slavin (2007) argues that the main purpose of phenomenology is to gain access into the world of study participants and to understand their perspectives. Lodico *et al.* (2010) contend that a phenomenological approach acknowledges that while the students are sitting in the same classroom, with the same lecturer, how they perceive the reality of their learning experience is very different. Each student brings a history of personal experiences, expectations, attitudes, behaviour and emotions, all of which influence how they view and perceive their shared learning experience. This view is consistent with constructivist learning as pioneered by Vygostky (1978; 1979).

The researcher wanted to understand the meaning which first year accounting student teachers ascribe to their learning experiences and the implications these learning

experiences have on the implementation of the Accounting curriculum. This knowledge is highly important in any attempt to implement the curriculum through student centred approaches which support their learning and which are also conscious to their needs. It was also a way of reflecting into and reviewing the current approaches used to implement the curriculum, as suggested by Killen (2016).

- **How phenomenology as an interpretive approach contributed to this study**

Based on the characteristics and theoretical assumptions of phenomenology identified above, it would seem logical and obvious to suggest that its value has been derived from them. The proponents of phenomenology argue that it is very economical and suitable for small scale research where there is very limited budget and the researcher is the main resource. Denscombe (2013) argues that it is usually carried out in specific places such as schools and universities which give the findings a contextual attachment. According to Terre Blanche *et al.* (2011), the researcher is the primary instrument for both data collection and analysis. Similarly, Denscombe (2013) and Lodico *et al.* (2010) suggest that a phenomenological study basically relies on in-depth interviews and does not need expensive or technologically sophisticated equipment for data collection and analysis.

These claims are vindicated by the fact that this investigation was carried out at a university of technology and involved one hundred and twenty-one students first year accounting student teachers. The research was carried out using a questionnaire and some focus group interviews, both of which were administered by the researcher. Moreover, the thematic analysis of data did not require the researcher to consult experts in qualitative data analysis, since it was mainly about identifying major themes that emerged from the interviews. Some advocates of phenomenology also indicate that the description of experiences can paint and portray an interesting story and has the ability to describe people's experiences in ways that are easily accessible and interesting to a wider audience or a variety of readers (Denscombe, 2013). In the same breadth, McMillian and Schumacher (2010) point out that a phenomenology enhances and increases the readers' understanding of the lived experiences of study's participants. This can lead to empathy which galvanizes the readers to take action to improve the plight of the participants. To this effect, the researcher hopes to help

improve the students' learning experiences by giving those involved in curriculum implementation vital feedback from the students themselves.

The research methodology, population and sampling techniques will now be discussed.

3.5 METHODOLOGY

Population and sampling are the first components of research methodology the will be explained below.

- **Population and Sampling**

Owing to the fact that every study involves a specific group of people, some particular participants and an explanation of how they were selected, it is customary for the researcher to state the immediate study population and sample as well as the sampling technique that was used. As such, the following paragraphs provide the definitions of population and sample in the context of this study.

3.5.1 Population

A significant number of scholars have expressed their views on the meaning of population in research in a generically similar voice. They are unanimous that population is all the individuals to whom the researcher wants to generalise findings from the study sample (Fraenkel *et al.* 2015; Gall *et al*. 2014; Johnson and Christensen 2014 and McMillian and Schumacher 2010). Durrheim (2011) holds a more holistic view of population which is a larger group from which the study sample is drawn and to which the researcher wants to generalise the findings of the study. Kumar (2014) believes that a population is the larger group from which a sample is drawn, and that it is denoted by the letter *"N"*. Therefore, the population of this study was all the first year accounting student teachers at a university of technology.

However, Fraenkel *et al.* (2015) present a view on population which is very important and relevant to this study. Accordingly, Fraenkel *et al.* (2015) distinguish between two types of population. They differentiate between the target population, which is the actual population the researcher wishes to study and make some generalisations about. In this study, this would apply to all the one hundred and forty-two first year accounting Bachelor of Education Senior Phase and FET teaching student teachers before the pilot sample was taken into consideration. Fraenkel *et al*. (2015) proceed

to identify the researcher's ideal population, which in their perspective, is the accessible and actual population the researcher is able to generalise about. It is also called the researcher's realistic choice. After removing the twenty students who participated in the pilot study, the researcher had an ideal population of one hundred and twenty-two students. From these one hundred and twenty-two students, one student did not complete the questionnaire, leaving the researcher with the actual population of one hundred and twenty-one students.

It is common practice for researchers to narrow down the population of the study to the sample of the study when executing the actual study. As such, the sample of this study will now be discussed below.

3.5.2 Sample of the study

In the similar views of Kumar, (2014); Fraenkel *et al.* (2015) a sample is a subgroup of the population studied by the researcher to represent the study population. Creswell (2013) contends that it is a representative portion of the target population which the researcher purposefully selects to study and obtain some generalizations about study population. Leedy and Ormrod (2015) provide a very brief meaning by defining a sample as a subset of the total population while Durrheim (2011) defines it as elements that are included into the actual study. In the same vein, McMillan and Schumacher (2012) view it as a group of research participants from whom data is collected. Creswell (2013) regards a sample to be a subset of the population whose characteristics will be studied. More still, Somekh and Lewin (2005) view a sample as the individuals who are selected from the total population of the study to be included in data collection and participate in the study. Drawing from the definitions above, the researcher has defined a sample as a microcosm of the study's population.

This study had two samples. There was a sample for the respondents to the questionnaire and another one for the student teachers who participated in focus group interviews, both of which were drawn differently and separately from each other, using different sampling techniques. Fraenkel *et al.* (2015) further suggest that the sample of a study can also be the whole population of the study. This is true about the sample of the respondents to the questionnaire, which was the entire accessible population. The sample for the respondents was made up of all the 121 students who completed the questionnaires. The sample for the focus group interviews comprised

students who were randomly selected. These 48 students were divided into eight groups of six students each.

3.5.3 Sampling

Of all the scholarly definitions of sampling the researcher analysed, Kumar's (2014) version is accepted in its entirety because it is more compelling and comprehensive. Accordingly, Kumar (2014) defines sampling as the process of selecting a few elements from a bigger group, which is the study's population as the basis for predicting the prevalence of unknown information, situation or outcome regarding the whole group. In the same vein, Swain (2017) subscribes to the earlier views of Durrheim (2011) that sampling is the process of selecting cases to observe in a study. Other scholars such as Fraenkel *et al.* (2015) and Johnson and Christensen (2014) also share a similar view. Durrheim (2011) further notes that sampling involves decisions such as the people, events, behaviour and social processes to be observed.

As earlier alluded to, two types of sampling methods were used for the quantitative and qualitative phases of this study. These are discussed briefly below, starting with the sampling for the quantitative phase of the study.

3.5.3.1 Sampling for quantitative research phase

The researcher purposefully selected the first year accounting student teachers for the quantitative phase of the study because as argued by Ritchie *et al.* (2014), they share similar learning experiences, an aspect which enabled detailed exploration and understanding of their learning experiences and implications for curriculum implementation which the researcher sought to investigate. Furthermore, the research questions and objectives were based on them and it therefore made sense to employ purposeful sampling. In the opinions of Ritchie *et al.* (2014), the aim of purposive sampling is twofold. Firstly, it is to ensure that all the key constituencies that are relevant to the subject matter are adequately covered. Secondly, purposive sampling ensures that enough diversity is included within each of the key criteria. This provides for a sound, effective and meaningful exploration of the impact of the characteristic concerned.

Creswell (2013) suggests that the purposive sampling technique is the most compatible one with phenomenology and qualitative research and cautions that all the participants should have experienced the same phenomenon under investigation. All

the first year accounting student teachers are assumed to have been exposed to similar learning experiences in the learning environment. This was in line with Denscombe (2013) and McMillian and Schumacher's (2010) concur that purposive sampling is when the researcher selects subjects from the study population with certain characteristics or features that will be representative about the topic of interest

As such, purposive sampling was deemed to be the most appropriate sampling technique for the respondents to the questionnaire. The researcher used his judgement to choose a sample he believed could provide the necessary data required for the study. The researcher purposefully selected the first year accounting student teachers to participate in responding to items, statements and questions in the questionnaire because, as Lodico, Spaulding and Voegtle (2010) stated, they had key knowledge related to the study. In Creswell's (2013) analysis of purposive sampling, it implies that the researcher chooses to study certain individuals and study sites on their potential to purposefully inform and enhance sufficient understanding of the phenomena at the centre of the study and the problem being researched.

The sampling technique that was used for the qualitative strand of the study will now be discussed.

3.5.3.2 Sampling for qualitative research phase

The random sampling technique was used to draw the sample for the participants in focus group interviews. It is viewed by both Gall *et al.* (2014) and Johnson and Christensen (2014) as a sampling technique in which every member of the study population has an equal chance of selection. Scholars such as Durrheim (2011); Kumar (2014); McMillian and Schumacher (2010) and Swain (2017) collectively advance that simple random sampling is a sampling technique or procedure in which every member of the study population or subgroups has an equal and independent probability to be selected in the study. Durrheim (2011) concurs with Creswell (2013) and Leedy and Ormrod (2015) that this sampling technique is suitable for obtaining a representative sample from a larger population.

In choosing and making use of this sampling technique, the researcher was also mindful of Kumar's (2014) caution that when drawing a study sample from a study population, the researcher should always try to minimise and eliminate bias in the sampling process and to achieve maximum precision for the available resources. Thus

to ensure and guarantee the probability of inclusion and selection of every first year accounting student teacher who was in the accessible population, all the student numbers of the first year accounting teachers were written on small pieces of paper and thoroughly mixed in a box in front of all the students.

Thereafter, the researcher randomly picked up 48 pieces, one after the other, repeating the process of mixing the papers after every pick. The students whose student numbers appeared on those small pieces of paper were the ones who participated in the focus group interviews. The researcher was convinced that these students were an accurate reflection of the entire study population. It is also important to emphasise that as a central feature of random sampling, all the students presumably had equal and independent opportunities to be selected and this was not compromised in any way. In the following section, the researcher explains the study variables.

3.6 VARIABLES OF THE STUDY

As suggested by Durrheim (2011) and Leedy and Ormrod (2015), a variable is any particular characteristic or quality in a study that can assume two or more values. Fraenkel *et al.* (2015) believe that it is a concept or a norm that represents variation within a given population, such as motivation, achievement and gender. Kumar (2014) offers a broader view by defining it as an object, concept, image or perception that can be measured and can thus take different values, a property that takes various values and a symbol to which one can attach numerical values. Kumar (2014) sums up that a variable is a concept that can be measured with any of the recognised measurement scales. Similarly, Gall *et al*. (2014) define a variable as anything which the researcher wishes to study which has some degree of variability. They further view it as a quantitative expression of a construct, with each difference in the quantity denoting a variation in the magnitude of the construct.

Taking the above views into context, this study had two major variables embedded in the topic: *The learning experiences of First Year Accounting Student Teachers and Implications on Curriculum Implementation* which are measured by the questionnaire. These are the learning experiences of first year accounting student teachers and the approaches used in curriculum implementation. There is a tendency to distinguish between independent and dependent variables in any study.

3.6.1 Independent variables

As far as Durrheim (2011) and Leedy and Ormrod (2015) are concerned, the independent variable is a variable assumed by the researcher to be a possible cause of an effect, that it is the one which is directly manipulated by the researcher to determine its impact on the dependent variable. It is this characteristic of the independent variable which makes Kumar (2014) to call it a change variable, because accordingly, it is responsible for causing a change in a situation or phenomena. In the perspectives of Gall *et al.* (2014), an independent variable is the hypothesized cause while a dependent variable refers to the hypothesised effect.

The independent variable in this study was the approaches used in curriculum implementation. These were categorised either under guided instruction or social constructivism. It was hypothetically assumed that the approaches used by the lecturer to implement the curriculum influenced the first year accounting student teachers' learning experiences. This line of thought follows that how the curriculum is implemented influences how the students experience curriculum implementation in the end and their ultimate perceptions of their learning experiences.

3.6.2 Dependent variables

The dependent variable is perceived by Leedy and Ormrod (2015) to be the variable that is potentially influenced by the independent variable, while Kumar (2014) calls it a change or effect variable. Kumar (2014) argues that a dependent variable is the consequence, effect or impact of a change variable. Swain (2017) agrees with Durrheim (2011) that a dependent variable is a variable which is presumed to be influenced or affected by the independent variable. The dependent variable of this study was the learning experiences of the first year accounting student teachers. It was hypothesised that the learning experiences of the first year accounting student teachers was dependent on the approaches used to implement the curriculum. Thus the learning experiences of students are assumed to be a product of how the curriculum is implemented.

Still on the dependent variable, Fraenkel *et al.* (2015) bring into perspective an important point. They argue that it is also called the quantitative variable because it exists in some degree as opposed to all or none, along a continuum from less to more. As such, numerical numbers can be assigned to individuals or objects to indicate how

much of the variable they experience, encounter or possess. In the current study, the various items under the broad umbrella of multiple intelligences are the quantitative variables of the study. Students can allocate a numerical value between 1 and 7 to indicate the intensity of how they encounter, for instance, activities that promote their analytical, creative and practical intelligences, guided instruction and social constructivism. Thus these independent variables could be measured numerically.

In the following paragraph, the researcher will now explain the procedures that were followed to collect data at the research site, deliberating on issues such as access to the students and the date of collection.

3.7 DATA COLLECTION PROCEDURES

The quantitative data was collected at the research site which was a lecturer hall at a university of technology on Thursday, 27 September 2018 between 09:25 and 10:30. The students were encouraged to respond to all the items in the questionnaire. As such, all the 121 students responded to all the items. Babbie (2013) and Cohen *et al*. (2011) warn that social researchers need to obtain permission from the relevant authorities to access the research site and study participants.

The students were also informed of their right to voluntary participation and that they could withdraw their participation from the study any time during the investigation without having to face any negative consequences. The researcher made use of a fourth year B.Ed. student who acted as a field assistant. Together, they distributed the questionnaires to the students and the researcher explained to them how they were expected to respond to the statements and questions. They were also given adequate time to complete the questionnaires. The promoter of the researcher was also there to act as an independent observer.

All the students were encouraged to ask questions about words whose meaning they either did not understand or were not sure of. In support of how the questionnaire was administered in this study, Kumar (2014) indicates that the most ideal way to administer a questionnaire is to obtain a captive audience such as students in a university lecture hall. Endorsing this line of thought regarding the administration of a questionnaire, Babbie (2013) argues that it guarantees high response rate and also gives the researcher a personal contact with the respondents.

As such, all the students completed the questionnaire in the presence of the researcher and under his supervision. Kumar (2014) adds that this personal contact also enables the researcher to remind the respondents about the purpose, relevance and significance of the study. The researcher could also clarify any questions respondents had about certain words or terms in the questionnaire. Leedy and Ormrod (2015) also believe that administering the questionnaire to a captive audience is the quickest and economical way of data collection. It also important to note that as noted by Kumar (2014) and McMillan and Schumacher (2010), questionnaires offer the respondents greater anonymity since there is no direct face to face interaction between the researcher and the respondents. On this basis, the researcher can argue that to a higher degree, this study promoted the anonymity of the respondents.

As a token of appreciation for their time, effort and the opportunity cost, the researcher provided the respondents with some refreshments as they we completing the questionnaire. After all the students had finished completing the questionnaires, the researcher numbered them for capturing into a spreadsheet, one by one. The capturing was done by the field assistant, for whose labour was paid. After using descriptive and inferential statistics to analyse data from these questionnaires, the researcher developed some interview questions for the focus group interviews. These questions were based on the quantitative findings of this study hence the sequential explanatory mixed methods research design (cf. Figure 3.3). Similarly, the focus group interviews were conducted by the researcher, thereby maximising the benefits mentioned by Cohen *et al.* (2011). All the focus group interview sessions were recorded with permission from all the group members who participated in this research.

- **Data Collection instruments**

Data collection instruments are also referred to as research tools (Bitzer, 2017; Creswell, 2013 and Swain, 2017), which are defined by Leedy and Ormrod (2015) as a particular mechanism or strategy which the researcher uses to gather, manipulate and interpret data. Some scholars such as Bitzer (2017) and Johnson and Christensen (2014) use the term research methods to refer to data collection instruments. The researcher used questionnaires and focus group interviews to gather data. Both research instruments were designed and constructed by the researcher in light of the phenomena under investigation and literature review. These data collection

instruments will now be discussed in detail, starting with the construction of the questionnaire, its reliability and validity and then the focus group interviews.

3.7.1 The Multiple Intelligence and Constructivist Learning Questionnaire

In this section, the researcher discusses how the questionnaire was constructed and administered.

3.7.1.1 Construction of the Questionnaire

The researcher operationalised the theoretical assumptions of multiple intelligences, guided instruction and social constructivism into a series of eighty-six scaled statements which students had to score between one (not always) and seven (always). All these statements were derived from relevant literature as comprehensively discussed in Chapter two. Part A of the questionnaire consisted of independent variable items that required the biographical details of the respondents. The students had to indicate their gender and age. As indicated in Chapter one (cf. 1.5), it was hypothetically assumed that there was a relationship between gender and age, and multiple intelligences, guided instruction and social constructivism.

Part B of the questionnaire comprised of eighteen statements that collectively measured learning tasks that appeal to analytical intelligence (cf.2.4.2.1). All the six constructs of analytical intelligence were measured by three statements. This implies that there were three statements for learning tasks that required students to analyse, adopt a critical stance, judge, compare and contrast, evaluate and assess (cf. Appendix 3). In Part C of the questionnaire, there were eighteen statements that were meant to test the extent to which learning tasks promoted the creative intelligence of students (cf.2.4.2.2). Similarly, each of the six constructs on creative intelligence (create, invent, discover, predict, imagine if, and suppose that) was represented by three statements. Part D of the questionnaire was for practical intelligence and comprised eighteen statements. These statements measured the extent to which learning tasks promoted the practical intelligence of students (cf.2.4.2.3). Like the previous two types of multiple intelligences, each one of the six constructs of creative intelligence (apply, use, put into practice, implement, employ and render practical) was measured by three statements.

Since the study also sought to establish curriculum implementation approaches that are consistent with multiple intelligences, the questionnaire also had Part E. This

section of the questionnaire consisted of guided instruction and the four types of learning which are associated with it. These are the constructs of guided instruction which are, problem-based learning (analytical and application intelligence/skills), discovery learning (creative intelligence/skills), experimental learning (practical intelligence/skills) and constructivist learning (cf.2.4.4, cf.2.5, cf.2.8 and cf.2.8.4.) A group of twelve statements was developed, with three statements representing and measuring each one of the four constructs of guided instruction. The purpose of this part of the questionnaire was to measure the extent to which teaching and learning activities were conducted using the four identified guided instruction approaches.

Lastly, since social constructivism was the second theoretical framework whose assumptions underpinned the study, it was found necessary to measure the students' perceptions of Vygotsky's (1978 and 1986) perspective on teaching and learning (social constructivism). Therefore, to this effect, Part F was designed. This section comprised four major social constructivist approaches in curriculum implementation. These are cooperative learning, participative learning, scaffolding and practical learning. Each of the four approaches was represented and measured by five statements, resulting in a total of twenty statements for Part F of the questionnaire (cf.2.8 and cf.2.8.4). All these statements collectively measured the extent to which the students found social constructivist appealing to their learning needs and the extent to which the curriculum was implemented using social constructivist approaches.

The researcher's statistician used SPSS Version 25 to check whether the individual statements compiled by the researcher formed a homogeneous image of multiple intelligences, analytical intelligence, practical intelligence, creative intelligence, guided instruction and social constructivism. It is important to highlight that SPSS was also used to assess the reliability of the questionnaire and all its subscales. Using the Cronbach's Alpha, the statistician and researcher were able to measure the strength in the correlation between each statement and all the other statements. A figure was calculated from zero to one to measure how reliably the statements measured the extent to which the students encountered teaching and learning activities which promoted their analytical intelligence, practical intelligence and creative intelligence. It was also calculated to measure the extent to which teaching and learning activities were conducted using guided instruction and social constructivism. Maree (2016)

suggests that anything above .80 gives an adequately homogeneous reflection of the constructs (cf.3.9.1).

In Kumar's (2014) perspective, construction of the research instrument is a significant process in any study and which must be well premeditated. Informed by the sentiments of scholars such as Babbie (2013); Creswell (2013); Johnson and Christensen (2014) and Kumar (2014); the researcher developed a seven-point semantic differential scale, which in the perspectives of Johnson and Christensen (2014) is a continuum of possible responses which participants can choose from to indicate their responses. This scale was used to measure the students' perceptions on the extent to which they encountered teaching and learning activities which promoted the various types of intelligences. The students had to rate the frequency of encountering such teaching and learning activities from a numerical scale of one to seven, with one being not at all and seven representing always.

As argued by Leedy and Ormrod (2015), the use of a continuous scale expands the spectrum of statistical techniques that the researcher can apply to data. Fraenkel *et al.* (2015) and Kumar (2014) expand this view by indicating that an interval scale is relative in that it plots the positions or responses of respondents in relation to each other with regard to the magnitude of the measurement variable. Thus, it has a unit of measurement with an arbitrary starting and termination point (Kumar, 2014).

Over and above the statistics that can be used with nominal data, a continuous scale allows the researcher to determine the mean, median, mode and standard deviation (Leedy and Ormrod, 2015). The seven-point scale showed varying degrees of the students' perceptions and views towards the learning activities they encountered in the lecture hall and their overall learning experiences as they accessed the curriculum. Leedy and Ormrod (2015) add that the scale allows the researcher to rank data. The seven-point semantic differential scale which is presented below generated numerical data.

1 2 3 4 5 6 7

Not at all Always

In addition, the questionnaire had five subscales namely, analytical intelligence, creative intelligence, practical intelligence, guided instruction and social

constructivism. The first three subscales on multiple intelligences had six items while guided instruction had four items. Lastly, the subscale of social constructivism had ten items.

As can be depicted above, the first endpoint (1) is anchored by the phrase **"not at all"** while the other ending point (7) is anchored with the word *"always"*. Johnson and Christensen (2014) refer to it as a 7-point rating scale because the scale has a total of seven points representing possible responses. The odd number of points was in response to the suggestions of Johnson and Christensen (2014) who caution that when even numbers of points are used, the respondents may misinterpret one of the two centremost numbers to be representing the central or neutral point. In addition, Gall *et al.* (2014) and Johnson and Christensen (2014) suggest that rating scales whose points are less than four are not as reliable as those rating scales with more points. At the same time, rating scales with more than eleven points can be very confusing since the ability of most participants to make sound judgement when there are too many scale points becomes very compromised and limited.

When constructing the questionnaire, the researcher also observed the recommendations of Fraenkel *et al.* (2015) and Leedy and Ormrod (2015) about the nature of questions to be included in the questionnaire. Fraenkel *et al.* (2015) in particular recommend that a questionnaire must include closed ended questions to measure the opinions, attitudes, or perceptions about a given issue or topic. Leedy and Ormrod (2015) argue that closed ended questions can be used to obtain factual information. With closed ended questions Fraenkel *et al.* (2015) indicate that the respondents mark a value on the scale which best explains their answer. To this effect, Kumar (2014) adds that closed ended questions are easy to use, and code for the computer. Other scholars who advocate for the inclusion of closed ended questions in a questionnaire such as Durrheim (2011); McMillan (2010) and Wilson (2017) argue that they promote consistency and are also user friendly to the respondents.

Having discussed the questionnaire in terms of its construction, reliability and the various validation strategies that were adopted, for both the quantitative and qualitative data sets, the researcher will now discuss the focus group interviews as they were used in this study.

3.7.2 Interviews

In-depth focus group interviews are a qualitative strategy used in this study to explore the attitudes, perceptions and opinions of the first year accounting student teachers about their learning experiences. This was done through a free and fair open discussion between the researcher and the group members (in-depth discussions). The researcher used focus group interviews because as suggested by Creswell (2013) and Kelly (2011) they provided the researcher with a clear opportunity to know the first year accounting student teachers quite intimately to obtain a deep understanding of how they think and feel about their learning experiences.

3.7.2.1 Formulation of the focus group interview questions

The questions for the focus group interviews were significantly premised on the quantitative findings from descriptive and inferential statistics results. The rationale behind this was to triangulate the quantitative findings and interrogate the statistical conclusions arrived at regarding the hypotheses that were advanced in the study. In addition, the questions for the focus group interviews were also inspired by the views of Krause, Bochner, Duchesne and McMaugh (2010); Ormrod (2014a; 2014b); Pal, Pal and Tourani (2004); Sternberg (1985, 2002, 2008); Sternberg and Detterman (1986); Sternberg and Grigorenko (2007) and Vygotsky (1978) about the study phenomena. The views of these scholars were found to resonate substantially well with multiple intelligences, guided instruction, social constructivism and learning experiences which are at the centre of this study (cf.5.2.1; cf.5.2.2 and cf.5.2.3).

3.7.2.2 Execution of the focus group interviews

Finch *et al.* (2014) suggest that the size of focus group interviews must be between six and eight for one hour thirty minutes to two hours' sessions. As such, all focus group interviews comprised eight members and each session was one-hour long. Gall *et al*. (2014) and Johnson and Christensen (2014) concur that interviews can elicit rich data which is not possible with other data collection tools. Likewise, the focus group interviews were used to interrogate and cross examine data collected from the questionnaires. Focus group interviews involved the grouping of study participants into small manageable groups in which they discussed and responded to questions and engaged in brainstorming (Babbie 2013 and Francis 2015). In addition, focus group interviews were used to get the students' views and opinions on the curriculum

implementation approaches which they preferred the most, the nature and types of learning activities which they enjoyed the most and those they hated.

Moreover, through the use of focus group interviews, the researcher was able to obtain first-hand feedback on what it feels like and means to access the first year accounting curriculum for student teachers. By so doing, this strategy enabled the researcher to determine how the approaches used to implement the curriculum influence the students' learning experiences and how the implications these learning experiences have on curriculum implementation. Lastly, it was through the focus group interviews that the researcher was able to come up with recommendations, backed by relevant literature, on how future classes can be conducted to provide students with academically enabling and supportive learning experiences.

The role of the interviewer was not only to pose questions to the participants but also to create and enhance conditions that were suitable for fluid and spontaneous interactions (Finch *et al.* 2014). Subsequently, Finch *et al.* (2014) and Krueger and Casey (2009) argue that focus group interviews provide the participants with a more natural setting or environment because all the group members are concurrently influencing and influenced by other group members, just like in real life. Finch *et al.* (2014) further assert that this social context presents researchers with opportunities to see how ideas and language emerge in a more naturalistic environment and how they are shaped through conversation with other people. Furthermore, Finch *et al.* (2014) make an equally significant assertion which is very important to this phenomenological study. They argue that focus group interviews represent the social constructions, which are the normative influences, the collective as well as the individual self-identity and the collectively shared meanings, all of which are an integral part in how individuals experience, perceive, interpret and understand the world.

However, Kelly (2011) holds a different view but noting that while a focus group interview is a typical group of people who share a similar type of experience, the focus group is not a group that is naturally constituted as an existing social group. To put Kelly's (2011) views into context, the focus group interviews consisted of first year accounting student teachers who shared similar learning experiences and it could be ascertained convincingly that they knew each other in the normal course of their lives.

While there are debates on the extent to which knowledge, the truth and reality can be constructed during the interview process, the researcher believes that the focus group interviews used in this study were of tremendous value. To this effect, Gubrium and Holstein (2011) also acknowledge that through collaboration between the interviewer and the group members in the focus group interviews, knowledge is collectively and mutually constructed. In direct agreement with Gubrium and Holstein (2011), Killen (2011) adds that focus group interviews fit well with the constructivist and interpretivist approach to research.

The researcher was actively involved with the students in the focus group interviews in the development of data and meaning. Gubrium and Holstein (2011) argue that this makes the focus group interviews to be transformative for all the parties involved in the interview process. The researcher was not just a passive medium of transmitting knowledge and meaning, but an active member in their creation. Similarly, Yeo *et al.* (2014) contend that this perspective fits comfortably and very broadly with constructivism, interpretivism and the constructivist research model.

Gubrium and Holstein (2011) emphasise that the data collection process and construction of meaning in focus group interviews is interactional rather than neutral or one sided communication. Holloway and Jefferson (2013) add that this narrative psychosocial approach to qualitative focus group interviews aims to combine the social context of the student's life, which is the external aspects with the psychic, which is the inner life, through adopting a psychodynamic approach to data collection and analysis. Individual members of the focus group interviews presented their own views on their learning experiences and perceptions on the specific questions posed to them and also heard from the other group members. They listened and reflected on what other members said and in light of this, reaffirmed their own standpoint further. To this end, Berg and Lune (2012) suggest that focus group interviews are synergistic in nature because group interaction is used to generate data and obtain some insight into the study phenomena.

In the upcoming section, the researcher explains the reliability and validity of the research instruments and all the relevant measures that were taken to enhance and promote these concepts. These are explained in light of the scholarly work available on reliability and validity in social research.

3.8 RELIABILITY AND VALIDITY OF THE RESEARCH INSTRUMENTS

The magnitude, relevance and importance of the study findings lie in the reliability and validity of the research instruments that were developed and used by the researcher to collect data. In this regard, the research taken by the researcher in enhancing and promoting reliability and validity of the research instruments are essential. Therefore, this section explores the reliability and validity of the questionnaires and focus group interviews that were used in this study.

3.8.1 Reliability of the questionnaire

Several scholars have expressed their views on reliability of research instruments in social research, with particular reference to the various types of reliability. Among others, these include, Durrheim, (2011); Gall *et al*. (2014); Johnson and Christensen (2014); Knapp and Mueller (2010); Maree (2016); Gibson (2017); Maxwell (2017); Mentz and Botha (2012) and Pietersen and Maree (2016). All these scholars concur that a measure is regarded to be reliable to the extent that it is does not have measurement error.

Expressing their views on the definition of reliability, Gibson (2017) and Johnson and Christensen (2014) collectively regard reliability as the stability, repeatability and consistency of the test scores and study findings. Knapp and Mueller (2010) present a comprehensive overview of reliability by noting that reliability of a questionnaire focuses on the consistency of measurements from time to time, from form to form, from item to item and from one rater to another. This school of thought by Knapp and Mueller (2010) is also endorsed by Durrheim (2011) who adds that reliability is the extent to which the study findings can be repeated, which is applicable to both the respondent's scores on measures and to the findings of the study as a whole. Ormrod (2014b) goes on to remark that reliability is the degree to which an assessment or measurement tool yields or produces consistent information about the knowledge, skills or characteristics being assessed or measured.

Agreeing with the above sentiments, Maree (2016) maintains that reliability means that the results are consistent, all the time, even when they are collected on different occasions. This explanation is consistent with Leedy and Ormrod's (2015) perceptions of reliability. Accordingly, Leedy and Ormrod (2015) believe that reliability is the consistency of the measurement instrument in yielding consistent results when what

is being measured has not changed. In Durrheim's (2011) perspective, when measures are reliable, the study participants will score similarly and the same set of results will be obtained in replication of the study if the study itself is reliable.

On the other hand, Lewis, Ritchie, Ormston and Morrell (2014) define reliability as the replicability of research findings while Durrheim, (2011) views dependability as a synonym of reliability in a quantitative study. It looks at whether or not the study findings will be repeated if another study using similar methods was conducted. By the same token, Fraenkel *et al.* (2015) claim that reliability gives the researcher some confidence in the study findings by demonstrating consistency in the scores obtained for each study participant from one administration of the research instrument to the another and from one set of items to another.

However, Lewis *et al.* (2014) argue that constructivists have raised some concerns about the degree to which replicability can be achieved in qualitative research. Lewis *et al.* (2014) and Maxwell (2017) agree that constructivists argue that since there is no single reality to be captured, replication of study findings is an artificial goal to achieve. This line of thought suggests that reliability is more important and applicable in quantitative research than in qualitative research. In support of this diagnosis, Durrheim, (2011) adds that reliability is a highly valued criterion which demonstrates the accuracy and conclusiveness of the study findings by positivists because they believe that reality is stable and unchanging.

However, noting the underlying ontological and epistemological assumptions of social constructivism, interpretivism and phenomenology, which all emphasise that individuals tend to interpret and perceive similar experiences differently, the consistency of responses across the participants in this study attests to the reliability of the questionnaire. Maree (2016) further indicates that a research instrument is regarded as reliable if it is stable and consistent, which renders its predictability and accuracy. The more consistent and stable a research instrument is, the more reliable it is. Thus, as Maree (2016) argues, a measurement instrument is reliable to the extent that the repeat measurements made using the same instrument under identical conditions will yield similar results.

As explained earlier (cf.3.8), a pilot study was conducted to ensure the reliability of the questionnaire. The results of the actual study were similar to those of the pilot study.

Kumar (2014) and Maree (2016) remark that the less the difference between different measurement results, the more reliable is the research instrument. In the researcher's view, the reliability of the questionnaire is demonstrated and epitomised in these similar results between the pilot study and the actual study. Furthermore, the researcher was convinced that individual items and statements in the questionnaire conveyed consistent meaning and received a consistent interpretation from all the respondents. This is supported by the fact that there were no questions from the students while completing the questionnaire that could have been caused by the confusion of one or some of the items and statements. They all conveyed a similar and constant meaning and understanding. In the researcher's view, a questionnaire whose items and questions are clear and which prompt a similar understanding and interpretation is regarded as reliable because it is likely to produce consistent results.

Having considered all the various types of reliability of a research instrument, the researcher concluded that the internal reliability of the questionnaire was a significant indicator of the overall reliability of the findings of this study. Consequently, a statistical analysis of the data was conducted to determine the internal consistency reliability for the research instrument. The questionnaire had a total of eight-six items. Pietersen and Maree (2016) advise that when the researcher formulates multiple items, such as the eighty-six items formulated by the researcher to measure certain variables or constructs in the study, it is important to have a high degree of similarity among them since they are meant to measure a common variable or construct.

It is a measure of this extent of similarity which indicates internal consistency reliability for the questionnaire. Pietersen and Maree (2016) use the term internal consistency to refer to internal reliability while Mentz and Botha (2012) prefer to use the term construct reliability to refer to the same concept. In the views of Knapp and Mueller (2010) and Mentz and Botha (2012), internal reliability or construct reliability implies the degree to which the researcher's operationalisation of constructs taps into the actual theoretical variables intended to be measured.

To achieve the above, Knapp and Mueller (2010) and Pietersen and Maree (2016) unanimously recommend the use of Cronbach's alpha coefficient to measure internal reliability. This coefficient is premised on the inter-item correlations. Pietersen and Maree (2016) suggest that if there is a very strong correlation among the items, their

internal consistency will be high, resulting in the alpha coefficient of close to one. Similarly, if the items were formulated poorly, resulting in a very weak correlation among them, the alpha coefficient will be close to zero.

In their quest to guide researchers in interpreting internal consistency reliability for a research instrument Pietersen and Maree (2016), present the following guidelines in figure 3.5 below.

Figure 3.5: Guidelines for interpreting internal consistency reliability

Guided by the views of Pietersen and Maree (2016) on measurement of internal consistency reliability presented above, the internal reliability for the questionnaire was very high since the alpha coefficients for all the subscales were above .90. The internal consistency reliability of the entire questionnaire had a Cronbach's alpha coefficient of .98, which is very close to one. The other three major subscales of multiple intelligences, guided instruction and social constructivism achieved Cronbach's alpha coefficients of .97, .93 and .93 respectively. Likewise, the three subscales under multiple intelligences which are analytical intelligence, creative intelligence and practical intelligence had respective Cronbach's alpha coefficients of .91, .93 and .95.

However, it is important to indicate that the researcher formulated the items of the questionnaire after a rigorous and quite comprehensive review of literature on multiple intelligences, guided instruction and social constructivism. Additionally, the inclusion of every item in the questionnaire was supported by relevant literature to justify its inclusion, as reflected on the questionnaire (Appendix 3). The statistical results on the reliability of the entire questionnaire and its subscales have been presented below in

Table 3.1

Table 3.1: Summary of Reliability of the Scale and Subscales

Scales		Reliability Statistics	
		Cronbach's Alpha	No of Items
1	MICTLQ-Reliability of the whole Questionnaire	.98	86
Subscales			
2	Multiple Intelligences	.97	54
Subscales under Multiple Intelligences			
2.1	Analytical Intelligence	.91	18
2.2	Creative Intelligence	.93	18
2.3	Practical Intelligence	.95	18
3	Guided Instruction	.93	12
4	Social Constructivism	.93	20

As suggested by Johnson and Christensen (2014), questionnaires can be used to collect both qualitative and quantitative data, with the content and structure of the questionnaire informed by the research questions and objectives. Johnson and Christensen (2014) suggest that researchers use questionnaires to collect information from the study participants about their thoughts, values, attitudes, feelings, perceptions, behavioural intentions and personalities. All the eighty-six items formulated by the researcher sought to measure the learning experiences of first year accounting student teachers by presenting various learning related variables to them for rating.

In the following section, the researcher discusses the validity of the questionnaire.

3.8.2 Validity of the questionnaire

Ormrod (2014b) views validity as the extent to which a measurement or an assessment measures what it is intended to measure and allows appropriate inferences regarding the ability, skills or characteristics being tested or studied. It further refers to the extent to which a measurement or assessment involves similar content and format and manner of administration. Ormrod (2014b) cautions that the validity of findings from any study are very questionable and doubtful when the data collected has been continuously and consistently effected by irrelevant variables. In light of this caution, the researcher collected data for the pilot study and the actual

study in similar venues and under similar conditions to avoid any possible contamination of data.

In the work on validity, Maree (2016) argues that when viewed from the perspective of measurement procedure, validity refers to the ability of the research tool to measure what it is intended to measure. Both Kumar (2014) and Leedy and Ormrod (2015) comment further by adding that it is the extent to which the researcher has adequately measured what was initially intended to be measured. Subsequently, in the context of this study, it is the extent to which the researcher was able to measure the learning experiences of first year accounting student teachers in terms of the nature and types of learning tasks they encountered in the learning environment.

Ultimately, the researcher wanted to measure whether or not the learning activities incorporated the various constructs of multiple intelligences as well the approached used in curriculum implementation. Fraenkel *et al.* (2015) propose that the definition of validity is typified by questions on whether or not the researcher was able to measure what was thought to be measured. The various sections of the questionnaire had statements which sought to measure these above constructs and since the internal consistency reliability of the entire questionnaire was very high, it seems logical to suggest that the validity was also high.

In Kumar‘s (2014) views, there are two approaches that are sued to establish the validity of a research instrument in social sciences. Both approaches are grounded either in the logic that underpins the construction of the research instrument itself or statistical evidence which is generated using data collected by the research instrument in question. In this study, both approaches were used. Kumar (2014) explains that determining the validity of a research instrument through logic means that every item, question or statement included in the research instrument is justified in relation to the objectives of the study and purpose.

In this study, this justification was done through incorporating and making reference to the relevant literature on the theory of successful intelligences, guided instruction and social constructivism. The inclusion of relevant literature under each section of the questionnaire was meant to justify the validity of items, statements and questions under those respective sections. It is therefore the researcher’s view that every item, statement and question whose inclusion was justified and supported by relevant

literature was valid. All the items, statements and questions included in the questionnaire enjoyed the support of experts on the study phenomena, with Sternberg (1979; 2001; 2004; 2008; 2009) and Vygotsky (1978; 1988) being the most notable ones.

Referring to Kumar's (2014) criteria, the part of the aim of the researcher was to measure the learning experiences of first year accounting student teachers through identifying the nature and types of the teaching and learning activities they were exposed to. Additionally, on the premise of the available statistical evidence and the justification based on relevant literature, the researcher can boldly assert, with confidence and conviction that the items, statements and questions in the questionnaire were valid, thereby making the entire questionnaire valid as well. The statistical procedures produced hard evidence through determining and calculating the correlations between the items in the questionnaire and the outcome variables.

Leedy and Ormrod (2015) share similar views with Fraenkel *et al.* (2015) as they both define validity as the correctness, appropriateness, usefulness and meaningfulness of the various interferences made by the researcher from a given data set. They further advance that it is the defensibility of the inferences made by the researcher from data collected using a given research instrument.

Gibson (2017) subscribes to the earlier sentiments of Lewis *et al.* (2014) that validity refers to the precision and correctness of the research findings. Similarly, Johnson and Christensen (2014) note that validity refers to the correctness, truthfulness and accuracy of the inferences and interpretations made from the test scores. Durrheim (2011) believes that validity is synonymous with credibility, which according to Greenwood and Levin (2007) is the argument and processes that are necessary to convince the reader to trust the study findings. To this, Durrheim (2011) adds that validity is the extent to which the research conclusions are sound. As such, Fraenkel *et al.* (2015) maintain that a valid research instrument should enable the researcher to collect data which allows the researcher to make valid and warranted conclusions about the characteristics of the study's population or the phenomena under investigation.

Durrheim (2011) indicates that interpretivists and constructivists refute that reality is stable and unchanging. As such, they do not expect to yield similar results repeatedly.

They believe that study participants will always behave differently and express different views in changing set ups and contexts. Therefore, rather than emphasising validity, interpretivists and constructivists recommend that study findings must be dependable. Dependability is the extent to which the reader can be convinced about the originality of the study findings as presented and claimed by the researcher.

To achieve dependability, emphasis was put on rich and detailed descriptions that demonstrate how the participant's' actions and views are based on, developed out of contextual interaction. Open and honest statements that were obtained in the in depth focus group interviews were also be presented in data analysis and study findings in their original form to enhance dependability

The reliability of the interview instrument will now be discussed below.

3.8.3 Reliability of interview instrument

To ensure the reliability of the focus group interviews as a data collection instrument, all the questions discussed in the focus group interviews were purposefully derived from the results of the questionnaire. In addition, the inclusion of each question was then justified either by relevant literature or other relevant study variables and concepts. The researcher also analysed the responses that were provided by the students for each question in light of the original purpose of the question. To this effect, questions were further regarded as reliable when they solicited consistent responses that were in line with the purpose and justification of the question. For instance, question one on the focus group interviews sought to evaluate the students' understanding of multiple intelligences. The validity of this question was manifested in the consistency of responses and the uniformity of meaning derived by the students from the question.

3.8.4 Validity of the interview instrument

To promote the validity of the interview instrument, the researcher went back to the first year accounting student teachers with the interpretations and conclusions that emerged from the focus group interview for their verification. In addition, the focus group interview questions were derived from the themes and perspectives that emerged from the questionnaires and the students were regularly requested to elaborate more on them. Lastly, every focus group interview session was concluded by a summary of the main themes that came out of the discussions. All group members

had to agree on their accuracy and correctness before the group was dismissed. This way, the researcher ensured that data analysis, presentation and discussion were premised on collectively negotiated, endorsed and agreed themes and conclusions.

3.8.4.1 Validation strategies employed to ensure validity of the findings

As a point of departure, Creswell (2013) cautions that explaining researcher bias from the onset is essential in helping the reader to understand the researcher's philosophical position and other assumptions that can potentially affect the research process and subsequent findings. Some of these have been mentioned in the methodological limitations of the study (cf.1.2.3). When making such a declaration, Creswell (2013) advises researchers to refer to previous experiences, prejudices, biases and orientations that have significantly informed their approach to the study and interpretation of the study findings.

As noted by Lewis *et al.* (2014), validation refers to the degree to which validity of research evidence has been confirmed and substantiated. In the context of qualitative research and focus group interviews in particular, the process of validation is concerned with evaluating and assessing how well and accurate the meanings of participants have been captured and interpreted by the researcher. It looks at the concept of measurement validity. The researcher ensured validity of the findings through triangulation, peer debriefing and member checking.

- **Triangulation**

In the triangulation process of this study, the researcher corroborated research evidence produced by the questionnaire and the focus group interviews to provide more light on a perspective or a theme. As indicated by Kumar (2014) and supported by Maree (2016), the validity of a study is enhanced when the researcher identifies evidence from a different source of data to support a theme, pattern or perspective, which Creswell (2013) refers to as triangulation of information. Maree (2016) concludes that validity requires the researcher to verify and ascertain the degree to which the conclusions arrived at using qualitative sources can be substantiated by a quantitative perspective. Fraenkel *et al.* (2015) and Lewis *et al.* (2014) argue in one voice that triangulation is premised on the assumption that different sources of information will help to confirm and enhance the clarity of research findings.

Similarly, Kelly (2011) and Leedy and Ormrod (2015) allude that triangulation involves collecting data in many possible different ways and sources while Johnson and Christensen (2014) and Maree (2016) believe that triangulation is the use of multiple research methods in a single study. Denzin and Lincoln (2011); Kelly (2011) and Silverman (2017) concur that triangulation does not only assist in providing complex and diverse perspectives of looking at the same study phenomena, but also in enhancing and promoting the credibility of study findings by reinforcing the conclusions drawn from the various data sets collected. To this end, Maree (2016) and McMillan and Schumacher (2010) add that data triangulation is essential in promoting interpretive validity and determining the trustworthiness of data. According to Creswell, (2013), triangulation is when the researcher employs a number of different data sources, data collection methods, include co-researchers and theories to generate corroborating evidence.

- **Peer debriefing**

Creswell (2013) and Lewis *et al.* (2014) also make an important suggestion on how qualitative researchers can promote the validity of their study findings. As such, they collectively identify the significant role a peer debriefer, who Lincoln, Lynham and Guba (2011) view as the devil's advocate in enhancing the validity of the findings. Both Creswell (2013) and Lincoln *et al.* (2011) are unanimous that a peer debriefer in a study promotes the researcher's honesty, seriously interrogates the researcher about research methods, meanings and interpretation of findings and lastly, provides the researcher with an opportunity for reflection. Like Creswell (2013), Fraenkel *et al.* (2015) believe that a peer reviewer can play an important role in enhancing the validity of the study findings and therefore refer to them as "critical colleagues".

This study did not make use of a peer debriefer in principle for the purpose of promoting validity. However, the researcher is convinced that the study promoter played the exact role of a debriefer. This is because over and above his guidance and role as a promoter, he was an independent observer and critique of the study process. Furthermore, he did not accept at face value everything the researcher mentioned in terms of data collection and analysis. During the process of questionnaire construction, he played an important role in making sure that every question in the questionnaire was justified and relevant. The questionnaire of this study was

administered in his presence, for verification purposes and he inspected the completed questionnaires before their data were captured by the researcher.

- **Member Checking**

Gall *et al.* (2014); Lewis *et al.* (2014) and Lincoln *et al.* (2011) are unanimous that member checking is an equally important process towards promoting and enhancing the validity of the study findings. Fraenkel *et al.* (2015) agree that taking the study findings back to the study participants is an important strategy for establishing the credibility of study findings. Both Lewis *et al.* (2014) and Lincoln *et al.* (2011) stress that member checking is an important means to identify and eradicate any tendencies to either place too much emphasis on the significance of particular findings or neglect negative findings that are not consistent with the researcher's scheme of interpretation. Johnson and Christensen (2014) add that member checking is also called participant feedback and that it helps the researcher to clear up areas of misunderstandings.

Creswell (2013) notes that by member checking, the researcher obtains the views of the participants on the credibility and the findings and the interpretations made by the researcher. Denzin and Lincoln (2011) and Lincoln (2009) speak in a united accord that member checking is one of the most important technique for promoting credibility. Denzin and Lincoln (2011) and Creswell (2013) concur that at the heart of member checking, is the practice of taking back the to the participants all the analysis, interpretations and conclusions that were arrived at from the data that was collected from them. By so doing, Creswell (2013) argues that member checking gives the study participants opportunities to judge the accuracy and credibility of the interpretations and conclusions about them. To this effect, Gall *et al.* (2014) conclude that member checking increases the authenticity of the study findings.

The following section looks at the pilot of the study through which the questionnaire was tested

3.9 PILOT STUDY

Van der Riet and Durrheim (2011) view a pilot study as a preliminary study involving a very small sample of the study population whose purpose is to help the researcher in identifying possible problems related to the research design, especially the research instruments. In the same breadth, Kumar (2014) argues that it is done to test the data

collection instruments before using them for the actual data collection. Fraenkel *et al.* (2015) add that these problems can be ambiguous, unclear choices and poorly worded questions. In this way, Fraenkel *et al.* (2015) believe that a pilot study can reveal to the researcher whether or not the research instruments are clear. Put differently by Leedy and Ormrod (2015), a pilot study allows the researcher to identify weaknesses and correct them accordingly. To this effect, Leedy and Ormrod (2015) maintain that a pilot study is done to enhance the reliability and validity of the study's findings.

Similarly, Kumar (2014) stresses that the purpose of a pilot study is not to collect data but to identify the possible challenges which respondents may encounter in interpreting and understanding questions and statements. Thus when conducting the pilot study, the aim of the researcher was to determine if the respondents would encounter problems in understanding the wording of the statements and questions, the appropriateness of the meaning they conveyed, whether different respondents interpreted a question or statement differently and lastly, to determine whether their interpretation was contrary to what was meant to be communicated. The reliability and validity of this study were greatly enhanced by the pilot study because it presented the researcher with some phenomena insight into the actual data collection process.

Kumar (2014) suggests that it is necessary to re-consider the wording and sometimes the phrasing of questions and statements to make them clearer and less ambiguous if the respondents encounter problems during the pilot study. By using a host of synonyms on key words and phrases, the researcher eliminated any possible misinterpretations and misunderstandings. Therefore, there was no need to change any question or statement. In light of the sentiments by Leedy and Ormrod (2015), the researcher went on to conduct the actual study with some relatively high levels of confidence in the reliability and validity of the Multiple Intelligence and Constructivist Learning Questionnaire (MICLQ).

The researcher therefore views a pilot study as a test of the chosen research design, together with the research instruments. It is a dress rehearsal of the main investigation which involves a smaller portion of the study population. The pilot study was conducted using twenty students who were randomly selected from the study population. The data was then analysed using descriptive statistics to determine the reliability and validity of the MICLQ. To avoid possible contamination of data for the actual study,

these twenty students were excluded from the main research. This was also in line with the remarks of Kumar (2014) that the group on which the pilot study is conducted cannot participate further in the same processes again during the actual data collection.

The Cronbach's alpha of the pilot study had a coefficient of .98, which is very close to one. The other three major subscales of multiple intelligences, guided instruction and social constructivism achieved Cronbach's alpha coefficients of .97, .93 and .93 respectively. Likewise, the three subscales under multiple intelligences which are analytical intelligence, creative intelligence and practical intelligence had respective Cronbach's alpha coefficients of .91, .93 and .95.

The following section looks at the data analysis procedures that were used in this study.

3.10 DATA ANALYSIS PROCEDURES

As explained by Creswell (2014) and Schumacher (2010) a sequential explanatory mixed methods research design culminates in the collection and analysis of both quantitative and qualitative data. Henning, Hutter and Bailey (2011), caution that a research which uses multiple perspectives on the phenomena should include epistemological groundwork. This implies that the researcher should move forwards and backwards from the verbatim transcriptions to the theoretical orientations underlying the study. Denscombe (2013) suggests that the rationale for this ontological grounding is to enable the researcher to lead the reader to understanding of the meaning of the experiences being studied. Thus, as indicated by De Vos, Strydom, Fouche and Delport (2011) data analysis must enhance order and meaning to the data collected.

The following paragraphs will now discuss the techniques that were used for the analysis and interpretation of the two data sets, starting with the quantitative data.

3.10.1 Analysis of quantitative data

Quantitative data was analysed using descriptive and inferential statistics. These umbrella types of statistics are therefore presented with their relevant and applicable statistical techniques.

3.10.1.1 Descriptive statistics

The quantitative data was analysed using descriptive statistics, which according to Creswell (2010) is a form of statistics which is concerned with organising and summarising the data collected to make it more understandable through the use of univariate and bivariate analysis. It was used to analyse the ratings that were provided by the students to the individual statements pertaining to their learning experiences. Furthermore, descriptive statistics were used in this study to analyse the students' responses to the quantitative items. The frequency at which students encountered specific learning tasks which promote the various components of multiple intelligences was determined through descriptive statistics.

Similarly, Gall *et al*. (2014) descriptive statistics are numerical summaries of the distribution of scores obtained from a given sample using a given scale. Johnson and Christensen (2014) define them as statistics that are concerned with describing, summarising and explaining data**.** Leedy and Ormrod (2015) provide a more comprehensive analysis pointing out that descriptive statistics describe what the data looks like, how broadly it is spread and how two or more variables in the data are correlated. On the other hand, Jansen (2016) and Maree (2016) argue that descriptive statistics summarise data in three ways. These are, firstly, location or centrality which covers the mean, mode and median, which are called measures of central tendency. Secondly, there is dispersion, which deals with the range, variance and standard deviation. Jansen (2016) concurs with Leedy and Ormrod (2015) that dispersion looks at how data is spread around the average. Lastly, descriptive statistics summarise through measures of the shape, looking at its skewness and kurtosis.

Leedy and Ormrod (2016) note that descriptive statistics summarise the general nature of data obtained, for instance, the, extent to which two or more variables are related to each other and the degree to which variability exists within a given data set. Johnson and Christensen (2014) believe that the main goal of descriptive statistics is to describe, summarise, explain and make meaning or sense out of a given data set. To this effect, Neuman (2014) indicates that the most commonly used techniques of descriptive statistics are the arithmetic average, the median, standard deviation and the interquartile range.

Being a measure of central tendency for every study variable involved in the study, the mean was used to show the arithmetic average of the students' scores on the various constructs of multiple intelligences. Calculating the mean was necessary to evaluate the general perceptions of the students regarding their learning experiences, as far as multiple intelligences, guided instruction and social constructivism were concerned. The median was calculated to indicate the score at which half of the cases are higher and half are lower. It assisted the researcher to determine the extent to which the students felt they experienced the constructs of multiple intelligences, guided instruction and social constructivism. Lastly, to indicate the average distance between the scores and the mean, the standard deviation was calculated. It helped the researcher to quantify the degree of variation in the students' scores across the entire distribution.

Inferential statistics will now be discussed as one of the types of statistics that was used to analyse quantitative data in the correlational part of the study.

3.10.1.2 Inferential statistics

As noted by Creswell (2010) and Neuman (2014), inferential statistics refer to statistics that allow social researchers to make conclusions about some properties of the population from which the sample was drawn. Gall *et al.* (2014) note that inferential statistics deal with the use of statistical figures to make inferences regarding the characteristics of the study population based on the data collected from a study sample that was chosen to represent that population. In addition, Savin-Baden and Major (2013) add that it is a type of mathematical measurement which refers to the strength of the relationship and direction between independent and dependent variables, dealing with the error of bias or random error in the analysed data. Leedy and Ormrod (2016) argue that inferential statistics assist the researcher to make decisions and arrive at conclusions about the data collected.

The following statistical techniques for inferential statistics were used in this study.

- **The Pearson product-moment correlation coefficient**

As far as Pietersen and Maree (2016) are concerned, a Pearson product-moment correlation coefficient is a measure of the magnitude of the linear relationships between two quantitative variables. Gall *et al*. (2014) view Pearson correlation coefficient differently as a mathematical expression which gives information on the

direction and degree of the relationship between the scores obtained from a study sample on measures of two or more variables. On the other hand, Gray (2014) believes that the correlation coefficient is a numerical estimate of the extent to which point on the scatterplot cluster around the regression line and a number which summarises the dispersion of the scores on a scatterplot. Sunders *et al*. (2012) note that a correlation coefficient enables the researcher to quantify the strength of a linear relationship between two ranked variables.

Gay *et al.* (2011) highlight that with the correlation coefficient the aim of the researcher is to typically test the null hypothesis that the correlation coefficient between two variables in the whole study population represented by the study sample is zero. The larger the coefficient, the more accurate the researcher can be using the scores of individual participants on a measured variable in the study to predict their score on another measured variable. The researcher fully subscribes to the position taken by Gall *et al*. (2014) in defining a Pearson correlation coefficient. This is because unlike the views expressed by other scholars, this definition covers all the key terms and constructs one comes across when measuring the relationship between study variables using the Pearson correlation coefficient. The researcher disregards the other perspectives on the basis of their shallowness and lack of detail. The table below shows how the Pearson correlation coefficient was interpreted.

Table 3.2: Interpretation of the Pearson correlation coefficient

-1	**+1**
The minimum of the Pearson correlation coefficient	The maximum of the Pearson correlation coefficient
Indicates a negative relationship between the study variables, perceived by Gall *et al.* (2014) and Fraenkel *et al.* (2015) to imply that higher scores on a measured variable are associated with lower scores on the other measured variable	Indicates a positive relationship between the study variables, perceived by Gall *et al.* (2014) and Fraenkel *et al.* (2015) to imply that higher scores on a measured variable are associated with higher scores on the other measured variable
Strong negative linear relationship indicated by a value close to **-1**	Strong positive linear relationship indicated by a value close to **+1**

Table 3.2: Interpretation of the Pearson correlation coefficient, continues…

Negative perfect relationship indicated by **-1**	Positive perfect relationship indicated by **+1**

Source: Adapted from Pietersen and Maree (2016:264)

Coefficient Correlation	**Relationship between Multiple Intelligences and Curriculum Implementation Approaches**
Between +.35 and -.35	Weak or none
Between +.35 and +.65	Moderate
Between +.35 and -.65	
Between +.65 and -1.00	Strong
Between -.100 and -.65	

***Source:* Adapted from Gay, Mills and Airasian (2011:206)**

Gay *et al.* (2011) suggest that a relationship is perceived to be present if the scores within a certain range of one variable are associated with scores within a given range in the second variable. Consequently, Leedy and Ormrod (2015) provide a clearer interpretation by stating that a correlation is said to be present between two variables when a change in one variable results in a change in the other variable. For instance, when a change in curriculum implementation approach results in a change in the students' scores on multiple intelligences, or when the implementation of the curriculum using social constructivist approaches result in a change in the students' perceptions of their learning experiences. For instance, if curriculum implementation approaches and multiple intelligences are related, the high scores on multiple intelligences tend to correspond with high scores on curriculum implementation approaches.

Correlation analysis is a statistical procedure that was used by the researcher to describe the strength and direction of the linear relationship between age, gender and the students' scores on the specific constructs of multiple intelligences, guided instruction and social constructivism. Lastly, the strength and direction of the relationship between multiple intelligences and curriculum implementation was also measured using correlation analysis. The strength of the relationship between these

study variables was described as either none existent, weak, moderate or strong while the direction was described as either negative or positive.

Gay *et al.* (2011) suggest that a correlation coefficient of +-.60 or+-.70 is usually accepted as sufficient for group prediction purposes while a correlation coefficient of +-.80 and higher is adequate to make predictions for individual purposes. In a study in which a hypothesis is tested, such as the current study, Gay *et al.* (2011) maintain that the correlation should be interpreted on the basis of its statistical significance. Statistical significance refers to the probability that the statistical results would have occurred simply by chance.

T-tests will now be explained below as another statistical technique that used to analyse quantitative data.

- **T-test**

Guided by the statistical data analysis views of Baarda (2010) and Saunders, Lewis and Thornhill (2012) the *t*-test was done to test the differences in the mean scores of male and female students on multiple intelligences. In addition, this statistical procedure is also consistent with the sentiments of Pietersen and Maree (2016) who suggest that the *t*-test is used when the there are two independent groups which need to be compared based on their average score on a quantitative variable. In this study, such quantitative variables include analytical intelligence, creative intelligence, practical intelligence, guided instruction and social constructivism. The researcher wanted to find out if there is any difference between male and female student teachers in terms of their scores on multiple intelligences, guided instruction and social constructivism. They were asked to indicate on the semantic differential scale the extent to which they encountered teaching and learning activities which promote the various types of multiple intelligences. The options ranged from 1 (not at all) to 7 (always). The researcher then compared the sample means for male and female student teachers. Since there were two samples involved, it was necessary to determine the extent to which the differences in the sample means was likely to be a result of chance. To test this difference, the mean scores were transformed into a *t* value, which is an *independent sample t-test*. This was done using SPSS Version 25 with the function *independent samples t-test.*

3.10.1.3 Effect sizes

As argued by Pietersen and Maree (2017), one of the weaknesses of hypothesis testing is that it only reports on the existence of a significant correlation between the study variables, indicating the level of confidence. Other than that, hypothesis testing is silent on the practical significance of a finding with regard to a hypothesis being tested. This is matter of concern owing to the bearing which the size of the sample has on statistical significance. To mitigate this challenge, it was therefore necessary for the researcher to calculate the effect size.

As suggested by Cohen, Manion and Morrison (2018), the Pearson correlation coefficient was calculated by squaring the value of *r* (r^2) or simply put, by multiplying the value of *r* by itself (*r* x *r*).

The following formula was used to calculate the effect size for the *t*-test that was done on all the relevant hypotheses. These were from hypothesis 16 to hypothesis 27 (cf.1.5). The *t*-test was used to compare the scores of male and female student teachers on multiple intelligences, analytical intelligence, creative intelligence, practical intelligence, guided instruction and social constructivism.

$$\text{Eta Squared} = \frac{t^2}{t^2+(N1+N2-2)}$$

The effect size is used to explain the magnitude of the difference between two the groups that are being compared.

The following section explains how the qualitative data was analysed.

3.10.2 Analysis of qualitative data

In line with Kelly's (2011) advice on analysing data from focus group interviews, the researcher made provision for debriefing time soon after the interviews. During this debriefing time, the researcher went through all the notes while the session was still very fresh in his mind. Kelly (2011) adds that through debriefing, especially in cases where the sessions have been recorded, such as the current one, it is usually possible to reliably reconstruct the content and process of interview session.

3.10.2.1 Content analysis and qualitative coding

Data analysis in a qualitative research design is predominantly done through content analysis. Kumar (2014) notes that content analysis means analysing the contents of interviews to identify the main themes that emerge from the given responses by the respondents or from the observations made by the researcher. Henning *et al*. (2011) believe that content analysis refers to the counting of the frequencies of word appearances from the qualitative responses given and assigning them with codes for different themes. This process allows the researcher to analyse what is communicated in order to obtain insights from the participant's intentions. Henning *et al*. (2011) caution that content analysis should not be used merely to report facts but rather to interrogate the data provided. On the other hand, qualitative coding is when the collected data is divided into small units and categorised into the possible meanings that it infers (Lodico *et al*. 2010)

Noting that phenomenology assumes that there are some similarities on how individuals perceive and interpret similar experiences, which in this study was the similarity of their perceptions on the essential characteristic of their learning experiences, content analysis was found to be an important qualitative technique in analysing data from the focus group interviews. Since the study also sought to identify and describe this essential characteristic of their learning experiences, the researcher studies the multiple perception of the students on their learning experiences and then went on to identify common elements in their perceptions and reactions.

After completing the focus group interview sessions, the researcher went through students' perceptions and responses to identify those that were specifically meaningful to them and those that were relevant in describing their learning experiences. These statements were then classified into themes, which is basically the elements of the students' learning experiences which were found to be similar to each other. After this process, the researcher described the essential characteristics of the students' learning experiences that had been described by most students in the focus group interviews. These themes were then integrated into a narrative description of the study problem. The above processes and actions were specifically in line with Ritchie *et al.* (2014) who suggest that qualitative research is a naturalistic and interpretive approach which is concerned with exploring the learning experiences of first year accounting

student teachers from the eyes of those students, taking their perspectives and narratives

3.10.2.2 Triangulation

This refers to the use of multiple data collection instruments in a single study and comparing the results obtained from these multiple methods. Lodico *et al*. (2010) support the use of this technique by pointing out that it does not only increase the validity of the qualitative findings, but it also increases and improves the thoroughness, richness and understanding of the findings. The researcher used questionnaires in conjunction with focus group interviews. Since triangulation of data means that the interpretation is sourced from different points to build a complete of the story, the researcher therefore interpreted the students' responses on the questionnaires and the focus group interviews from different perspectives

Table 3.3: Data Analysis and representation in the phenomenological part of this study

Data analysis and representation	Explanation
Data organisation	Organised the questions and responses for the focus group interviews accordingly
Reading, memoing	Listened through the responses, make margin notes, form initial codes
Describing the data into codes and themes	Described personal experiences through epoche, describe essence of the learning experiences per individual participants in the focus group interviews
Classifying the data into codes and themes	Developed main and sub themes
	Developed a textural description of how the students were taught in terms of teaching and learning activities
Interpreting the data	Developed a structural description of how the first year accounting student teachers experienced curriculum implementation
	Developed the essence which the students derived from these experiences
Representing, visualising the data	Presented the narration of the essence of the experience in rich discussions

Source: Adapted from Creswell (2013:36)

The following section is dedicated to the principles of trustworthy and credibility of qualitative findings and how these principles were achieved in the study.

3.11 TRUSTWORTHINESS AND CREDIBILITY

Nieuwenhuis (2017) warns that while validity and reliability are crucial measures in quantitative research, trustworthiness is of outmost importance when it comes to qualitative research. Creswell (2016) remarks that trustworthiness is a key measure in

qualitative research as the verification of data gathered. In the same vein, Wagner, Kawulich and Garner (2012) point out that in qualitative research, the researcher deals with a phenomenon which cannot be precisely and accurately measured but an emerging reality which will be described and analysed. As such, it is of paramount importance that the researcher assesses and demonstrates trustworthiness in data collection and analysis and in the findings and conclusions of the study, especially in demonstrating to the reader how they were arrived at.

In the interest of trustworthiness, Creswell (2016) and Nieuwenhuis (2016) jointly propose the four criteria that should be considered in qualitative research. Thus in pursuit of trustworthiness, the qualitative strand of this study considered, credibility, transferability, dependability and confirmability. These will now be discussed individually, with practical demonstrations of how they were promoted and enhanced, starting with credibility.

3.11.1 Credibility

Expressing their views on credibility, Greenwood and Levin (2007) and Nieuwenhuis (2016) collectively define credibility as all the processes and arguments that are necessary to outsiders to trust the research results. This study viewed credibility as the extent to which the findings of the study can be believed, trusted and taken at face value. This is enhanced through detailed explanations and descriptions of the processes that were followed to generate data and arrive at certain conclusions.

To enhance and promote the credibility of the study findings, triangulation and respondent validation were done. To this effect, Silverman (2017) subscribes to the earlier methodological perspectives of Creswell (2014) and Denscombe (2013) that triangulation refers to the researcher's efforts to obtain a true reflection of the study phenomena through combining multiple perspectives and using different findings. It is important for the researcher to highlight that triangulation was done through exploring the learning experiences of first year accounting student teachers from the quantitative and qualitative research orientations, using multiple research instruments and lastly through findings in relevant literature.

In addition, all the questions that were included in the questionnaire and focus group interviews were supported by relevant literature, thereby justifying their inclusion. The promoter of this study also played a significant role in this regard through frequent

debriefing sessions throughout the entire study. The adoption of a research design that is compatible with the research questions of the study also ensures credibility. Furthermore, the theoretical frameworks in which this study is grounded are constructively aligned with the research questions, research paradigm, research design and research methodology. Most importantly, the researcher ensured that the theoretical frameworks are in harmony with the study phenomena in its entirety, which are the learning experiences of first year accounting student teachers and implications for curriculum implementation.

In the following section, the transferability of the study findings will now be discussed and demonstrated.

3.11.2 Transferability

In the perspectives of Denzin and Lincoln (2011); and Silverman (2017), transferability does not seek to perpetuate research claims that can be generalised, but calls upon the readers of the study findings to find connections between their own experiences and research and the elements of the study. Nieuwenhuis (2016) adds that the idea of transferability opposes the notion of generalisability of study findings. Transferability was also defined by the researcher as the degree to which the researcher makes it possible for the readers of study findings can relate to, identify with, or establish any links between themselves, their own research and the various constructs of the study.

Informed by the views of Silverman (2017) and Nieuwenhuis (2016) on how to promote transferability in qualitative research, the researcher made ensure that the study participants, being the first year accounting student teachers were typical to the context being studied, which is their learning experiences in the teaching and learning of accounting. The researcher also focused on the context to which the study findings were applicable, which is the learning environment in which the first year accounting student teachers access the accounting curriculum. The purposeful sampling method used in this study together with the thick descriptions of the students' learning experiences in the learning environment also increased the transferability of the study findings. In particular, the pre-determined selection of study participants ensured that the study participants were a microcosm of all the first year accounting student teachers in the immediate context of the learning experiences in the learning environment where they access the accounting curriculum.

Below is the discussion and demonstration of the dependability of the study findings.

3.11.3 Dependability

As argued by Kumar (2014); Leedy and Ormrod (2015) and Nieuwenhuis (2016) dependability is used instead of reliability in qualitative research. Denzin and Lincoln (2011) further maintain that while credibility and dependability are closely related, it is the researcher's demonstration of credibility which enhances and promotes dependability. This implies that dependability is an end product of credibility. Similarly, Durrheim (2011) indicates that interpretivists and constructivists refute that reality is stable and unchanging. As such, interpretivists do not expect to yield similar results repeatedly. They believe that study participants will always behave differently and express different views in changing set ups and contexts. Therefore, rather than emphasising validity, interpretivists and constructivists recommend that study findings must be dependable. Dependability is the extent to which the reader can be convinced about the originality of the study findings as presented and claimed by the researcher.

To ensure dependability, the researcher made sure that the research design, the execution of the study and the data collection processes and procedures were not only methodologically sound but were also revised constantly to suit the prevailing reality on the research site and the unique needs of the study participants. The researcher was guided by the research proposal that was approved by the Faculty Research and Innovation Committee (FRIC) of the Faculty of Humanities. A reflective journal was also kept to keep track record of all the finer details of the data collection processes and procedures. Most importantly, subject to the approval of the participants, all the focus group interview sessions were audio-recorded to increase the dependability of the study findings.

In the next section, the researcher discusses and demonstrates the confirmability of the study findings.

3.11.4 Confirmability

In the work of Nieuwenhuis (2016) and Silverman (2017) on qualitative research, confirmability is defined as the degree to which the study findings are informed and shaped by the participants of the study. Cohen and Mannion (2013) concur with Nieuwenhuis (2017) that confirmability refers to the extent of neutrality of the study

findings in terms of how they portray the views of the study participants. It is the researcher's understanding that the notion of conformability seeks to assure the readers that the study findings are free from researcher bias and that they have not been contaminated by the researcher's interest, motivation and predispositions. Confirmability is further interpreted by the researcher to be a declaration that the findings of the study represent the views of the participants with regard to the study phenomenon and not those of the researcher.

Guided by Creswell's (2013) views on how to ensure confirmability, the researcher declared any predispositions and beliefs regarding the study phenomena. Member checking, triangulation and debriefing by the study promoter were also used to enhance and ensure confirmability in this study. Furthermore, the researcher was guided by the research questions and aim of the study. By so doing, this eliminated the probability of any deviations and misrepresentations of the views of the first year accounting student teachers on their learning experiences and their implications on curriculum implementation. The study findings were also triangulated with those in literature review. Lastly, all methodological limitations, especially those encountered when collecting and analysing data have been stated explicitly.

The following discussion now focusses on the ethical considerations that were observed during the various phases of the study.

3.12 ETHICAL CONSIDERATIONS

Babbie (2013); Creswell (2012) and Fraenkel and Wallen (2009) warn researchers in social sciences to understand and uphold the universal principles held by researchers on what constitutes proper and improper conduct in scientific enquiry. This is also sustained by Creswell (2013) who claim that ethical guidelines and codes in social research emanate from core ethical principles such as respect for a person's rights and dignity, competency, integrity and responsibility. Consequently, this study observed and upheld all the relevant and applicable ethical considerations, throughout all its phases.

The researcher approached first year accounting student teachers and explained to them about the study and the extent of their involvement. This was done to obtain their informed written consent. It is one of the most important ethical issues to be observed

in research. Since the researcher was at that time a staff member at the university, who was also teaching the research population, access to them was not an issue.

Contrary to most authorities on ethical issues who have always opted to generalise them, Creswell, (2012 and 2013), Lincoln (2009) and Mertens and Ginsberg (2009) argue that ethical issues in social sciences must be observed in light of the various stages of the research process within which they occur and become relevant. To this effect, Creswell (2013) argues that ethical issues can be viewed as occurring before conducting the study, when commencing the study, during the data collection process, in data analysis and reporting and finally, in publishing the research findings.

The researcher also subscribes to this idea of categorising and differentiating ethical issues according to the specific phases of the study because an ethical issue which is crucial at one phase may not necessarily be applicable in a different phase of the same study. Therefore, the researcher will present these ethical issues according to various phases of the study when they were regarded as important. The researcher will also explain how these ethical issues were observed and dealt with in the study.

Table 3.4: Outline of Research Ethics that were applicable to the study and the various stages

Before the Research	During the research	After the Research
Unpressured decision making about participating in the study	Students' ability to exercise the right not to respond to question or say more when they did not want was made known to them	Right to privacy and anonymity respected in storage, access and reporting of the study findings was observed
Research was legitimate and independent	An unpressurised pace, time to think	Accurate and unbiased reporting and presentation of study findings
Explaining to students why they were selected to participate in the study	Feeling comfortable and at ease, valued and respected, not intimidated or judged	Opportunity for feedback on findings
Clear and worthwhile objectives and purpose	Opportunity for self-expression and for own views to be recorded	The findings of the study were used to benefit the students
Openness, honesty and being able to correct misunderstandings	Clear and relevant questions Left without negative feelings about participation	

***Source*: Adapted from Webster, Lewis, and Brown (2014)**

As explained in Chapter 1 the researcher ensured that all the applicable ethical guidelines were upheld and observed (cf. 1.11). Before conducting the study, the following were observed.

- I made a presentation of my research proposal to the Title Registration Committee (TRC) of the Faculty of Humanities for its approval. The research proposal was submitted to the Faculty Research and Innovation Committee (FRIC) of the Faculty of Humanities for approval (Appendix 1).
- Ethical clearance certificate number FRIC [D.FRC 18/3/4] was granted (Appendix 2).
- I carefully considered all possible consequences for all the B.Ed. Senior Phase and FET first year accounting students who participated in this study.
- I ensured that the consent of sampled students was voluntary and informed, without any implied deprivation or penalty for refusal to participate, and with regard to their privacy and dignity. I told the students that they could withdraw their participation at any stage of the study.
- I protected all the students from unwarranted physical or mental discomfort, distress, harm, danger or deprivation.
- I assured all the students that information obtained from them would be treated as private and confidential.
- I took credit only for work actually done in direct connection with scholarly and research endeavours and gave credit to the contributions made by others.

Over and above these ethical considerations, below are the full ethical considerations that were observed in this study and their methodological explanations thereto.

3.12.1 Informed Consent

Johnson and Christensen (2014) believe that informed consent is when research participants agree to participate in a study after the researcher has informed them about the purpose of the study, its procedures, risks, benefits, alternative procedures and the limits of confidentiality. Creswell (2013) suggests that this means that all possible or adequate information on the goal of the investigation, the procedures to be followed during the investigation, the likely advantages and disadvantages and risks which respondents may be exposed to must be disclosed to the respondents and participants and their representatives before they can decide on their participation in the study.

Informed consent implies that research participants have the right to be informed with regard to the nature and consequences of studies in which they are to be involved

(Denzin and Lincoln 2008). Webster, Lewis and Brown (2014) suggest that the research participants should be given adequate information that will enable them to make a well informed decision on whether or not to participate in the study. As such, the researcher thoroughly explained to the first year accounting student teachers the purpose and aims of the study, anticipated possible benefits for the study, the estimated time frame of the study and the organisation which funded the study and how the researcher is related to this funding organisation. The researcher also ensured that all the students were adequately informed about the details of the study including but not limited to their involvement in the study and the possible after effects of their participation.

During the phase of data collection, the following principle was upheld.

3.12.2 Voluntary participation

Participation in this research was entirely voluntary. No force, threats or any form of intimidation were used to get the participation of participants (Babbie, 2013). The participants also had the right to determine their participation in the study and could refuse to do so. All the students were informed that their participation was completely based on their volition (Leedy and Ormrod, 2015). No benefits would accrue them and no favours, rewards or incentives were promised to them for their participation.

When reporting data and publishing the research findings, the following principles of ethical consideration were observed:

3.12.3 Privacy, confidentiality and anonymity

This implies that all personal data obtained from the participants must be secured and get published behind a shield of anonymity (Denzin and Lincoln 2008). It further means that reasonable and due care is made to avoid passing information to those connected to the study participants and disclosing information in ways that expose the identity of those who gave it. As suggested by Babbie (2013) and Creswell (2013), the researcher used pseudo names to refer to the students and change those facts that directly identify them. The researcher ensured that once the information was collected, its source could not be identified. One of such measures was to advise the students not to write their names or student numbers on the questionnaires. The researcher

also used focus group participant codes instead of the students' real names when reporting on the qualitative findings.

3.13 SUMMARY

This chapter focused on the research paradigm, research design and the research methodology of the study, paying particular attention to the compatibility of every component under them with the theoretical, interpretive and philosophical frameworks that were adopted by the researcher. It has provided a logical and sequential presentation of the steps and process followed by the researcher in pursuit of knowledge on the learning experiences of the first year accounting student teachers and implications for curriculum implementation. Among others, these steps included, identifying and adopting study related conceptualisations of the various elements of research design and research methodology.

The next chapter will be devoted to the presentation and analysis of quantitative data.

CHAPTER IV

PRESENTATION AND ANALYSIS OF QUANTITATIVE DATA

4.1 INTRODUCTION

The purpose of this chapter is to present, analyse and interpret the quantitative data that was generated through a questionnaire. It presents the quantitative findings and conclusions from the descriptive and inferential statistical interpretation of the results. It presents descriptive data analyses through the mean, median and standard deviation. Furthermore, the chapter presents the results of Pearson product-moment correlation coefficient which has explored relationships amongst various variables and the *t*-test which has compared differences between groups. The following section provides biographical data of the students who responded to the questionnaire.

4.2 BIOGRAPHICAL DATA OF THE RESPONDENTS

The biographical data of the 121 students who participated in this study is presented in Table 4.1 below. This table presents the age and gender distribution of all the study participants. The breakdown of the study population to reflect gender was premised on the hypotheses which sought to investigate the correlation and relationship between gender and multiple intelligences, analytical intelligence, creative intelligence, practical intelligence, guided instruction and social constructivism. Out of the 121 participants of this study, 75 were females, representing 64% of the study population while males were 38, which accounted for 38% of the population

Table 4.1. A1.Gender * rAge Crosstabulation

Counts

		Age groups		**Total**	**Percentage**
		18-21 years old	22-36 years old		
A1.Gender	Male	23	23	**46**	38
	Female	47	28	**75**	62
Total		**70 (58%)**	**51 (42%)**	**121**	**100**

Table 4.1 shows that out of the one hundred and twenty-one students who participated in this study, seventy of them were aged 18-21, representing 58% of the entire study population while fifty-one students were in the 22-36 age group, which constituted 42% of the study population. The 18-21 age group falls under what Vygotsky (1978) refers to as young adults while the 22-36 age group falls under Vygotsky's (1978) category of mature adults. The differentiation of age was done to establish the effect of age on and its relationship with the study variables of multiple intelligences, analytical intelligence, creative intelligence, practical intelligence, guided instruction and social constructivism. The decision to categorise the study participants into two age groups was informed by the sentiments of Vygotsky (1978); Sternberg (1985) and Moran, Kornhaber and Gardener (2006). It was deemed necessary to divide the students into these two age groups to obtain an illuminating and comprehensive view of the statistical results of the Pearson correlations and *t* tests.

Figure 4.1 below shows the age distribution of the male participants in the study. As displayed by this figure, 50% of the males were in 18-21 age group while the other 50% fell in the 22-36 age group. There was an equal balance of age among the male respondents.

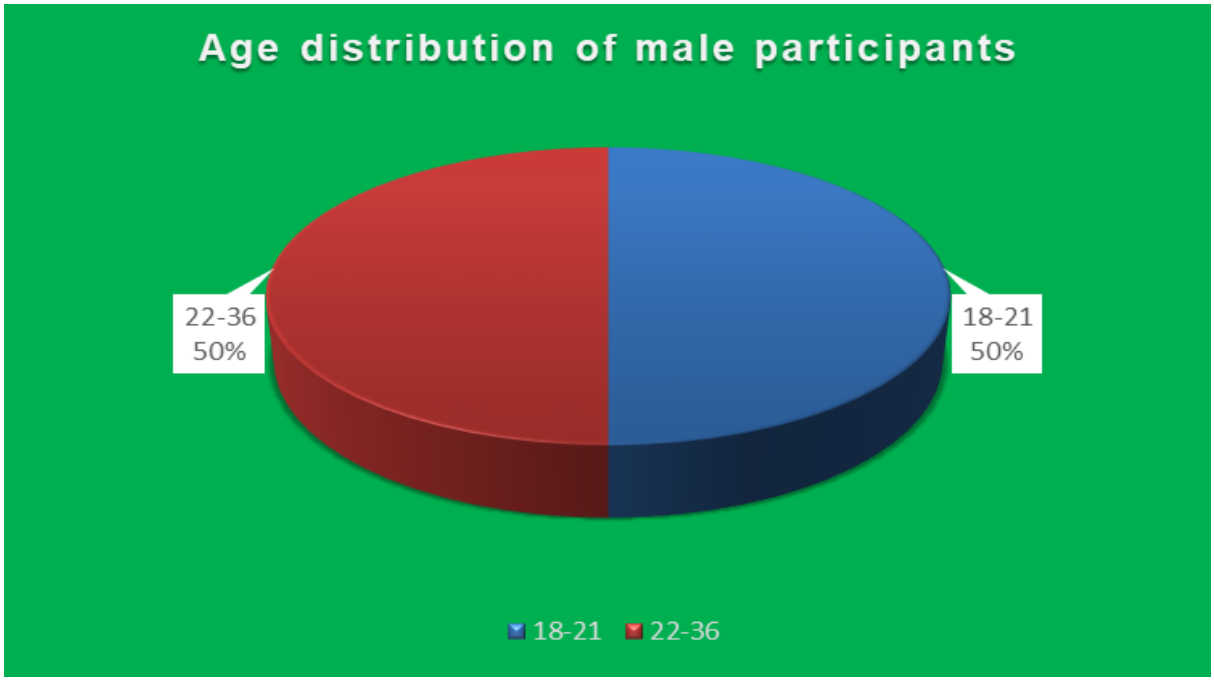

Figure 4.1: Age distribution of male participants

The distribution of the female participants in the study is presented in the following Figure 4.2.

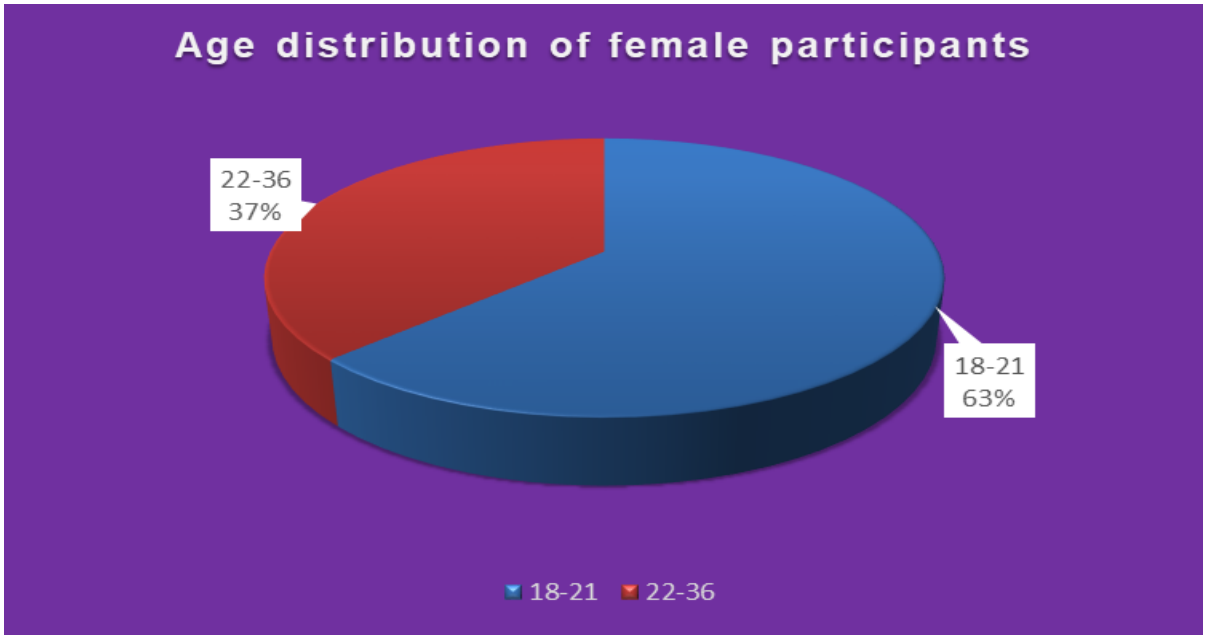

Figure 4.2: Age distibution of the female study participants

Analysis of data in Figure 4.2 shows that 63% of the females who responded to the questionnaire were in the 18 to 21 age group while 37% of them were in the 22 to 36 age group.

4.3 DESCRIPTIVE DATA ON MULTIPLE INTELLIGENCES, GUIDED INSTRUCTION AND SOCIAL CONSTRUCTIVISM

The following section presents descriptive statistics and interpretation of the individual variables of anayltical intelligence, creative intelligence, practical intelligence, guided instruction and social constructivism. As a point of reference, descriptive data will be analysed as follows:

- A mean value of 1 indicates that there are no students' learning experiences.
- Mean values of 2 or 3 indicate that students' learning experiences are modest.
- A mean value of 4 indicates that students' learning experiences are moderate.
- Mean values of 5 and 6 indicate that students' learning experiences are fairly high.
- A mean value of 7 indicates that students' learning experiences are high.
- A mean value which is less than the median reveals that the data is negatively skewed.
- A mean value which is more than the median indicates that the data is positively skewed.

- A standard deviation of below 2 indicates a small amount of variation from the mean or dispersion of data/responses. This implies that there is agreement amongst the respondents.
- A standard deviation of above 2 indicates a large amount of variation from the mean or dispersion of data/responses. This implies that there is disagreement amongst the respondents.

Table 4.2: Analytical Intelligence

Variable	Constructs	Questionnaire Items	Mean	Median	Standard Deviation
MULTIPLE INTELLIGENCE; *Analytical Intelligence*	Analyse	**B1.** I encounter learning tasks in accounting that require me to analyse information. **B5.** I am able to analyse accounting content. **B10.** I do well in learning activities that require me to analyse accounting content.	5.23	5.00	1.41
	Critique	**B3.** I encounter learning tasks in accounting that require me to be critical when dealing with them. B6 I can be critical of accounting content when dealing with learning tasks. **B12**. I do well in learning activities that require me to be a critique of accounting content.	**4.88**	5.00	1.41
	Judge	**B2** I encounter learning tasks in accounting that require me to make my own personal judgement about various scenarios. **B11** I trust ability to make sound and valid judgements in accounting. **B4**. I do well in accounting learning activities that require me to make judgements.	**4.68**	5.00	1.64
	Compare and Contrast	**B15**. I encounter learning tasks that require me to show the similarities and differences between items in accounting. **B7**. My accounting learning tasks promote my comparing and contrasting skills. **B13**. I do well in accounting learning activities that require me to compare and contrast.	5.15	5.33	1.42
	Evaluate	**B16**. I encounter accounting learning tasks that require me to make some evaluations within a given context. **B8**. I believe in my evaluative abilities in accounting. **B18**. I do well in accounting learning activities that require me to make some evaluations.	**4.91**	5.00	1.49
	Assess	**B17** I encounter accounting learning tasks that require me to make some assessments. **B14**. I am good at assessing various contexts in accounting. **B9**. I do well in accounting learning tasks that require me to use my assessment abilities.	**4.92**	5.00	1.51

Table 4.2 above presents data on teaching and learning activities that develop analytical intelligence of students.

Analysis of data in Table 4.2 shows that the students moderately encounter teaching and learning activities that require them to be critique (4.88), to judge (4.68), to evaluate (4.91) and to assess (4.92. This implies that the students moderately encounter teaching and learning activities which promote those types of analytical intelligence. The most experienced analytical intelligence constructs are analyse, (5.23) and compare and contrast (5.15). The data for ability to be critique, judge, evaluate and assess are less than 5.00, which means that the data for them is negatively skewed because all their means are less than the median.

In addition, as presented in the table below, all the standard deviations for the constructs under this variable are far from the mean, which implies that the students are not in agreement with regard to statements on teaching and learning activities that promote analytical intelligence. This finding is not consistent with the statistical results for the *t*-tests for both age and gender on analytical intelligence. The *t*-test found no differences on the scores of the study participants, either on the basis of their gender or age. The variation in the students' ratings justifies the inclusion of question 1 for the focus group interviews, which was meant to identify whether or not the students held similar views of the various types of intelligences. However, these differences are neither based on age nor gender.

However, noting that the students' scores were solely based on their individual perceptions of the teaching and learning activities, one would expect to find such differences as a testimony of diversity. These findings speak to the phenomenological part of this study which does not emphasise similarities on the perceptions and opinions of the study participants of their lived experiences. To create a more illuminating view of these variations on analytical intelligence, Table 4.3 below presents the standard deviation and the extent of variation. Analysis of data in Table 4.3 discloses that all in all, teaching and learning activities that appeal to analytical intelligence are moderately administered in the accounting lecture hall.

Table 4.3: Variations on the students' ratings of the extent to which learning activities promote their analytical intelligence

Variable	Constructs	Mean	Standard Deviation	Extent Of Variation
MULTIPLE INTELLIGENCE; *Analytical Intelligence*	Analyse	5.23	1.41	2.82
	Critique	**4.88**	1.41	2.82
	Judge	**4.68**	1.64	3.28
	Compare and Contrast	5.15	1.42	2.84
	Evaluate	**4.91**	1.49	2.98
	Assess	**4.92**	1.51	3.02

Table 4.4: Creative intelligence

Variable	Constructs		Questionnaire Items	Mean	Median	Standard Deviation
MULTIPLE INTELLIGENCE; *Creative Intelligence*	Create	**C7**	I encounter accounting learning tasks that require me to be creative.	**4.55**	4.67	1.52
		C12	I have creative ability in accounting content.			
		C2	I can come up with something new in accounting.			
	Invent	**C11**	I encounter accounting learning tasks that require me to design and produce new things.	**4.96**	5.00	1.52
		C8	I believe in my inventive skills in accounting.			
		C5	I enjoy doing accounting tasks that test my inventive skills.			
	Discover	**C10**	I encounter accounting learning tasks that require me to discover new knowledge	5.12	5.00	1.56
		C14	I use my prior knowledge to discover new knowledge in accounting.			
		C17	I am capable of doing accounting learning tasks that require me to arrive at new knowledge and conclusions.			
	Predict	**C3**	I encounter learning tasks that require me to make some predictions in accounting	**4.72**	5.00	1.53
		C15	I can make some correct and accurate predictions in accounting.			
		C18	I am good at making correct and accurate predictions in accounting.			
	Imagine if…	**C16**	I encounter learning tasks that require me to use my own imagination ability in accounting.	**4.92**	5.00	1.50
		C13	I make academically correct and relevant imaginations in accounting.			
		C6	I trust my academic imaginations to be correct and relevant in accounting.			
	Suppose that…	**C4**	I encounter accounting learning tasks that require me to make suppositions.	**4.47**	4.33	1.50
		C1	I can create different scenarios from which I make possible correct suppositions in accounting.			
		C9	I make correct suppositions in accounting.			

Table 4.4 above presents data on teaching and learning activities that develop creative intelligence of students. It also shows the variations of the students' scores regarding the extent to which they encountered learning activities which promote their creative intelligence.

Analysis of data in Table 4.4 reveals that creative intelligence is one of the most neglected type of intelligence in the learning environment. Except for the constructs of discovery and suppose that, the means for all the other constructs of create, invent, predict and imagine if are all less than the median. In this way, the quantitative finding suggests that the students rarely encounter teaching and learning activities in which they are required to create, invent, predict and make some suppositions within a given context in the learning area. This finding is also substantiated by the students' responses to the phenomenological questions posed to them in the focus group interviews which sought to establish the nature and types of learning activities they encountered in the module.

The data obtained for the constructs of creative intelligence is negatively skewed. However, the students are in agreement about their learning experiences under creative intelligence.

The next Table 4.5 presents data on students' scores on the various constructs of practical intelligence.

Analysis of data in Table 4.5 suggest the students are generally in agreement that they experience all the constructs related to practical intelligence in their teaching and learning activities. This is evidenced by all the means for the individual construct of practical intelligence which are all above 5. In this regard, reference can be made to the mean for the constructs of apply (5.15), which is above the median (5.00) and render practice (5.09), which is above the median, (5.00). The levels of consistency and agreement in the students' scores are exemplified by the small variations in the standard deviation.

The standard deviation on the individual constructs of practical intelligence indicates that the students have a shared understanding and view of what entails practical intelligence and can therefore unanimously identify them consistently.

Table 4.5: Practical intelligence

Variable	Constructs		Questionnaire Items	Mean	Median	Standard Deviation
MULTIPLE INTELLIGENCE; *Practical Intelligence*	Apply	**D1**	I encounter learning tasks in accounting that require me to apply what I have learnt.	5.15	5.00	1.43
		D10.	I am able to apply what I have learnt in the accounting classroom in different contexts.			
		D6	I am good at applying old knowledge to new situations in accounting.			
	Use	**D16**	I encounter learning tasks in accounting that require me to use previously acquired knowledge.	5.28	5.33	1.47
		D7	I can use previously acquired knowledge when dealing with new learning tasks in accounting.			
		D11	I enjoy doing accounting tasks that require me to use my previously acquired knowledge			
	Put into practice	**D13**	I encounter learning tasks in accounting that require me to put what I have learnt into practice.	5.31	5.33	1.46
		D2	I can practice what I have learned in the accounting classroom.			
		D8	I get higher marks in accounting tasks that require me to put into practice what I have learned in the classroom.			
	Implement	**D18**	I encounter learning tasks in accounting that require me to implement what I have learned in the classroom.	5.01	5.33	1.49
		D15	I am capable of implementing newly acquired skills and concepts in accounting learning tasks.			
		D3	I can successfully implement new skills and concepts in accounting learning tasks.			
	Employ	**D14**	I encounter learning tasks in accounting that require me to employ previous knowledge to deal with learning tasks.	5.23	5.33	1.48
		D4	I can correctly employ previous knowledge when dealing with accounting learning tasks.			
		D17	I am confident in ability to employ previous knowledge when dealing with new tasks in accounting.			
	Render practice	**D5**	I encounter learning tasks in accounting that require me transform theory into practice.	5.09	5.00	1.52
		D9	I can translate theory into practice in accounting.			
		D12	I enjoy relating theory with practice in accounting.			

Table 4.6 below presents presents data on teaching and learning activities that promote guided instruction as an alternative approach for developing multiple intelligences in students. Analysis of data in Table 4.6 indicates that the students are in agreement about their learning experiences as far as guided instruction is concerned. All the means for the constructs under guided instruction are less than the median. The students' responses to the 20 statements on the constructs relating to the variable of guided instruction revealed that the lecturer does not use teaching

strategies that are consistent with guided instruction, a core requirement for multiple intelligences. All the means to the individual statements are below 5, which implies that the curriculum in currently not being implemented in ways that promote the students' multiple intelligences.

Table 4.6: Guided instruction

Variable	Constructs		Questionnaire Items	Mean	Median	Standard Deviation
GUIDED INSTRUCTION	Problem-based (Application Intelligence skills)	E11	I encounter learning tasks in accounting which require me to analyse various accounting related scenarios to arrive at a solution.	4.47	4.67	1.78
		E9	The accounting lecturer promotes my learning through problem-based activities (context-based activities).			
		E4	The accounting lecturer gives me case studies in which I have to demonstrate my understanding of the content.			
	Discovery learning (Creative Intelligence skills)	E1	The accounting lecturer teaches me in ways that lead me to discover new knowledge in accounting	4.63	5.00	1.92
		E12	The accounting lecturer gives me learning scenarios in accounting which lead me to new conclusions about accounting.			
		E5	The accounting lecturer promotes my ability to arrive at my own conclusions about accounting issues rather than spoon feeding me.			
	Experimental learning(Practical intelligence skills)	E2	We learn through experiments in accounting.	4.55	4.67	1.79
		E10	My learning activities in accounting are practical.			
		E7	I can personally relate to the accounting content because of the way it is taught to me.			
	Constructivist learning	E8	The accounting lecturer creates opportunities for me to learn from other students through group work.	4.25	4.00	1.89
		E3	The accounting lecturer plays a guiding and facilitating role in the teaching and learning process of accounting.			
		E6	The accounting lecturer places me as a student at the core centre of teaching and learning activities.			

The researcher takes this finding as a matter of serious concern on the implementation of the accounting curriculum and the students' learning experiences as a whole.

Premised this finding, the researcher has identified the consistent and adequate use of guided instruction in curriculum implementation as an area of improvement. While the data is negatively skewed, the students' responses show that they moderately experience guided instruction in the accounting lecturer hall. This finding implies that guided instruction is not frequently used to implement the curriculum.

Table 4.7 below presents data on teaching activities that develop social constructivism in curriculum implementation.

Analysis of data in Table 4.7 reveals that the only cooperative learning and participative learning approaches are used in curriculum implementation. The means for these two variables are above 5, even though they are not more than the median. On the other hand, the means for scaffolding and practical learning are less than their respective medians, which implies that these approaches are not regularly used in curriculum implementation.

Table 4.7: A social constructivist approach in curriculum implementation

Variable	Constructs		Questionnaire Items	Mean	Median	Standard Deviation
Social constructivism	Cooperative Learning	F1	I get opportunities to interact with my classmates in the teaching and learning process of accounting.	5.04	5.20	1.65
		F19	I rely on the help and assistance of knowledgeable others to understand new content in accounting.			
		F4	My understanding of accounting improves through sharing and exchanging ideas with my classmates.			
		F9	I value the power of group learning as opposed to individual learning in accounting.			
		F12	My accounting lecturer makes me understand that teaching and learning of accounting is a shared responsibility.			
	Participative Learning	F17	My participation in the lesson makes learning of accounting more enjoyable.	5.13	5.40	1.62
		F5	I enjoy accounting lessons in which I am actively involved.			
		F8	My accounting lecturer empowers me to be an independent and autonomous student.			
		F13	My involvement in the lesson depends on my eagerness to learn and understand new accounting content.			
		F11	I value the contribution of individual students in the accounting lesson for it to be successful.			
		F16	Accounting content is presented from the known to the unknown to enhance better understanding.			
	Scaffolding	F6	When doing learning activities, I get examples related to the task on hand for guidance	**4.77**	4.80	1.60
		F10	I understand the learning content in accounting better when I am led to new insight into content by the lecturer.			
		F14	When doing difficult tasks, I am given leads and hints that enable me to accomplish the task successfully			
		F2	My accounting lecturer reduces support in learning activities as I gain more understanding on how accomplish them.			
		F15	I learn activities that are related to my daily experiences in the world.			
	Practical Learning	F3	What I experience in the world is taught in the accounting classes.	**4.81**	5.20	1.71
		F18	I am given opportunities to put into practice what I learn in the accounting classroom.			
		F7	Accounting is more understandable when it is related to my real life experiences.			
		F20	The accounting lecturer makes me see the link between theory and practice in accounting.			

The following section focusses on the inferential statistics of the study. It pays particular attention to the relationships amongst the various study variables as established by the Pearson product- moment correlation coefficient. It also presents data on differences between groups through the *t*-test. These statistical techniques are used to test various hypotheses (cf.1.5 and cf.1.10).

4.4 INFERENTIAL STATISTICS: CORRELATION

The following section focuses on the presentation, analysis and interpretation of interrelationships amongst multiple intelligences variables, guided instruction and social constructivism. It is also worth mentioning that the interpretation of the values of the correlation coefficient of all hypotheses which explore relationships among variables is based on the guidelines provided by Cohen, Manion and Morrison (2018). The following are the suggested guidelines for interpreting correlation coefficient values of between 0 and 1.

Figure 4.3: Guidelines for interpreting correlation coefficient values of between 0 and 1.

The key below shows the letters (keys) that have been used to refer to the null hypotheses and research hypotheses

Key:

H_o: is used to represent the null hypothesis

H_1: is used to represent the research hypothesis

The 15 research hypotheses for the Pearson product-moment correlation coefficient will now be presented together with their statistical results and interpretations.

4.4.1 The relationship between gender and multiple Intelligences

Table 4.8 below presents the null and research hypotheses on the relationship between gender and multiple intelligences.

Table 4.8: The relationship between gender and multiple Intelligences

Hypotheses 1: Gender and Multiple Intelligences

H_o: There is no statistically significant relationship between gender and multiple intelligences.

H_1: There is a statistically significant relationship between gender and multiple intelligences.

Correlations: Hypotheses 1

Descriptive Statistics

	Mean	Std. Deviation	N
A1.Gender	1,6198	,48745	121
Multiple Intelligences	268,1736	50,28878	121

Correlations

		A1.Gender	Multiple Intelligences
A1.Gender	Pearson Correlation	1	-,019
	Sig. (2-tailed)		,833
	N	121	121
Multiple Intelligences	Pearson Correlation	-,019	1
	Sig. (2-tailed)	,833	
	N	121	121

4.4.1.1 Interpretation of the relationship between gender and multiple Intelligences

The relationship between gender and multiple intelligences (as measured by the Multiple Intelligences and Constructivist Teaching and Learning Questionnaire (MICTLQ) was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality and homoscedasticity. Analysis of data in Table 4.8 shows that there was a weak negative correlation between the two variables (gender and multiple intelligences), r= -.019, n=121, p>.83. The p value of .83 indicates that there is no statistically significant relationship between gender and multiple intelligences. Consequently, the null hypothesis is accepted whilst the research hypothesis rejected.

The Coefficient of Determination

To present a vivid picture of the variance shared by gender and multiple intelligences, a coefficient of determination was calculated as, (.83 x .83) x 100= 68.89%. Thus, the Pearson correlation of .83 when squared has produced approximately 69 per cent shared variance. This implies that 69% of the variance on gender is shared with multiple intelligences.

Table 4.9 below provides hypotheses on the interrelationships between gender, analytical intelligence, creative intelligence and practical intelligence.

4.4.2 The interrelationships between gender, analytical intelligence, creative intelligence and practical intelligence

Table 4.9 below presents the null and research hypotheses on the interrelationships between gender, analytical intelligence, creative intelligence and practical intelligence

4.4.2.1 Interpretation of the relationship between gender and analytical intelligence

The relationship between gender and analytical intelligence (as measured by the Multiple Intelligences and Constructivist Teaching and Learning Questionnaire (MICTLQ) was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality and homoscedasticity. Analysis of data in Table 4.9 shows that there was very strong negative correlation between the two variables (gender and analytical intelligence), r= -.067, n=121, p>.47. The p value of .47 indicates that there is no statistically significant relationship between gender and analytical intelligence. On the basis of this statistical result, the null hypothesis is therefore accepted while the research hypothesis is rejected.

The Coefficient of Determination

In order to create a clear picture of the variance shared by gender and analytical intelligence, a coefficient of determination was calculated as, (.47 x .47) x 100= 22.09%. This implies that 22% of the variance on gender is shared with analytical intelligence.

The interpretation of the statistical the relationship between gender and creative intelligence will now be presented below.

Table 4.9: The relationship between gender, analytical intelligence, creative intelligence and practical intelligence

Hypotheses 2

Hypotheses for Pearson Correlation on Gender and Analytical Intelligence.

H_o: There is no statistically significant relationship between gender and analytical intelligence.

H_1: There is a statistically significant relationship between gender and analytical intelligence.

Hypotheses 3

Hypotheses for Pearson Correlation on Gender and Creative Intelligence.

H_o: There is no statistically significant relationship between gender and creative intelligence.

H_1: There is a statistically significant relationship between gender and creative intelligence.

Hypotheses 4

Hypotheses for Pearson Correlation on Gender and Practical Intelligence.

H_o: There is no statistically significant relationship between gender and practical intelligence.

H_1: There is a statistically significant relationship between gender and practical intelligence.

Correlations: Hypotheses 2, 3 & 4

Descriptive Statistics

	Mean	Std. Deviation	N
A1.Gender	1,6198	,48745	121
Analytical Intelligence	88,7438	16,61000	121
Creative Intelligence	86,2231	18,53757	121
Practical Intelligence	93,2066	19,52132	121

Correlations

		A1.Gender	Analytical Intelligence	Creative Intelligence	Practical Intelligence
A1.Gender	Pearson	1	-,067	-,003	,010
	Sig. (2-tailed)		,467	,970	,913
	N	121	121	121	121
Analytical Intelligence	Pearson	-,067	1	.801**	.708**
	Sig. (2-tailed)	,467		,000	,000
	N	121	121	121	121
Creative Intelligence	Pearson	-,003	.801**	1	.796**
	Sig. (2-tailed)	,970	,000		,000
	N	121	121	121	121
Practical Intelligence	Pearson	,010	.708**	.796**	1
	Sig. (2-tailed)	,913	,000	,000	
	N	121	121	121	121

**. Correlation is significant at the 0.01 level (2-tailed).

4.4.2.2 Interpretation of the relationship between gender and creative intelligence

The relationship between gender and creative intelligence (as measured by the Multiple Intelligences and Constructivist Teaching and Learning Questionnaire (MICTLQ) was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality and homoscedasticity. Analysis of data in Table 4.9 shows that there was a very weak negative correlation between the two variables (gender and creative intelligence), r= -.003, n=121, p>.97. The p value of .97 demonstrates that there is no statistically significant relationship between gender and creative intelligence. Owing to such a convincing statistical result, the null hypothesis is accepted whilst the research hypothesis is rejected.

The Coefficient of Determination

To present an illuminating view of the variance shared by gender and creative intelligence, a coefficient of determination was calculated as, (.97 x .97) x 100= 94.09%. This implies that approximately 94% of the variance in gender is shared with creative intelligence.

The interpretation of the statistical results the relationship between gender and practical intelligence will now be presented below.

4.4.2.3 Interpretation of the relationship between gender and practical intelligence

The relationship between gender and practical intelligence (as measured by the Multiple Intelligences and Constructivist Teaching and Learning Questionnaire (MICTLQ) was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality and homoscedasticity. Analysis of data in Table 4.9 shows that there was a weak positive correlation between the two variables (gender and practical intelligence), r= .10, n=121, p>.91. The p value of .91 shows that there is no statistically significant relationship between gender and practical intelligence. As such the null hypothesis which is thus accepted whilst the research hypothesis is rejected.

The Coefficient of Determination

As a strategy to portray a clearer picture of the variance shared by gender and practical intelligence, a coefficient of determination was calculated as, (.91 x .91) x 100= 82.81%. This implies that, the Pearson correlation of .91 when squared has produced approximately 83% shared variance between gender and practical intelligence.

Table 4.10 below presents the null and research hypotheses on the relationships between gender, guided instruction and social constructivism.

Table 4.10: The relationship between gender, guided instruction and social constructivism

Hypotheses 5

Hypotheses for Pearson Correlation on Gender and Guided Instruction.

H_o: There is no statistically significant relationship between gender and guided instruction.

H_1: There is a statistically significant relationship between gender and guided instruction.

Hypotheses 6

Hypotheses for Pearson Correlation on Gender and Social Constructivism.

H_o: There is no statistically significant relationship between gender and social constructivism.

H_1: There is a statistically significant relationship between gender and social constructivism.

Correlations: Hypotheses 5 & 6

Descriptive Statistics

	Mean	Std. Deviation	N
A1.Gender	1,6198	,48745	121
Guided Instruction	53,7107	16,60142	121
Social Constructivism	98,7438	21,97860	121

Correlations

		A1.Gender	Guided Instruction	Social Constructivism
A1.Gender	Pearson	1	,020	,138
	Sig. (2-tailed)		,825	,132
	N	121	121	121
Guided Instruction	Pearson	,020	1	.784**
	Sig. (2-tailed)	,825		,000
	N	121	121	121
Social Constructivism	Pearson	,138	.784**	1
	Sig. (2-tailed)	,132	,000	
	N	121	121	121

**. Correlation is significant at the 0.01 level (2-tailed).

4.4.3.1 Interpretation of the relationship between gender and guided instruction

The relationship between gender and guided instruction (as measured by the Multiple Intelligences and Constructivist Teaching and Learning Questionnaire (MICTLQ) was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality and homoscedasticity. Analysis of data in Table 4.10 shows that there was a weak positive correlation between the two variables (gender and guided instruction), r= .020, n=121, p>.83. The p value of .83 demonstrates that there is no statistically significant relationship between gender and guided instruction. As a result, the null hypothesis is accepted while the research hypothesis is rejected.

The Coefficient of Determination

To present a clearer picture of the variance shared by gender and guided instruction, a coefficient of determination was calculated as, (.83 x .83) x 100= 68.89%. This implies that, the Pearson correlation of .83 when squared produces approximately 69% shared variance.

The interpretation of the statistical results on the relationship between gender and social constructivism will now be presented.

4.4.3.2 Interpretation of the relationship between gender and social constructivism

The relationship between gender and social constructivism (as measured by the Multiple Intelligences and Constructivist Teaching and Learning Questionnaire (MICTLQ) was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality and homoscedasticity. Analysis of data in Table 4.10 shows that there was a small positive correlation between the two variables (gender and social constructivism), r= .14, n=121, p>.13. With a p value of .13, it shows that there is no statistically significant relationship between gender and social constructivism. As such, the null hypothesis is accepted while the research hypothesis is rejected.

The Coefficient of Determination

In an effort to portray a clear idea of the variance shared by gender and guided instruction, a coefficient of determination was calculated as, (.13 x .13) x 100= 1.69%. This implies that, the Pearson correlation of .13 when squared has produced a 2% shared variance between gender and guided instruction.

The interpretation of the relationship between age and multiple Intelligences will now be presented.

4.4.4 The relationship between age and multiple Intelligences

Table 4.11 below presents the null and research hypotheses on the relationship between age and multiple Intelligences.

Table 4.11: The relationship between age and multiple Intelligences

Hypotheses 7

Hypotheses for Pearson Correlation on Age and Multiple Intelligences.

H_o: There is no statistically significant relationship between age and multiple intelligences.

H_1: There is a statistically significant relationship between age and multiple intelligences.

Correlations: Hypotheses 7

Descriptive Statistics

	Mean	Std. Deviation	N
A2.Age	21,9256	3,45486	121
Multiple Intelligences	268,1736	50,28878	121

Correlations

		A2.Age	Multiple Intelligences
A2.Age	Pearson	1	-.194*
	Sig. (2-tailed)		,033
	N	121	121
Multiple Intelligences	Pearson	-.194*	1
	Sig. (2-tailed)	,033	
	N	121	121

*. Correlation is significant at the 0.05 level (2-tailed).

4.4.4.1 Interpretation of the relationship between age and multiple Intelligences

The relationship between age and multiple intelligences (as measured by the Multiple Intelligences and Constructivist Teaching and Learning Questionnaire (MICTLQ) was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality and homoscedasticity. Analysis of data in Table 4.11 shows that there was a medium negative correlation between the two variables (age and multiple intelligences), r= -.19, n=121, p>.03. A p value of .03 shows that there is a statistically significant relationship between age and multiple intelligences. Therefore, the null hypothesis is rejected while the research hypothesis is accepted.

The Coefficient of Determination

In an effort to portray a clear idea of the variance shared by age and multiple intelligences, a coefficient of determination was calculated as, (.03 x .03) x 100= 0.09%. This implies that, the Pearson correlation of .03 when squared has produced a 0.09% shared variance. This value shows that there is definitely nothing in terms of shared variance.

Table 4.12 below presents hypotheses on the interrelationship between age, analytical intelligence, creative Intelligence and practical Intelligence**.** This is then followed by the researcher's interpretation of these statistical results.

4.4.5 The relationship between age, analytical intelligence, creative Intelligence and practical Intelligence

Table 4.12: The relationship between age, analytical intelligence, creative Intelligence and practical Intelligence

Hypotheses 8

Hypotheses for Pearson Correlation on Age and Analytical Intelligence.

H_o: There is no statistically significant relationship between age and analytical intelligence.

H_1: There is a statistically significant relationship between age and analytical intelligence.

Hypotheses 9

Hypotheses for Pearson Correlation on Age and Creative Intelligence.

H_o: There is no statistically significant relationship between age and creative intelligence.

H_1: There is a statistically significant relationship between age and creative intelligence.

Hypotheses 10

Hypotheses for Pearson Correlation on Age and Practical Intelligence.

H_o: There is no statistically significant relationship between age and practical intelligence.

H_1: There is a statistically significant relationship between age and practical intelligence.

Correlations: Hypotheses 8, 9 & 10

Descriptive Statistics

	Mean	Std.	N
A2.Age	21,9256	3,45486	121
Analytical Intelligence	88,7438	16,61000	121
Creative Intelligence	86,2231	18,53757	121
Practical Intelligence	93,2066	19,52132	121

Correlations

		A2.Age	Analytical Intelligence	Creative Intelligence	Practical Intelligence
A2.Age	Pearson Correlation	1	-,172	-,160	-.202*
	Sig. (2-tailed)		,059	,079	,026
	N	121	121	121	121
Analytical Intelligence	Pearson Correlation	-,172	1	.801**	.708**
	Sig. (2-tailed)	,059		,000	,000
	N	121	121	121	121
Creative Intelligence	Pearson Correlation	-,160	.801**	1	.796**
	Sig. (2-tailed)	,079	,000		,000
	N	121	121	121	121
Practical Intelligence	Pearson Correlation	-.202*	.708**	.796**	1
	Sig. (2-tailed)	,026	,000	,000	
	N	121	121	121	121

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

4.4.5.1 Interpretation of the relationship between age and analytical intelligence

The relationship between age and analytical intelligence (as measured by the Multiple Intelligences and Constructivist Teaching and Learning Questionnaire (MICTLQ) was

investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality and homoscedasticity. Analysis of data in Table 4.12 shows that there was a small negative correlation between the two variables (age and analytical intelligence), r= -.17, n=121, p>.06 was established. Based on the p value of .06, there is no statistically significant relationship between age and analytical intelligence. This result therefore compels the researcher to accept the null hypothesis and reject the research hypothesis.

The Coefficient of Determination

To paint a vivid picture of the variance shared by age and analytical intelligence, a coefficient of determination was calculated as, (.059 x .059) x 100= 0.35%. This implies that, the Pearson correlation of .059 when squared has produced a 0.35% shared variance. These two statistical results on the two separate statistical procedures confirm each other.

The interpretation of the statistical results the relationship between age and creative Intelligence follows below.

4.4.5.2 Interpretation of the relationship between age and creative Intelligence

The relationship between age and creative intelligence (as measured by the Multiple Intelligences and Constructivist Teaching and Learning Questionnaire (MICTLQ) was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality and homoscedasticity. Analysis of data in Table 4.12 shows that there was a medium negative correlation between the two variables (age and creative intelligence), r= -.16, n=121, p>.08. With a p value of .08 it can be concluded that there is no statistically significant relationship between age and creative intelligence. Based on this statistical result, the null hypothesis is therefore accepted while the research hypothesis is rejected.

The Coefficient of Determination

To present a clear view of the variance shared by age and creative intelligence, a coefficient of determination was calculated as, (.079 x .079) x 100= 0.62%. This

implies that, the Pearson correlation of .079 when squared has produced a 0.62% shared variance between age and creative intelligence.

Presented below is the interpretation of the statistical results the relationship between age and practical Intelligence (Hypotheses 10)

4.4.5.3 Interpretation of the relationship between age and practical Intelligence

The relationship between age and practical intelligence (as measured by the Multiple Intelligences and Constructivist Teaching and Learning Questionnaire (MICTLQ) was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality and homoscedasticity. Analysis of data in Table 4.12 shows that there was a medium negative correlation between the two variables (age and practical intelligence), r= -.20, n=121, p>.03. As a result of the p value of .03, it can be concluded that there is a statistically significant relationship between age and practical intelligence. Consequently, the null hypothesis is rejected while the research hypothesis is accepted.

The Coefficient of Determination

To present a clear view of the variance shared by age and creative intelligence, a coefficient of determination was calculated as, (.026 x .026) x 100= 0.068%. This implies that the Pearson correlation coefficient of .026 when squared has produced approximately 0.01% shared variance. This value shows that there is definitely nothing in terms of shared variance.

Presented below are the results on the relationships between age, guided instruction and social constructivism.

4.4.6 The relationship between age, guided instruction and social constructivism

Table 4.13 below provides null and research hypotheses on the interrelationships between age, guided instruction and social constructivism.

Table 4.13: The relationship between age, guided instruction and social constructivism

Hypotheses 11

Hypotheses for Pearson Correlation on Age and Guided Instruction.

H_o: There is no statistically significant relationship between age and guided instruction.

H_1: There is a statistically significant relationship between age and guided instruction.

Hypotheses 12

Hypotheses for Pearson Correlation on Age and Social Constructivism.

H_o: There is no statistically significant relationship between age and social constructivism.

H_1: There is a statistically significant relationship between age and social constructivism.

Correlations: Hypotheses 11 & 12

Descriptive Statistics

	Mean	Std. Deviation	N
A2.Age	21,9256	3,45486	121
Guided Instruction	53,7107	16,60142	121
Social Constructivism	98,7438	21,97860	121

Correlations

		A2.Age	Guided Instruction	Social Constructivism
A2.Age	Pearson Correlation	1	-,110	-,174
	Sig. (2-tailed)		,229	,056
	N	121	121	121
Guided Instruction	Pearson Correlation	-,110	1	.784**
	Sig. (2-tailed)	,229		,000
	N	121	121	121
Social Constructivism	Pearson Correlation	-,174	.784**	1
	Sig. (2-tailed)	,056	,000	
	N	121	121	121

**. Correlation is significant at the 0.01 level (2-tailed).

4.4.6.1 Interpretation of the relationship between age and guided instruction

The relationship between age and guided instruction (as measured by the Multiple Intelligences and Constructivist Teaching and Learning Questionnaire (MICTLQ) was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality and

homoscedasticity. Analysis of data in Table 4.13 shows that there was a small negative correlation between the two variables (age and guided instruction), *r*= -.11, *n*=121, *p*>.23. With a *p* value of .23, it can be included that there is no statistically significant relationship between age and guided instruction. On the basis of this result, the null hypothesis is accepted while the research hypothesis is rejected.

The Coefficient of Determination

To paint a clear picture of the variance shared by age and guided instruction, a coefficient of determination was calculated as, (.23 x .23) x 100= 5.29%. This implies that, the Pearson correlation of .023 when squared has produced a 5.29% shared variance. It was established in this hypothesis that age has no effect on the students' scores.

The statistical results on the relationship between age and social constructivism are interpreted below.

4.4.6.2 Interpretation of the relationship between age and social constructivism

The relationship between age and social constructivism (as measured by the Multiple Intelligences and Constructivist Teaching and Learning Questionnaire (MICTLQ) was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality and homoscedasticity. Analysis of data in Table 4.13 shows that there was a small negative correlation between the two variables (age and social constructivism), *r*= -.17, *n*=121, *p*>.06. A *p* value of .06 indicates that there is no statistically significant relationship between age and social constructivism. Premised on this statistical result, the null hypothesis is accepted while the research hypothesis rejected.

The Coefficient of Determination

To create a clearer conceptualisation of the variance shared by age and guided instruction, a coefficient of determination was calculated as, (.056 x .056) x 100= 0.31%. This implies that, the Pearson correlation of .056 when squared has produced a 0.31% shared variance.

Table 4.14 below show results on the relationship between multiple intelligences, guided instruction and social constructivism

4.4.7 The relationship between multiple intelligences, guided instruction and social constructivism

Table 4.14: The relationship between multiple intelligences, guided instruction and social constructivism

Hypotheses 13

Hypotheses for Pearson Correlation on Multiple Intelligences and Guided instruction.

H_0: There is no statistically significant relationship between multiple intelligences and guided instruction.

H_1: There is a statistically significant relationship between multiple intelligences and guided instruction.

Hypotheses 14

Hypotheses for Pearson Correlation on Multiple Intelligences and Social Constructivism.

H_0: There is no statistically significant relationship multiple intelligences and social constructivism.

H_1: There is a statistically significant relationship between multiple intelligences and social constructivism.

Hypotheses 15

Hypotheses for Pearson Correlation on Guided Instruction and Social Constructivism.

H_0: There is no statistically significant relationship between guided instruction and social constructivism.

H_1: There is a statistically significant relationship between guided instruction and social constructivism.

Correlations: Hypotheses 13, 14 & 15

Descriptive Statistics

	Mean	Std. Deviation	N
Multiple Intelligences	268,1736	50,28878	121
Guided Instruction	53,7107	16,60142	121
Social Constructivism	98,7438	21,97860	121

Correlations

		Multiple Intelligences	Guided Instruction	Social Constructivism
Multiple Intelligences	Pearson Correlation	1	.564**	.736**
	Sig. (2-tailed)		,000	,000
	N	121	121	121
Guided Instruction	Pearson Correlation	.564**	1	.784**
	Sig. (2-tailed)	,000		,000
	N	121	121	121
Social Constructivism	Pearson Correlation	.736**	.784**	1
	Sig. (2-tailed)	,000	,000	
	N	121	121	121

**. Correlation is significant at the 0.01 level (2-tailed).

4.4.7.1 Interpretation of the relationship between multiple intelligences and guided instruction

The relationship between guided instruction as an approach in curriculum implementation and multiple intelligences (as measured by the Multiple Intelligences and Constructivist Teaching and Learning Questionnaire (MICTLQ) was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality and homoscedasticity. Analysis of data in Table 4.14 shows that there was a strong positive correlation between the two variables, r=.56, n=121, p>0.00, with high levels of guided instruction in curriculum implementation associated with high levels of the stimulation and promotion of students' multiple intelligence. The p value of .00 indicates that there is a statistical significant relationship between guided instruction and multiple intelligences. This statistical result provides basis for the researcher to reject the null hypothesis and accept the research hypothesis. The more guided instruction, the more multiple intelligences.

The Coefficient of Determination

To obtain a clear picture the variance shared by guided instruction and multiple intelligences, a coefficient of determination was calculated as, (.56 x .56) x 100= 31.4%. Thus, the Pearson correlation of .56 when squared has produced approximately 31% shared variance. This implies that 31% of the variance on guided instruction is shared with multiple intelligences.

4.7.7.2 Interpretation of the relationship between multiple intelligences and social constructivism

The relationship between multiple intelligences and social constructivism (as measured by the Multiple Intelligences and Constructivist Teaching and Learning Questionnaire (MICTLQ) was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality and homoscedasticity. Analysis of data in Table 4.14 shows that there was a large positive correlation between the two variables (multiple intelligences and social constructivism), r= .74, n=121, p>.00. This implies that the more the curriculum is implemented through social constructivism, the more the students' attainment and realisation of multiple intelligences.

The more students are exposed to the curriculum through social constructivism, the more analytical intelligence, creative intelligence and practical intelligence are

promoted and achieved. At the backdrop of such a finding, it therefore becomes logical to join Vygotsky (1976 and 1978) in advocating for use of social constructivism in curriculum implementation. A *p* value of .00 indicates that there is a statistically significant relationship between multiple intelligences and social constructivism. Consequently, the null hypothesis is rejected while the research hypothesis is accepted.

The Coefficient of Determination

To present a clear picture the variance shared by guided instruction and multiple intelligences, a coefficient of determination was calculated as, (.74 x .74) x 100= 54.76%. Thus, the Pearson correlation of .74 when squared has produced approximately 55% shared variance. This value of the coefficient of determination implies that 55% of the variance in guided instruction is shared with multiple intelligences.

The paragraph below focusses on the interpretation of the statistical results the relationship between guided instruction and social constructivism (Hypotheses 15).

4.4.7.3 Interpretation of the relationship between guided instruction and social constructivism

The relationship between guided instruction and social constructivism (as measured by the Multiple Intelligences and Constructivist Teaching and Learning Questionnaire (MICTLQ) was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality and homoscedasticity. Analysis of data in Table 4.14 shows that there was a large positive correlation between the two variables (multiple intelligences and social constructivism), r= .78, n=121, p>.00. Based on a p value of .00, it can be concluded that there was a statistically significant relationship between multiple intelligences and social constructivism. Therefore, the null hypothesis is rejected while the research hypothesis is accepted.

The Coefficient of Determination

A coefficient of determination was calculated as, (.78x.78) x 100= 60.84% to create comprehensible picture of the variance shared by guided instruction and multiple intelligences. This implies that the Pearson correlation of .78 when squared has

produced approximately 61% shared variance. This means that 61% of the variance in guided instruction is shared with social constructivism. It provides a convincing statistical confirmation that all the students subscribe to the idea of implementing the curriculum using guided instruction and social constructivism

The following section of this chapter provides data analysis on differences between male and female students, and differences between age groups 18-21 and 22-36. The *t*-tests and their statistical results were uses to test the hypotheses.

4.5 INFERENTIAL STATISTICS: *T*-TESTS

The *t*-test was used to compare the scores of male and female students on multiple intelligences, analytical intelligence, creative intelligence, practical intelligence, guided instruction and social constructivism. Additionally, the age of students was divided into two broad age groups of 18-21 and 22 -36. These two age groups were then used to compare the scores of students aged 18-21 and the *t*-test was also used to test if these two age group scores differ in multiple intelligences, analytical intelligence, creative intelligence, practical intelligence, guided instruction and social constructivism. The statistical results are used to either accept or reject hypotheses.

Table 4.15 provides hypotheses on the differences between male and female students in intelligences scores**.**

4.5.1 Differences between male and female students in multiple intelligences scores

Below is a presentation of the statistical results on the hypotheses regarding the differences between male and female students in multiple intelligences scores

Table 4.15: Gender differences in multiple intelligences scores

Hypotheses for *t*-test on Gender and Multiple Intelligences.

H_o: There is no statistically significant difference in the mean multiple intelligences scores for male and female students.

H_1: There is a statistically significant difference in the mean multiple intelligences scores for male and female students.

T-Test: Hypotheses 16

Group Statistics

A1.Gender		N	Mean	Std. Deviation	Std. Error
Multiple Intelligences	Male	46	269,4130	62,60159	9,23010
	Female	75	267,4133	41,42858	4,78376

Independent Samples Test

		Levene's Test for Equality of		t-test for Equality of Means						
									95% Confidence Interval of the	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Multiple Intelligences	Equal variances assumed	5,146	,025	,211	119	,833	1,99971	9,45561	-16,72335	20,72277
	Equal variances not assumed			,192	69,378	,848	1,99971	10,39611	-18,73795	22,73737

4.5.1.1 Interpretation of results on differences between male and female students in multiple intelligences scores

An independent-samples *t*-test was conducted to compare the multiple intelligences scores for male and female students. Analysis of data in Table 4.15 shows that there was no statistically significant difference in scores for males (*M*=269.41, *SD*=62.60) and females (*M*=267.41, *SD*=41.43, *t* (119) = .19, *p*=.85, two-tailed). The magnitude of the differences in the means (mean difference=2.00; 95% *CI*: -18.74 to 22.74) was significantly small and almost negligible (*eta* squared=.006). The statistical results also indicate a *p* value of .85. Therefore, the null hypothesis that there is no statistically significant difference between the scores for male and female students on multiple intelligences is accepted.

Subsequently, the research hypothesis is thus rejected. This is also substantiated by the confidence interval of *CI*: -18.74 to 22.74, which includes 0 (zero). From the above analysis, this study has therefore demonstrated that gender cannot be perceived as a potential variable which determines the students' scores on multiple intelligences. However, it is important to point out that, premised on the Levene's test result for the male and female scores on multiple intelligences, which was .025, this data violated the assumption of equal variance. This suggests that variances for the male and female students on multiple intelligences were not the same. To uphold the assumption of equal variances, the Levene's test result must be above the threshold

of. 05. As a statistical procedure to compensate for the fact that the variances were not the same, the information in the second line of the *t*-test table was used. The information in this line refers to equal variances not assumed.

In the upcoming paragraphs, the researcher will present and discuss the statistical results of Hypotheses 17, 18, 19, 20 and 21. Prior to the presentation and interpretation of the statistical results for these research hypotheses, the respective research hypotheses will be presented in Table 4.16 below, followed by Table 4.17 which shows the statistical results for each hypotheses.

Table 4.16: Differences between male and female students in analytical intelligence scores, creative intelligence scores, practical intelligence scores, guided instruction scores and social constructivism scores

Hypotheses 17

Hypotheses for *t*-test on Gender and Analytical Intelligence.

H_o: There is no statistically significant difference in the mean analytical intelligence scores for male and female students.

H_1: There is a statistically significant difference in the mean analytical intelligence scores for male and female students.

Hypotheses 18

Hypotheses for *t*-test on Gender and Creative Intelligence.

H_o: There is no statistically significant difference in the mean creative intelligence scores for male and female students.

H_1: There is a statistically significant difference in the mean creative intelligence scores for male and female students.

Hypotheses 19

Hypotheses for *t*-test on Gender and Practical Intelligence.

H_o: There is no statistically significant difference in the mean practical intelligence scores for male and female students.

H_1: There is a statistically significant difference in the mean practical intelligence scores for male and female students.

Hypotheses 20

Hypotheses for *t*-test on Gender and Guided Instruction.

H_o: There is no statistically significant difference in the mean guided instruction scores for male and female students.

H_1: There is a statistically significant difference in the mean guided instruction scores for male and female students.

Hypotheses 21

Hypotheses for *t*-test on Gender and Social Constructivism.

H_o: There is no statistically significant difference in the mean social constructivism scores for male and female students.

H_1: There is a statistically significant difference in the mean social constructivism scores for male and female students.

Table 4.17: Statistical results on differences between male and female students in analytical intelligence scores, creative intelligence scores, practical intelligence scores, guided instruction scores and social constructivism scores

T-Test: Hypotheses 17, 18, 19, 20 & 21

Group Statistics

A1.Gender		N	Mean	Std. Deviation	Std. Error
Analytical Intelligence	Male	46	90,1522	19,78548	2,91721
	Female	75	87,8800	14,39966	1,66273
Creative Intelligence	Male	46	86,3043	23,41972	3,45305
	Female	75	86,1733	14,95703	1,72709
Practical Intelligence	Male	46	92,9565	23,62292	3,48301
	Female	75	93,3600	16,69005	1,92720
Guided Instruction	Male	46	53,2826	19,35707	2,85404
	Female	75	53,9733	14,79497	1,70838
Social Constructivism	Male	46	94,8913	25,73301	3,79413
	Female	75	101,1067	19,12517	2,20838

Independent Samples Test

		Levene's Test for Equality of		t-test for Equality of Means						
									95% Confidence Interval of the	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Analytical Intelligence	Equal variances assumed	3,711	,056	,729	119	,467	2,27217	3,11675	-3,89931	8,44365
	Equal variances not assumed			,677	74,224	,501	2,27217	3,35779	-4,41804	8,96239
Creative Intelligence	Equal variances assumed	5,207	,024	,038	119	,970	,13101	3,48619	-6,77198	7,03401
	Equal variances not assumed			,034	67,752	,973	,13101	3,86088	-7,57376	7,83579
Practical Intelligence	Equal variances assumed	2,832	,095	-,110	119	,913	-,40348	3,67103	-7,67248	6,86552
	Equal variances not assumed			-,101	72,632	,920	-,40348	3,98064	-8,33755	7,53059
Guided Instruction	Equal variances assumed	5,491	,021	-,221	119	,825	-,69072	3,12145	-6,87151	5,49006
	Equal variances not assumed			-,208	77,012	,836	-,69072	3,32628	-7,31417	5,93272
Social Constructivism	Equal variances assumed	1,194	,277	-1,518	119	,132	-6,21536	4,09387	-14,32164	1,89092
	Equal variances not assumed			-1,416	75,394	,161	-6,21536	4,39003	-14,96000	2,52928

The interpretation of the statistical results of all the hypotheses in the table above will now be presented, starting with those for the differences between male and female students in terms of analytical intelligence scores

4.5.2 Interpretation results on differences between male and female students in terms of analytical intelligence scores

An independent-samples *t*-test was conducted to compare the analytical intelligence scores for male and female students. Analysis of data in Table 4.17 shows that there was no significant difference in scores for males (*M*=90.15, *SD*=19.79) and females

(*M*=87.88, *SD*=14.40, *t* (119) = .73, *p*=.47, two-tailed). The magnitude of the differences in the means (mean difference=2.27;95% *CI*: -3.90 to 8.44) was very small (*eta* squared=.004). Since the Levene's test result was .56, which is larger than .05, information in the first line of the t-test table was used, implying the assumption of equal variances.

The statistical data above show that the value of *p* is .47. This shows that there is no statistically significant difference between the scores for male and female students on analytical intelligence. Therefore, the null hypothesis is accepted while the research hypothesis is rejected. This is also confirmed by the confidence interval which includes 0 (zero). In this study, it is revealed that gender does not influence the students' scores on analytical intelligence.

The interpretation of the statistical results on the differences between male and female students in creative intelligence scores (Hypothesis 18) will now be presented in the upcoming paragraphs.

4.5.3 Interpretation of results differences between male and female students in terms of creative intelligence scores

An independent-samples *t*-test was conducted to compare the creative intelligence scores for male and female students. Analysis of data in Table 4.17 shows that there was no significant difference in scores for males (*M*=86.30, *SD*=23.42) and females (*M*=86.17, *SD*=15.00, *t* (119) = .34, *p*=.97, two-tailed). The magnitude of the differences in the means (mean difference=.13101; 95% *CI*: -7.57 to 7.84) was substantially small (*eta* squared=.000). Thus, gender was found not to have an effect on the students' scores in creative intelligence.

The Levene's test result for the male and female scores on creative intelligence was .024, which is below the threshold of above .05, to uphold the assumption of equal variance. The variances for the male and female students on creative intelligence were not the same. Therefore, this data violated the assumption of equal variance. To compensate for the fact that the variances were not the same, the information in the second line of the *t*-test table was used. The information in this line refers to equal variances not assumed.

In the statistical data above, the value of *p* is .97 reveals that there is no statistically significant difference between the scores for male and female students in creative intelligence. Thus the null hypothesis in accepted while the research hypothesis is rejected. This is also vindicated by the confidence interval (-7.57 to 7.84) which includes 0 (zero). The quantitative finding on this hypothesis demonstrated that gender had no effect on the students' scores in creative intelligence.

In the following paragraphs, the researcher will present the interpretation of the statistical results on differences between male and female students in practical intelligence scores (Hypothesis 19).

4.5.4 Interpretation of results on differences between male and female students in practical intelligence scores

An independent-samples *t*-test was conducted to compare the practical intelligence scores for male and female students. Analysis of data in Table 4.17 shows that there was no significant difference in scores for males (*M*=92.96, *SD*=23.62) and females (*M*=93.36, *SD*=16.69, *t* (119) = -.11, *p*=.91, two-tailed). A confidence interval of -7.67 to 6.87 which includes 0 (zero) also confirms this conclusion. The magnitude of the differences in the means (mean difference=-40348;95% *CI*: -7.67 to 6.87) was negligible (*eta* squared=.000). Premised on the Levene's test result being .095, which is larger than .05, the assumption of equal variances was upheld, prompting the researcher to use information in the first line of the t-test table, implying the assumption of equal variances. Gender was therefore not established as a determinant of the students' scores in practical intelligence.

With a *p* value of .91, the null hypothesis is accepted while the research hypothesis is rejected. Therefore, there is no statistically significant difference between male and female scores in practical intelligence.

The statistical results on differences between male and female students in guided instruction scores **(**Hypothesis 20) will now follow in the next paragraphs.

4.5.5 Interpretation of results differences between male and female students in guided instruction scores

An independent-samples *t*-test was conducted to compare the guided instruction scores for male and female students. Analysis of data in Table 4.17 shows that there

was no significant difference in scores for males (*M*=53.28, *SD*=19.36) and females (*M*=53.97, *SD*=14.79, *t* (119) = -.21, *p*=.84, two-tailed). This is also confirmed by the confidence interval (-7.31 to 5.93) in which 0 (zero) is included. The magnitude of the differences in the means (mean difference = -69072; 95% *CI*: -7.31 to 5.93) was almost negligible (*eta* squared=.000). Hence, gender was found to have no effect on the students in the mean guided instruction scores.

The Levene's test result for the male and female students in the mean guided instruction scores was .021, which is below the required threshold of above .05 to assume equal variances between their scores. The variances for the male and female students in the mean guided instruction scores were not the same. Therefore, this data violated the assumption of equal variance. To compensate for the fact that the variances were not the same, the information in the second line of the t-test table was used. The information in this line refers to equal variances not assumed.

With a *p* value of .84, it shows that there is no statistically significant difference between male and female scores on guided instruction. Consequently, the null hypothesis is accepted whilst the research hypothesis is rejected.

In the following paragraphs, the researcher will now present the interpretation of statistical results on the differences between male and female students in social constructivism scores (Hypothesis 21).

4.5.6 Interpretation of results on differences between male and female students in terms of social constructivism scores

An independent-samples *t*-test was conducted to compare the social constructivism scores for male and female students. Analysis of data in Table 4.17 shows that there was no significant difference in scores for males (*M*=94.89, *SD*=25.73) and females (*M*=101.11, *SD*=19.13, *t* (119) = .28, *p*=.13, two-tailed). This finding is further endorsed by the confidence interval (-14.32 to 1.89) which also includes 0 (zero). The magnitude of the differences in the means (mean difference = -6.21536; 95% *CI*: -14.32 to 1.89) was very small (*eta* squared=.020). This implies that gender was found not to be a determinant of the students' scores of social constructivism. Based on the Levene's test result of .28 on the male and female scores for social constructivism, which is significantly above the threshold of .05, the assumption of equal variances was upheld, leading the researcher to use information in the first line of the *t*-test table. The *p* value

of .13 reveals that there is no statistically significant difference between male and female scores on social constructivism. Therefore, the null hypothesis is accepted while the research hypothesis is rejected.

The statistical results on the differences in multiple intelligences scores for students aged 18-21 and 22-36 (Hypotheses 22) are presented in the table below.

4.5.7 Differences in multiple intelligences scores for students aged 18-21 and 22-36

Table 4.18: Differences in multiple intelligences scores for students aged 18-21 and 22-36

Hypotheses 22

Hypotheses for *t*-test on Age and Multiple Intelligences.

H_o: There is no statistically significant difference in the mean multiple intelligences scores for students aged 18-21 and students aged 22-36.

H_1: There is a statistically significant difference in the mean multiple intelligences scores for students aged 18-21 and students aged 22-36.

T-Test: Hypotheses 22

Group Statistics

A2.Age		N	Mean	Std. Deviation	Std. Error Mean
Multiple Intelligences	18-21	70	272,5000	44,06805	5,26714
	22-36	51	262,2353	57,68348	8,07730

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Multiple Intelligences	Equal variances assumed	1,784	,184	1,110	119	,269	10,26471	9,24934	-8,04992	28,57933
	Equal variances not assumed			1,064	89,797	,290	10,26471	9,64290	-8,89319	29,42260

From the above display of the statistical results for Hypotheses 22, the interpretation of the same hypothesis follows.

4.5.7.1 Interpretation of results on differences in multiple intelligences scores for students aged 18-21 and 22-36

An independent-samples *t*-test was conducted to compare the multiple intelligences scores for students aged 18-21 and students aged 22-36. Analysis of data in Table 4.18 shows that there was no significant difference in scores for students aged 18-21 (*M*=272.50, *SD*=44.07) and students aged 22-36 (*M*=262.24, *SD*=57.68), *t* (119) = .18, *p*=.27, two-tailed). This conclusion is further substantiated by the confidence interval (-8.05 to 28.58) which also includes 0 (zero). The magnitude of the differences in the means (mean difference =10.26471;95% *CI*: -8.05 to 28.58) was very small (*eta* squared=.010). Age was thus not established as a variable which can be used to predict the students' scores in multiple intelligences.

Since the statistical analysis of the scores produced a Levene's test result of .18 on the multiple intelligences scores for students aged 18-21 and 22-36, which is higher than .05, it was assumed that there were no variances on the scores for the two age groups. Consequently, the assumption of equal variances was maintained. This compelled the researcher to use information in the first line of the *t*-test table. Statistically, it was established that the scores for students aged 18-21 and students aged 22-36 scores on multiple intelligences were not statistically significant different. Based on the *p* value of .27, it can be concluded that there is no statistically significant difference in the mean multiple intelligences scores for students aged 18-21 and 22-36. As such, the null hypothesis is accepted whilst the research hypothesis is rejected.

Hypotheses on the differences in analytical intelligences scores, creative intelligence scores, practical intelligence scores, guided instruction scores and creative intelligence scores for students aged 18-21 and 22-36 **(**Hypotheses 23, 24, 25, 26 & 27) will now be presented in Table 4.19 below.

Table 4.19: Hypotheses for differences in analytical intelligences scores, creative intelligence scores, practical intelligence scores, guided instruction scores and creative intelligence scores for students aged 18-21 and 22-36

Hypotheses 23

Hypotheses for *t*-test on Age and Analytical Intelligence.

H_o: There is no statistically significant difference in the mean analytical intelligence scores for students aged 18-21 and students aged 22-36.

H_1: There is a statistically significant difference in the mean analytical intelligence scores for students aged 18-21 and students aged 22-36.

Hypotheses 24

Hypotheses for *t*-test on Age and Creative Intelligence.

H_o: There is no statistically significant difference in the mean creative intelligence scores for students aged 18-21 and students aged 22-36

H_1: There is a statistically significant difference in the mean creative intelligence scores for students aged 18-21 and students aged 22-36

Hypotheses 25

Hypotheses for *t*-test on Age and Practical Intelligence.

H_o: There is no statistically significant difference in the mean practical intelligence scores for students aged 18-21 and students aged 22-36.

H_1: There is a statistically significant difference in the mean practical intelligence scores for students aged 18-21 and students aged 22-36.

Hypotheses 26

Hypotheses for *t*-test on Age and Guided Instruction.

H_o: There is no statistically significant difference in the mean guided instruction scores for students aged 18-21 and students aged 22-36.

H_1: There is a statistically significant difference in the mean guided instruction scores for aged 18-21 and students aged 22-36.

Hypotheses 27

Hypotheses for *t*-test on Age and Social Constructivism.

H_o: There is no statistically significant difference in the mean social constructivism scores for students aged 18-21 and students aged 22-36.

H_1: There is a statistically significant difference in the mean social constructivism scores for students aged 18-21 and students aged 22-36.

Table 4.20: Data analysis on the differences in analytical intelligences scores, creative intelligence scores, practical intelligence scores, guided instruction scores and creative intelligence scores for students aged 18-21 and 22-36

T-Test: Hypotheses 23, 24, 25, 26 & 27

Group Statistics

A2.Age		N	Mean	Std. Deviation	Std. Error Mean
Analytical Intelligence	18-21 years old	70	90,1286	14,74903	1,76285
	22-36 years old	51	86,8431	18,85669	2,64047
Creative Intelligence	18-21 years old	70	87,2857	16,35843	1,95521
	22-36 years old	51	84,7647	21,25332	2,97606
Practical Intelligence	18-21 years old	70	95,0857	17,05383	2,03832
	22-36 years old	51	90,6275	22,39461	3,13587
Guided Instruction	18-21 years old	70	53,7571	14,82403	1,77181
	22-36 years old	51	53,6471	18,92599	2,65017
Social Constructivism	18-21 years old	70	100,4714	18,83623	2,25136
	22-36 years old	51	96,3725	25,68654	3,59684

Independent Samples Test

		Levene's Test for Equality of		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Analytical Intelligence	Equal variances assumed	1,117	,293	1,075	119	,285	3,28543	3,05595	-2,76565	9,33652
	Equal variances not assumed			1,035	91,354	,303	3,28543	3,17485	-3,02069	9,59156
Creative Intelligence	Equal variances assumed	,895	,346	,737	119	,462	2,52101	3,41931	-4,24957	9,29159
	Equal variances not assumed			,708	90,288	,481	2,52101	3,56087	-4,55297	9,59498
Practical Intelligence	Equal variances assumed	1,277	,261	1,243	119	,216	4,45826	3,58577	-2,64192	11,55844
	Equal variances not assumed			1,192	89,587	,236	4,45826	3,74011	-2,97259	11,88912
Guided Instruction	Equal variances assumed	3,733	,056	,036	119	,971	,11008	3,06915	-5,96715	6,18732
	Equal variances not assumed			,035	91,448	,973	,11008	3,18790	-6,22187	6,44204
Social Constructivism	Equal variances assumed	6,217	,014	1,013	119	,313	4,09888	4,04586	-3,91233	12,11009
	Equal variances not assumed			,966	87,159	,337	4,09888	4,24333	-4,33498	12,53274

4.5.8 Interpretation of results on differences in analytical intelligences scores for students aged 18-21 and 22-36

An independent-samples *t*-test was conducted to compare the analytical intelligence scores for students aged 18-21 and students aged 22-36. Analysis of data in Table 4.20 shows that there was no significant difference in scores for students aged 18-21 (*M*=90.13, *SD*=14.75) and students aged 22-36 (*M*=86.34, *SD*=18.86), *t* (119) = .29, *p*=.29, two-tailed). This conclusion is further substantiated by the confidence interval (-2.77 to 9.34) which also includes 0 (zero). The magnitude of the differences in the

means (mean difference =3.28543;95% *CI*: -2.77 to 9.34) was negligible (*eta* squared=.010). In conclusion, age was not found to have an influence on the students' scores of analytical intelligence.

Noting that the Levene's test on the analytical intelligence scores for students aged 18-21 and 22-36 produced a result of .29, which is significantly higher than .05, it was assumed that there were no variances on the scores for the two age groups. As a result, the assumption of equal variances was inevitable, thereby signalling the researcher to use information in the first line of the *t*-test table. It was therefore statistically proved that there were no variances on the analytical intelligence scores for students aged 18-21 and students aged 22-36.

On the basis of the *p* value being .29, the null hypothesis that there is no statistically significant difference on the analytical intelligence scores for students aged 18-21 and 22-36 is accepted whilst the research hypothesis is rejected.

The following discussion will now focus on the interpretation of the statistical results on the differences in creative intelligence scores for students aged 18-21 and 22-36 (Hypothesis 24).

4.5.9 Interpretation of results on differences in creative intelligence scores, for students aged 18-21 and 22-36

An independent-samples *t*-test was conducted to compare the creative intelligence scores for students aged 18-21 and students aged 22-36. Analysis of data in Table 4.20 shows that there was no significant difference in scores for students aged 18-21 (*M*=87.29, *SD*=16.36) and students aged 22-36 (*M*=84.77, *SD*=21.25), *t* (119) = .35, *p*=.46, two-tailed). A confidence interval (-4.25 to 9.29) which includes 0 (zero) further endorses this conclusion. The magnitude of the differences in the means (mean difference =2.52101; 95% *CI*: -4.25 to 9.29) was negligible (*eta* squared=.001). Consequently, this study established that age does not determine the students' scores of creative intelligence.

Premised on a Levene's test of .35 on the creative intelligence scores for students aged 18-21 and 22-36, which is substantially higher than .05, the assumption of equal variances on the scores for the two age groups was upheld. As a procedural practice in all cases where equal variances are assumed, the researcher used information in

the first line of the *t*-test table. Thus, there were no variances on the creative intelligence scores for students aged 18-21 and students aged 22-36. With a *p* value of .46, the null hypothesis that there is no statistically significant difference on the creative intelligence scores for students aged 18-21 and 22-36 is accepted whilst the research hypothesis is rejected.

In the upcoming paragraphs, the researcher will present an interpretation of the statistical findings on the differences between students aged 18-21 and 22-36 in practical intelligence scores (Hypotheses 25).

4.5.10 Interpretation of results on the differences between students aged 18- 21 and 22-36 in practical intelligence scores

Following the formulation of Hypotheses 25, an independent-samples *t*-test was conducted to compare the practical intelligence scores for students aged 18-21 and students aged 22-36. Analysis of data in Table 4.20 shows that there was no significant difference in scores for students aged 18-21 (*M*=95.09, *SD*=17.05) and students aged 22-36 (*M*=90.63, *SD*=22.40), *t* (119) = .26, *p*=.22, two-tailed). This is also substantiated by the confidence interval (-2.64 to 11.56) which includes 0 (zero). The magnitude of the differences in the means (mean difference =4.45826; 95% *CI*: -2.64 to 11.56) was very small (*eta* squared=.012). For this reason, age was not found to have an effect on the students' scores of practical intelligence.

The assumption of equal variances on the scores for the two age groups was observed owing to the Levene's test of .26 on the practical intelligence scores for students aged 18-21 and 22-36, which is higher than .05. As a result, the information in the first line of the *t*-test table was used for statistical purposes. There were no variances on the practical intelligence scores for students aged 18-21 and students aged 22-36. The statistical calculations produced a *p* value of .22, which implies that there is no statistically significant difference on the practical intelligence scores for students aged 18-21 and 22-36. Therefore, the null hypothesis is accepted whilst the research hypothesis is rejected.

The interpretation of the statistical results on the differences in guided instruction scores for students aged 18-21 and 22-36 (Hypotheses 26) will now be presented below.

4.5.11 Interpretation of results on differences in guided instruction scores for students aged 18-21 and 22-36

In an attempt to measure the relationship between age and guided instruction scores, an independent-samples *t*-test was conducted to compare the guided instruction scores for students aged 18-21 and students aged 22-36. Analysis of data in Table 4.20 shows that there was no significant difference in scores for students aged 18-21 (*M*=53.76, *SD*=14.82) and students aged 22-36 (*M*=53.65, *SD*=18.93), *t* (119) = .56, *p*=.97, two-tailed). Further evidence in support of this assertion is found in the confidence interval (-5.97 to 6.19) which includes 0 (zero). The magnitude of the differences in the means (mean difference =.11008; 95% *CI*: -5.97 to 6.19) was very small (*eta* squared=.0010). Given these statistical results, age was rejected as a possible determinant of the students' scores of guided instruction.

The Levene's test on guided instruction scores for students aged 18-21 and 22-36 produced a result of .56. This Levene's test result is higher than .05; as such, the researcher used information in the first line of the *t*-test table for statistical purposes. The assumption of equal variances was thus maintained. There were no variances on the guided instruction scores for students aged 18-21 and students aged 22-36. With the statistical calculations resulting in a *p* value of .97; it can be concluded that there is no statistically significant difference on the guided instruction scores for students aged 18-21 and 22-36. Therefore, the null hypothesis is accepted whilst the research hypothesis is rejected.

In the upcoming discussion, the researcher presents an interpretation of the statistical results on the mean differences in social constructivism scores for students aged 18-21 and 22-36 (Hypotheses 27).

4.5.12 Interpretation of results on the mean differences in social constructivism scores for students aged 18-21 and 22-36

An independent-samples *t*-test was conducted to compare the social constructivism scores for students aged 18-21 and students aged 22-36. Analysis of data in Table 4.20 shows that there was no significant difference in scores for students aged 18-21(*M*=100.47, *SD*=18.84) and students aged 22-36 (*M*=96.37, *SD*=25.69), *t* (119) = .97, *p*=.34, two-tailed). The confidence interval of (-4.33 to 12.53) in which 0 (zero) is included also attest to this finding. The magnitude of the differences in the means

(mean difference =4.09888; 95%*CI*:-4.33 to 12.53) was very small (*eta* squared=.008). Evidently, age was not found to be a variable which can potentially inform the students' scores of social constructivism.

By virtue of the Levene's test on the social constructivism scores for students aged 18-21 and 22-36 registering a result of .014, the scores were found to be in contravention of the assumption of equal variances. The Levene's test result of .014 is below the requirement of above .05 which is a prerequisite to assume equal variances between their scores. The variances for the students aged 18-21 and students aged 22-36 on social constructivism were not the same. As a statistical procedure to mitigate and compensate for the differences on the variances, the information in the second line of the *t*-test table was used. The information in this line implies equal variances not assumed.

Premised on the *p* value of .34, it is concluded that there is no statistically significant difference on the social constructivism scores for students aged 18-21 and 22-36. Owing to this statistical outcome, the null hypothesis is accepted whilst the research hypothesis is rejected.

4.6 SUMMARY

In this chapter, descriptive and inferential statistics were presented and analysed. A total of 27 hypotheses were tested and discussed in this chapter. Of these research hypotheses, 15 were based on the Pearson correlation coefficient while the last 12 focussed on *t*-tests. The Pearson correlation coefficient was used to establish how the students' variables of gender and age are related to multiple intelligences, analytical intelligence, creative intelligence, practical intelligence, guided instruction and social constructivism. Lastly, the Pearson correlation coefficient was also used to measure the relationship between multiple intelligences and guided instruction, multiple intelligences and social constructivism and guided instruction and social constructivism. *T*-tests were conducted to compare students in the mean multiple intelligences scores, analytical intelligence scores, creative intelligence scores, guided instruction scores and social constructivism scores based on their gender and age.

The empirical and statistical confirmation and refutation of the respective hypotheses has also been made in this chapter, basing such conclusion on the statistical results and interpretation for each hypothesis. The quantitative findings and conclusions

made in this chapter therefore pave way to the presentation and analysis of the qualitative data from the focus group interviews, which constituted the phenomenological part of the study. Thus, as a triangulation strategy, the following chapter will present and analyse the qualitative findings in relation to the quantitative findings and conclusions in this chapter.

CHAPTER V

PRESENTATION AND ANALYSIS OF QUALITATIVE DATA

5.1 INTRODUCTION

Noting that this study adopted a pragmatic approach in generating the relevant research data, with quantitative data having been presented and analysed in the previous chapter, the purpose of this chapter is to present the qualitative data from the phenomenological focus group interviews. This chapter is therefore the ultimate manifestation of the explanatory sequential mixed methods research design was adopted in this study. It is a practical confirmation of the sentiments of Ivankova, Creswell and Plano Clark (2016) and McMillan and Schumacher (2010) about the collection and analysis of quantitative data followed by a qualitative phase in an explanatory sequential research design. It also demonstrates the constructivist and interpretivist epistemological and ontological beliefs of the researcher, in light of phenomenology as a qualitative research paradigm. As such, the qualitative data obtained from the open ended section of the questionnaire will also be presented and analysed in this chapter.

It is in this chapter that the assumptions of negotiated meaning of reality, as advanced by the social constructivist interpretivist framework (Creswell, 2013; Denzin and Lincoln, 2011; Maxwell, 2012 and Mertens, 2010) are manifested and put into practice. In the same way, Evans *et al*. (2010) remark that the findings of a constructivist paradigm are created within the realms and context of the study and that the variables and personal orientation of social constructions can be determined through the researcher's interactions with the study participants. Reference can be made to constructivist work of Baxter Magolda (1999a and 2001) who sought to find out the perceptions of students at Miami University about their world.

The phenomenological paradigm adopted for the qualitative part of the study required the researcher to create conditions for study participants to deeply reflect on their learning experiences in the lecture hall, describe them vividly and report on them. As such, focus group interviews were formed as shown below in Table 5.1. After analysing the quantitative data obtained from the questionnaire, 8 groups for focus group interviews were formed. Each group comprised 6 members. All the groups responded to a similar set of questions. All the 8 sessions were voice recorded and

thereafter, the responses of individual participants were analysed using content analysis and triangulated to identify points of agreement and inconsistencies.

It was during these in-depth focus group interviews that the researcher gained some significant insights into the students' lived experiences in the accounting lecture hall. The researcher was able to obtain first-hand information and some practical views of what it means and feels like to access the accounting curriculum for first year student teachers. Together with the researcher, the study participants were able to create visual presentations of their teaching and learning experiences and ascribe meaning to them. Thus, through the focus group interviews, the researcher was able to obtain a profound and deep understanding of the learning experiences of first year accounting students teachers and the implications these learning experiences have on curriculum implementation.

Table 5.1: Presentation of focus group interview participants

FOCUS GROUP INTERVIEW	CODE ASSIGNED TO FOCUS GROUP INTERVIEW PARTICIPANT	FOCUS GROUP INTERVIEW PARTICIPANT NUMBER
FOCUS GROUP INTERVIEW: GROUP A Assigned code for the group: FGI GA	A1	P1
	A2	P2
	A3	P3
	A4	P4
	A5	P5
	A6	P6
FOCUS GROUP INTERVIEW: GROUP B Assigned code for the group: FGI GB	B1	P7
	B2	P8
	B3	P9
	B4	P10
	B5	P11
	B6	P12
FOCUS GROUP INTERVIEW: GROUP C Assigned code for the group: FGI GC	C1	P13
	C2	P14
	C3	P15
	C4	P16
	C5	P17
	C6	P18

Table 5.1: Presentation of focus group interview participants, continues…

FOCUS GROUP INTERVIEW: GROUP D Assigned code for the group: FGI GD	D1	P19
	D2	P20
	D3	P21
	D4	P22
	D5	P23
	D6	P24
FOCUS GROUP INTERVIEW: GROUP E Assigned code for the group: FGI GE	E1	P25
	E2	P26
	E3	P27
	E4	P28
	E5	P29
	E6	P30
FOCUS GROUP INTERVIEW: GROUP F Assigned code for the group: FGI GF	F1	P31
	F2	P32
	F3	P33
	F4	P34
	F5	P35
	F6	P36
FOCUS GROUP INTERVIEW: GROUP G Assigned code for the group: FGI GG	G1	P37
	G2	P38
	G3	P39
	G4	P40
	G5	P41
	G6	P42
FOCUS GROUP INTERVIEW: GROUP H Assigned code for the group: FGI GH	H1	P43
	H2	P44
	H3	P45
	H4	P46
	H5	P47
	H6	P48

Below are the themes and sub-themes which emerged from the students' responses during the focus group interviews.

5.2. PRESENTATION OF DATA FROM THE FOCUS GROUP INTERVIEWS

Before discussing the qualitative findings from the focus group interviews, it is necessary to present the raw data that was generated in these focus group interviews. This presentation is done in terms of the main themes and subthemes that emerged from the students' responses per question. A theoretical justification for the inclusion of every question is also provided.

5.2.1 Presentation of main themes and subthemes that emerged from the focus group interviews per individual questions

In the following section, all the questions that were discussed in the focus group interviews will be presented together with the main themes and subthemes that emerged from the discussions.

1. What is your understanding of the following terms as they were used in this study and in relation to the teaching and learning activities in accounting? Please provide an example of a learning task in which every term is depicted.

Analyse	Create	Apply
Critique	Invent	Use
Judge	Discover	Put into practice
Compare and Contrast	Predict	Implement
Evaluate	Imagine if…	Employ
Assess	Suppose that…	Render practice

Justification for including the question in the focus group interviews

This question sought to evaluate and determine the students' understanding of the statements which they responded to in the correlational part of the study, specifically those relating to multiple intelligences. The researcher wanted to establish whether or not the students' ratings were informed by a thorough and sound understanding of the terms as they were used in the questionnaire. The question sought to establish the reliability of the statements that were posed under each construct. To determine whether or not they measured what they were supposed to measure.

From the qualitative data on the question above, the following main theme emerged.

Main theme

- The majority of students had adequate and satisfactory understanding of the various key terms and words for analytical, creative and practical intelligence.

From the above main theme, the following subthemes were developed.

- The students can correctly identify the type of multiple intelligence that is addressed by a learning activity.
- The students can correctly differentiate between learning activities that appeal to analytical, creative and practical intelligences.
- The students can correctly formulate questions to appeal to a specific type of intelligence using the relevant key words or phrases.

2. What influence does age and gender have on your ability to identify and relate to teaching and learning activities that appeal to analytical intelligence, creative intelligence, practical intelligence, guided instruction and social constructivism?

Justification for including the question in the focus group interviews

Apart from qualifying the statistical results for the hypotheses on age and gender over multiple intelligences, guided instruction and social constructivism, this question was based on Vygotsky's (1978) perception that age influences ones' perceptions and interpretation of their learning activities and experiences. The study findings of Arisoy (2007); Brown, Williams and Lynch (2011); Den Brok (2005) and Rakici (2004) in which gender was found to have an effect on one's perceptions of learning activities and experiences also resonated well with this question.

The main themes below emerged from the qualitative data obtained for this question.

Main themes

- No influence at all.

- Interpretation and ability to relate to them is not influenced by age and gender.

From the above main themes, the following subthemes were identified.

- The analytical, creative and practical intelligences can be identified in isolation of age and gender.
- Guided instruction and social constructivism can also be identified independent of age.
- One's understanding and determination of analytical intelligence has nothing to do with their age and gender.
- It is the knowledge and understanding of the basic terms used to promote analytical intelligence, creative intelligence and practical intelligence in learning activities which influences one's scores on the specific types of multiple intelligences
- One's real life experience is also important in this regard

3. Do you have study groups for accounting in which your various intelligences and abilities are developed? (informally). If you have, explain the benefits of such informal study groups.

Justification for including the question in the focus group interviews

This question sought to identify whether or not the students realised and acknowledge the educational value of study groups, noting that structured group learning is one of the key aspects of cooperative learning, a product of social constructivism. In addition, both Sternberg (2009) and Vygotsky (1978) advocate for such type of learning in which understanding of the subject matter is a collectively shared and negotiated activity among the students. This question is compatible with the underlying assumptions of the social cognitive theory as advanced by Bandura (1998, 2001, 2002) which explains how students can learn from their personal interactions with each other and the social environment.

The main themes below emerged from the qualitative data for this question.

Main themes

- The response was in the affirmative. Yes.
- Students have functional study groups.
- Academic and social benefits

The subthemes presented below emanated from the above main themes

- Most students form study groups towards a test or examination.
- They discuss and debate about subject content.
- They share and exchange ideas.
- They support, comfort and encourage each other.
- They meet in the library in the cubicles and go through question papers and activities in the textbook
- Those staying within the same premises also study together, e.g. students staying on campus
- However, the groups are not always productive.

4. With accounting being a practical subject, are you able to establish the relationship between theory and practice?

Justification for including the question in the focus group interviews

This question sought to appeal to analytical intelligence and practical intelligence of students. The question is also in harmony with some of the assumptions advanced by a social constructivist approach to curriculum implementation. Lastly, it was meant to determine whether or not the students are taught predominantly in the abstract or practical realms.

The following main themes emerged from the students' responses and views on this question.

Main themes

- Development and promotion of practical intelligence were very limited.
- Only do practice when doing activities.
- Need to be exposed to the real accounting world beyond the walls of the lecture hall.

A further analysis of the above main themes produced the subthemes below.

Subthemes merging from the main themes

- Students want practical learning experiences such as visiting an accounting firm, a sole trader or company to physically and actually apply theory into practice or at least observe the application of theory into practice in the real world of accounting.
- Rather than doing activities in the textbooks and previous tests and question papers, they would really want to go through the books of real business and learn from there.
- Learning from the textbook is always theoretical, even if the task itself is practical, which makes it difficult for them to establish the relationship between theory and practice.
- It would more easy to establish the relationship between theory and practice if accounting also had practical sessions like science subjects where the students are actually hands on.
- Visiting South African Revenue Services (SARS) can help them improve their ability to establish the relationship between theory and practice.

5. Explain whether or not you experience what you learn in the accounting class in your daily lives.

Justification for including the question in the focus group interviews

This question was informed by the notions of practical intelligence and social constructivism which predominantly emphasise learning activities that mirror the real life experiences of students. If the students can confidently confirm that they experience what they learn in the accounting class in their daily lives, it implies that their practical intelligence is promoted while social constructivist idea of active real life practical based learning is also sustained.

The main themes emerged from the qualitative data in respect of this question.

Main themes

- Not always
- Very limited opportunities.
- Development and promotion of practical intelligence very minimal.

A further probing of the above main themes produced the following subthemes.

- In most cases, what students learn in the classroom stays and remains there.
- They only experience issues such as Value Added Tax (VAT) when they perform transactions.
- They are always eager and curious to explore the practical side of accounting but there are very limited opportunities which they can purposefully and meaningfully create for themselves.
- Those in practice usually do not take them seriously in the few instances that they ask for practical opportunities.
- Most of the issues which they experience in their real lives are poverty, crime, unemployment, alcohol and drug abuse. These are socio-economic issues which are not directly related to the accounting content which they cover in the accounting curriculum.

6. Which approaches to curriculum implementation would you say best facilitate and enhance your realisation of analytical, creative and practical intelligences?

Justification for including the question in the focus group interviews

This question was inspired by Sternberg's (2002, 2008) and Sternberg and Grigorenko (2007) views on how the curriculum should be implemented to promote the analytical intelligence, creative intelligence and practical intelligence of students in the learning environment. By including this question, the aim of the researcher was to identify the students'' perceptions of curriculum implementation approaches which are consistent with multiple intelligences. The ultimate goal was to identify a specific curriculum implementation approach that is compatible with a specific type of multiple intelligence. The researcher believes that since these multiple intelligences are not the same, a blanket approach to curriculum implementation will not work as far as their fulfilment is concerned. The analytical intelligence, creative intelligence and practical intelligence of students cannot be taught, promoted and developed using a similar approach or teaching strategy.

The following main themes emerged from the qualitative data in this regard:

Main themes

- Student centred
- Guided instruction
- Social constructivism

From the above main themes, the following subthemes were identified.

- Cooperative learning
- Discovery learning
- Problem solving
- Discovery learning
- Experimental learning

7. How often do you do formal group activities (group discussions and group presentations, cooperative learning) in the accounting class? (responses can be expressed as a percentage of the last 10 lessons)

Justification for including the question in the focus group interviews

The rationale behind this question was to explore the students' learning experiences in the learning environment in light of social constructivist learning approaches. The researcher wanted to find out the frequency at which the curriculum was implemented through social constructivist approaches. The question also served to interrogate the quantitative findings on the approaches predominantly used to implement the curriculum, and then take an informed position on the extent to which curriculum implementation supported the students' multiple intelligences.

The main themes below emerged from the qualitative data generated for this question.

Main themes

- Very rare.
- Only direct instruction.

From the above main themes, the following subthemes emerged.

- The way in which the curriculum is implemented does not offer students the opportunity to engage in group discussions and presentations.
- They only had 3 group discussions out of 10 sessions.
- The curriculum is implemented through predominantly lecturer centred methods
- There is a serious need to shift from lecturer centred teaching methods to student centred methods such as group discussions and cooperative learning.

8. Explain how you would have benefited from these formal group activities if they were used frequently in the teaching and learning of accounting.

Justification for including the question in the focus group interviews

This was a follow up to Interview Question 3 above. The researcher wanted to find out if the students really understood the benefits and educational implications of social constructivist teaching approaches such as groups discussions and cooperative learning. The rationale was also to find out if there are any perceived differences in the benefits reaped by the students when they engage in accounting activities in their informal learning groups and when they engage in them in formal learning groups under the supervision of the lecturer. It was also informed by the views of Bandura (1998, 2001 & 2002) and Vygotsky (1978) on group learning in both the learning and social environment.

The following main themes were derived from the qualitative data obtained in respect of this question:

Main themes

- Academically and fulfilment of multiple intelligences
- Socially
- Motivation and encouragement

From the above main themes, the following subthemes emerged.

- Sharing and exchanging of ideas.
- Interpersonal skills such as communication, tolerance and handling of conflict.
- High confidence levels.
- Public speaking
- Improved understanding of subject content.
- Students challenge each other in terms of who will obtain the highest marks in a test or examination.

9. Explain the role predominantly played by the lecturer during instruction / lesson presentation.

Justification for including the question in the focus group interviews

The reason behind including this question was to explore the students' learning experiences through obtaining phenomenological descriptions of the role played by the lecturer in curriculum implementation. It was to obtain the students' perceptions of how the lecturer was implementing the curriculum, through explaining the lecturer's role in curriculum implementation. Obtaining detailed descriptions of the role played by the lecturer during instruction was perceived to be very significant towards describing how it feels like to access the accounting curriculum for first year accounting student teachers, and thus the students' learning experiences.

A thematic analysis of the qualitative data obtained to answer this question produced the following main themes.

Main themes

- Transmitter of knowledge, passing orders and instructions
- No detailed explanation of terms and concepts to make sure than students understand the content

From the above main theme, the following subthemes emerged.

- Direct instruction
- Reading for them from the textbook
- A source of knowledge.
- Giving orders and instructions.

10. What is the nature and kind of learning support you receive from the lecturer during instruction and from the start to the end of topic?

Justification for including the question in the focus group interviews

Similar to the main reasons behind Interview Question 9 above, the main reasons for including this question was to determine the kind of support offered to the students during instruction to support and promote their learning and understanding of the subject content. The researcher believes that the kind of support offered to students by their lecturer influences has some huge implications on the students' perceptions of their learning experiences. The kind of lecturer support towards the students' learning also helps one to identify the kind of approach being used to implement the curriculum. It was therefore deemed necessary to explore the students' learning experiences and the approaches used to implement the curriculum through identifying the nature and type learning support they received from the lecturer during instruction and from the start to the end of a new topic.

The following main themes emerged from the students' responses to this question.

Main themes

- Very minimal
- Not adequate and satisfactory.

From the above main themes, the following subthemes were established.

- No identification of prior learning
- New content is just introduced without linking it to the previous one.
- Students do not receive enough support from the lecturer to help them understand new content.
- Sometimes students feel as though they are on their own.
- They have to figure out things for themselves.
- They cannot rely on the lecturer's expert knowledge.
- This is why they have formed study groups
- The lecturer always assumes that every student in the lecture hall already understands the content.

- No attention is paid to the learning needs of individual students.
- It is either swim or sink in the lecture hall.

11. Explain how you are involved in the lesson during instruction as student

Justification for including the question in the focus group interviews

The purpose of this question was to provide the researcher with some insight into the learning experiences of the first year accounting student teachers through obtaining some phenomenological views from the students about how they are involved in the lessons. Ultimately, the responses informed and solidified the researcher's stance on the approaches predominantly used in curriculum implementation. How the students are involved in the lesson during instruction is not only a function of the lecturers' pedagogical philosophy but also depends on the teaching strategy being used.

The qualitative data generated to answer this question produced the main themes below.

Main themes

- Very passive
- Inactive
- No opportunity to ask questions or make additions

From the above main themes, the following subthemes arose.

- Just listening
- Only observing
- No open dialogue between the lecturer and the students.
- No question and answer sessions.
- Asking questions for clarifications during the lesson presentation regarded as an interruption and disturbance to the smooth flowing of the lesson.

12. How do you want future accounting lessons to be presented?

Justification for including the question in the focus group interviews

This question sought to obtain the students' views on curriculum implementation approaches which they perceived ideal in enhancing the kind of a learning environment and learning experiences which they envisaged. By presenting this question just after Interview Question 11 on their involvement in the teaching and learning process, this question offered the students an opportunity to reflect on their teaching and learning experiences and come up with their own preferred approach to implement the curriculum in ways that would make their learning experiences academically enabling and supportive. Getting such an approach to implement the curriculum from the students implies that it is informed by their dynamic learning needs and experiences. Thus, the ultimate purpose of this question was to discover the implications the students' current learning experiences have on curriculum implementation in future lessons.

The qualitative data generated to explore and answer this question produced the following main themes:

Main themes

- Student centred approach.
- More participative and unrestricted student involvement
- Social constructivist learning
- Guided instruction and discovery learning

Subthemes emerging from the main themes

- Allowing students to express themselves.
- Allowing students to ask questions
- Leading students to new conclusions about the subject matter and reality
- Asking students questions
- Group learning activities

- A warm learning environment in which there is open dialogue between the lecturer and the students

13. From what sources do your teaching and learning activities usually come?

Justification for including the question in the focus group interviews

The rationale for this question was to explore the learning experiences of students in light of the teaching and learning activities they encountered.

The main themes below emerged from the qualitative dada that was gathered in respect of this question.

Main themes

- Prescribed textbook
- Previous test and examination papers

From the above main themes, emerged the following subthemes.

- Students not exposed to a variety of accounting textbooks and sources
- All teaching and learning activities are taken from the prescribed textbook
- No alternative textbooks to supplement the prescribed textbook

14. Are learning activities designed and developed by the lecturer or not? Provide reasons for your answer.

Justification for including the question in the focus group interviews

It was meant to provide the researcher with some insight into the efforts put in by the accounting lecturer to provide the students with differentiated teaching and learning activities that are purposefully designed to cater for the learning needs of the individual students accessing the accounting curriculum. It is the researcher's firm view that learning activities must be modified by those involved in curriculum implementation to make them consistent with the realities in the learning

environment, paying particular attention to the individual and yet diverse needs of students.

The main theme below emerged from the students' responses to Interview Question 14.

Main theme

- Not all

From the above main theme, the following subthemes were identified:

- The lecturer only focuses on teaching and learning activities in the prescribed textbook.
- All tests and assignments are taken from the prescribed textbook.
- Most of them are not edited. They are just presented the way they are from the prescribed textbook.
- There is duplication of learning activities from previous years.
- No creativity from the lecturer in terms of developing teaching and learning material.
- No initiative to give students various and diverse teaching and learning activities.

15. What is the nature and type of activities in accounting which you enjoy the most? Provide reasons for your answer.

Justification for including the question in the focus group interviews

In identifying the nature and types of learning activities the students enjoyed the most, the aim of the researcher was to use this information to inform recommendations and implications for future teaching and learning activities. Teaching and learning activities are an undeniably fundamental aspect of curriculum implementation which have a direct effect on the students' learning experiences (Litmmanen, Loyens and Lonka, 2014; Cleveland and Fisher, 2014). It is therefore

imperative to find out from the students the nature and types of activities which they enjoy the most.

The qualitative data that was obtained to answer this question revealed the following main themes:

Main themes

- Practical activities
- Activities which students can relate to and bring in their personal views and perspectives.
- Learning activities whose importance the students understand.
- Group learning activities.

From the above main themes, the following subthemes were derived.

- Students enjoy doing teaching and learning activities which they can relate to in their daily lives and experiences.
- Teaching and learning activities are more enjoyable to students when they are meaningful to them.
- Application of acquired knowledge and skills is more enjoyable and meaningful to students than recalling of facts.
- Students enjoy teaching and learning activities in which they put theory into practice.
- Students enjoy teaching and learning activities in which they work in groups.
- Teaching and learning activities must always be constructivist oriented.
- Practical and group learning activities translate to enjoyable (positive) learning experiences.

16. How would you characterise or define a very interesting and meaningful lesson?

Justification for including the question in the focus group interviews

The purpose of this question was to obtain the students' views of their ideal interesting and meaningful lesson. This information was very instrumental in informing the recommendations made by the researcher on implementing the curriculum through approaches that make learning very interesting and meaningful to the students. Among others, the question was found to resonate very well with the sentiments of Metriana (2014), and Tokan and Imakulata (2019) on learning experiences, learning behaviour and student achievement.

The following main themes emerged from the qualitative data that was obtained to answer this question:

Main themes

- Student centred
- Participative and active involvement
- New meaningful insights
- Constructivist
- Guided instruction and discovery learning

From the above main themes, the following subthemes were established.

- Very high levels of student involvement and engagement
- A lesson which students can identify with and relate to
- A lesson in which they put theory into practice.
- A lesson in which they get a chance to learn and work in groups, sharing and exchanging ideas.
- A lesson in which students have to report to the class what they have learned and gained
- A lesson in which they can relate previously acquired knowledge to new knowledge. Seeing the relationship between old and new knowledge.

- A lesson which one would say has ended too soon
- A lesson in which students were led to arrive at new conclusions and perspectives of the subject matter and reality in their own unique ways.

17. Out of the last 10 lessons that you attended, how many lessons would fall within your characterisation and definition of an interesting and meaningful lesson and why?

Justification for including the question in the focus group interviews

The rationale behind this question was based on the idea of obtaining reflective and critical feedback from the students regarding their learning experiences as advanced by Killen (2016). This is regarded as a signpost for any future attempts to improve the students' learning experiences. Thus, this question was meant to get first-hand information from the students themselves regarding their learning experiences. In addition, the qualitative data for this question was meant to triangulate the students' responses on Interview Question 16 above. This question also serve to give the researcher a profound sense of what it feels like to access the accounting curriculum in the learning environment created by the accounting lecturer. Lastly, it was meant to establish the extent to which the students' learning experiences were within their envisaged definition of an interesting and meaningful lesson and the degree to which the students found relevance and meaning in their learning experiences.

The following main theme emerged from the qualitative data that was generated for this question:

Main theme

- Significantly few

From the main theme above, the following subthemes emerged.

- Two - three out of 10 lessons
- The lecturer is always reading to the students and pouring information into them
- Lessons are boring, not interesting and not inspiring.

- Students not looking forward to the next lesson
- Very dull lessons
- Students falling asleep during the lesson
- Students not attending lesson on a regular basis

18. What could the lecturer have done to enhance your learning experiences and make them more positive and academically enabling?

Justification for including the question in the focus group interviews

The purpose of this question was to present the students with an opportunity to reflect on their phenomenological learning experiences and come up with suggestions to mitigate the shortcomings and deficiencies of the approach currently being used to implement the curriculum. By allowing the students to adopt a critical reflection of their learning experiences, this question sought to use the students' perceptions of positive and academically learning experiences as a basic point of departure for any recommendations on how future learning experiences should be shaped. The information on what could have been done to make learning experiences more positive and academically enabling was also very instrumental in determining through the eyes of the students, the role played by the lecturer when implementing the curriculum as suggested by Fayombo (2015); Fardon (2013); McKernan (2008); Killen (2016); Mapuya (2018); Riener and Willingham (2010); and Visser and Vreken (2013).

The main themes below emerged from the qualitative data in respect of this question:

Main themes

- Student centred approach.
- More participative and unrestricted student involvement
- Guided instruction and discovery learning

The following subthemes emerged from the above main the themes.

- Allowing students to express themselves.
- Allowing students to ask questions
- Leading students to arrive at new conclusions about the subject matter and reality in general
- Asking students questions
- Group learning activities
- Creating a warm learning environment in which there is an open dialogue between the lecturer and the students and amongst students themselves through group work activities or cooperative learning

19. Based on your previous teaching and learning experiences in the lecture hall, would you recommend future prospective students to enrol for this module? Please explain your answer.

Justification for including the question in the focus group interviews

The reason behind this question was to determine whether or not the students were optimistic about future classes in the midst of the manner in which the curriculum was being implemented and also in light of their learning experiences. To some extent, it was envisaged that the students' responses for this question would reveal the extent to which it was necessary to adopt a paradigm shift in curriculum implementation approaches. Its inclusion was also inspired by the pedagogical views of Cleveland and Fisher (2014); Litmmanen, Loyens and Lonka (2014) and Tokan and Imakulata (2019).

Main themes

- No
- Very unlikely

The subthemes below emerged from the main themes above.

- The high failure rate of students in this module is very disturbing.

- Reluctant to let any person go through and experience the current accounting classes
- Curriculum implementation very undesirable.
- Students have very bad and negative experiences.

The qualitative data from the focus group interviews will now be discussed in light of the main themes and subthemes that have been presented above.

5.3 DISCUSSION OF MAIN THEMES AND SUBTHEMES EMERGING FROM THE FOCUS GROUP INTERVIEWS

Apart from being phenomenally inclined towards the quantitative findings, the questions that were deliberated upon during the focus group interviews were informed by the views of Krause, Bochner, Duchesne and McMaugh (2010); Ormrod (2014a and 2014b); Pal, Pal and Tourani (2004); Sternberg (1985, 2002, 2008); Sternberg and Detterman (1986); Sternberg and Grigorenko (2007) and Vygotsky (1978). The views of these scholars were found to resonate significantly well with multiple intelligences, guided instruction, social constructivism and learning experiences which are at the centre of this study. While the issues canvassed during the focus group interviews were anchored around a host of questions formulated from the quantitative and qualitative findings of the open and closed ended sections of the questionnaire, the crux of the matter came down to three key broad themes. Thus the themes which emerged from the focus group interviews were categorised under the broad categories of multiple intelligences, curriculum implementation approaches and the learning experiences of students and implications for curriculum implementation.

It is also important at this juncture to reiterate that this study was rooted in the ontological and epistemological foundations of social constructivism and multiple intelligences. Subsequently, the questions for the focus group interviews were designed to explore the social constructivist and multiple intelligences aspects of the students' learning experiences and curriculum implementation. As such, some of the subthemes included teaching and learning activities, curriculum implementation approaches, the students' learning experiences and the implications for both theory and practice.

The subthemes included under the main theme of multiple intelligences are analytical intelligence, creative intelligence and practical intelligence. Guided instruction and social constructivism are some of the subthemes that are discussed under curriculum implementation approaches. The broad theme of the students' learning experiences encompasses issues such as the students' interpretation of their learning experiences, the kind of learning support they get from the lecturer and their general views on the teaching and learning activities they encounter in the lecture hall.

Given the fact that these focus group interviews were phenomenologically oriented, the questions were presented and formulated in such a way that they spoke to each other so as to identify similarities and inconsistencies in the students' responses. The questions were thus probing and emphatic in nature. All the questions (cf. Appendix 5) were designed to appeal to at least one or more of the study variables and the fundamental assumptions of the theoretical frameworks.

In the section below, the qualitative findings relating to the main themes of multiple intelligences, curriculum implementation strategies, learning experiences of students and implications for curriculum implementation will be discussed as they have been presented.

5.3.1 MAIN THEME: MULTIPLE INTELLIGENCES

Without referring to any specific learning activities that they encounter in the lecture hall, the students demonstrated that they have adequate understanding of the various terms that can be used to promote their multiple intelligences and that of others. They came up with examples which gave the researcher confidence in the quantitative findings on the frequency at which they encounter learning activities which appeal to multiple intelligences.

By coming up with correct and relevant examples of learning tasks that appeal to multiple intelligences, the students did not only demonstrate adequate comprehension of analytical, creative and practical intelligences, but they also proved a convincing ability to identify and differentiate them in teaching and learning activities.

For instance, participant **A4** in **FGI GA** remarked:

> *Mr Mapuya, a question like, use the diminishing balance method to calculate the depreciation of an asset requires us to apply what we have learnt using a given formula.*

In **FGI GE**, student **E1** suggested:

> *When we are evaluating the stock loss of a sole trader over a given accounting period, we are being analytical.*

The above views were also corroborated by student **C6** in **FGI GC** who mentioned that:

> *Mnr,* [Sir] *an activity which requires us to imagine what would happen to the sales of a company when the profit margin is increased tests our ability to create. We need to visualise.*

Premised on the above responses, it can be argued convincingly that the quantitative scores of students were neither rhetoric nor based on sentimental reasons. Instead, they were informed by a thoughtful and careful reflection on the various kinds of learning activities they encounter and what those learning activities required them to do. Furthermore, the students showed considerable understanding of the cognitive and thought process that they engage in when dealing with specific learning activities. In proving that they did not just score multiple intelligences for procedural purposes, the students assured the researcher that their scores presented a reasonably accurate phenomenological reflection of the nature and types of teaching and learning activities they encounter.

A thematic analysis of the students' responses to questions related to age and gender and multiple intelligences revealed that they unilaterally agree that age and gender have no effect on their ability to identify and relate to teaching and learning activities that appeal to analytical intelligence, creative intelligence, practical intelligence, guided instruction and social constructivism. The students believe that age and gender do not have a bearing on their perceptions of multiple intelligences, guided instruction and social constructivism. To support this finding, reference can be made to the views of student **H1** in **FGI GH**. To the applause of all the other students in the group, student **H1 in FGI GH,** remarked:

> *Sir, my ability to define, analyse, create and put something into practice has nothing to do with my gender. It will also be impossible to design and develop learning activities ideal for male and female students separately.*

A similar view was also conveyed in **FGI GB** when participant **B6** argued:

> *If the learning activities are pitched at the right cognitive level and relevant year level, neither age nor gender will influence my ability engage on the various learning activities that appeal to the various types of multiple intelligences.*

The views of students in **FGI GE** were summarised by student **E3** who concluded that:

> *Ntate,* [Sir] *my personal understanding of the terms used to promote analytical, creative and practical intelligence is the one which influences my ability to identify and recognise the learning activities as such.*

Responding to the same question, student **D5 in FGI GD** remarked jokingly:

> *Mr Mapuya, it is only in sports where age and gender matter the most, not in the classroom where all the students encounter similar learning activities under similar conditions, at the same year level, for a similar qualification.*

From the above responses, it is evident that the students are in one accord that their ability to identify and related to learning activities that appeal to multiple intelligences is not a function of age or gender. A similar sentiment was communicated regarding guided instruction and social constructivism.

However, the phenomenological verdicts of the students during the focus group interviews suggest that the provisions and pedagogical assumptions of multiple intelligences are neglected in the teaching and learning of accounting. The students maintained that the teaching and learning activities they encounter in the learning environment bear very little resemblance to the pedagogical imperatives advocated by the theory of multiple intelligences as a whole.

The findings relating to the subthemes that emerged under multiple intelligences will now be discussed below. They will be presented and discussed as analytical intelligence, practical intelligence and creative intelligence, noting that they all fall under the broad theme of multiple intelligences.

5.3.2 Subthemes of Multiple Intelligences

In presenting the subthemes that emerged under multiple intelligences, analytical intelligence will be discussed first.

- **Analytical Intelligence**

Despite the very limited application of the ideas of multiple intelligences in the teaching and learning of accounting as revealed by the students above, analytical intelligence was found to be partially promoted and developed. The phenomenological voices of students are unanimous that they are sometimes exposed to teaching and learning activities that appeal to analytical intelligence. Furthermore, they suggest that this emanates from textbook activities which the lecturer requires them to do.

Qualitative evidence in support of the above can be found in the response of student **A4** in **FGI GA** who said:

> *Ntate [Mr] Mapuya, nna [I], I can only say that as accounting students, we are forced to compare and contrast and to critically evaluate by the activities from the textbook.*

In allusion to the above sentiments, student **G3** in **FGI GH** added:

> *Mr Mapuya, we may not necessarily come across these terms during the lesson regularly, but we know they are waiting for us in the textbooks. They expect us to analyse transactions and other things that we don't understand.*

Perhaps a more humorous response came from student **E3** in **FGI GE** who jokingly complained:

> *Ntate [Mr], like law students, we are sometimes expected to assess various scenarios in accounting and make a judgement thereafter.*

On the basis of the above, it can thus be concluded that while the students are exposed to teaching and learning activities which do not promote multiple intelligences holistically, they encounter activities which related to analytical intelligence. However, these findings also provide a sound basis to argue that these activities which promote the analytical intelligence of students are not necessarily developed by the lecturer. Instead, they are taken directly from the textbook, indicating some serious deficiencies in the lecturer's role towards developing individualised and differentiated activities to promote the analytical intelligence of students.

To corroborate the above narrative, student **F4** in **FGI GF** went on to lament that:

> *Mnr* [Sir], *rona [we] are required to analyse situations that took place somewhere else and then decide or judge about which one is ethical or not, which one is profitable or not. It's always a challenge Sir.*

A very close analysis of the above sentiments suggests that administering activities which include all the necessary key words for analytical intelligence in the teaching and learning of accounting does not necessarily promote the analytical intelligence of students. Instead, students need to have a contextual background and deep understanding of the transactions and activities before they can meaningfully critique, judge, compare and contrast, evaluate and assess. It therefore follows that prior knowledge is an essential prerequisite for students to purposefully and meaningfully engage in activities which seek to promote their analytical intelligence.

The following discussion is based on practical intelligence as a sub theme of multiple intelligences.

- **Practical Intelligence**

The students' responses to questions relating to practical intelligence reaffirm their earlier sentiments expressed in the quantitative data. The students are all in agreement that they rarely experience what they learn in the accounting class in their daily lives. The responses indicate that the practical intelligence of students is not promoted and developed beyond the classroom. Referring to the rare occasion where they are actually observers of what they learn in the accounting lesson, student **H1** in **FGI GH** remarked:

> *I would say the only time one experiences accounting as a student in the world is on a till slip after making a purchase.*

In support of this view, student **H5** added:

> *Yes sir, VAT[1], maybe, because all the other activities we do cannot be easily experienced in society.*

Similar views emerged from all the other groups, with particular reference to student **D6** in **FGI GD**, who noted:

> *Guys, even the share prices on the Johannesburg Stock Exchange (JSE[2]) that appear on TV during business news are very remote from what we do in class. I don't remember experiencing the many rations that crack our heads in class.*

The failure of students to relate what they learn in the lecture hall to their daily life experiences beyond the classroom is contrary to both the assumptions of social constructivism and practical intelligence.

From the analysis of the students' responses to the five questions that are directly related to multiple intelligences, it is evident that while the students have sufficient understanding of analytical intelligence, creative intelligence and practical intelligence, these intelligences are not promoted and developed further beyond the classroom. Practical intelligence and creative intelligence are the most neglected ones. The following section will now discuss the themes and subthemes that emerged from the

[1] Value Added Tax
[2] Johannesburg Stock Exchange

questions that appealed to the students' perceptions of approaches for curriculum implementation and multiple intelligences.

In addition, referring to subthemes that emerged from the students' responses to questions related to practical intelligence, the students are in agreement that owing to a predominantly theoretical learning environment, they sometimes struggle to practically establish the difference between theory and practice in accounting, even though the subject itself is fundamentally rooted in practice. Correspondingly, the students are adamant that even though they usually engage in learning activities which are based on practical situations and transactions, this does not relate to practical learning experiences similar to that of subjects such as physical science. This general feeling is summed up by student **E5** in **FGI GE**, who commented:

> *Mnr* [Sir], *nna* [I] *the way I see it is that it would have been very easy for us to establish this relationship between theory and practice if we had practical sessions, like the sciences students. As long as we continue doing accounting in the cubicles and classrooms, nna* [I], *I am afraid that we will always struggle to establish this relationship between theory and practice. Mr Mapuya, we need an accounting laboratory. We need to feel accounting and experience it with all our senses where possible.*

While this verbatim seems more emotional, out of context and desperate, the fact that all the other students in **FGI GE** nodded their heads in allusion to these sentiments by student **E5** provides enough testimony to the students' frustrations over the absence of exposure to practical learning experiences in the real world of accounting. The extent of the students' desperation in being exposed to the real world of accounting is further sustained by their calls to visit places such as SARS and other relevant entities in the real world where they can actually put theory into practice. Having considered their various responses, it is clear that the only way the students can be able to comfortably and confidently establish the relationship between theory and practice is when they get exposed to where theory and practice converge. When the students can establish this relationship between theory and practice, their analytical intelligence is also stimulated and nourished, given that in so doing, they will be involved in either one or more of critiquing, judging, comparing and contrasting, evaluating and assessing.

Furthermore, in promoting and developing the practical intelligences of students, real life practical learning experiences also appeal to the creative intelligence of students.

Students put into practice what they have acquired from the learning environment and interactions with their classmates and the lecturer to find a solution to a problem and come with something new. For instance, practical learning experiences would culminate in offering the students opportunities to engage in activities such as drawing up or creating a cash budget, cash flow statement, income statement and balance sheet. Such activities are consistent with the promotion and stimulation of creative intelligence. In the absence of learning activities and experiences which nurture practical intelligence, the growth and development of the students' creative intelligence is also neglected. Thus, this study has established a link between practical intelligence and creative intelligence of the students with the latter not being developed.

The qualitative findings with regard to creative intelligence will now be discussed below in detail.

- **Creative Intelligence**

Premised on the phenomenological perspectives of students, creative intelligence is not promoted at all in the teaching and learning environment of accounting. The students are adamant that they hardly encounter activities which promote and stimulate their creative intelligence. Instead, they always reproduce what they have memorised from the memoranda and give it back to the lecturer the way they memorised it.

To attest to the above, student **A2** in **FGI GA**, lamented:

> *Mosuwe* [Teacher], *we always know what to expect in the tests and exams, even though we end up failing because under test and examination conditions, one can easily forget memorised things. With regard to financial statements, we always know that we will be required to draw up an income statement and a balance sheet. This compels us to memorise the structure of these financial statements.*

Responding to a similar question in **FGI GF,** student **F4** made a very serious and strong confession which has some important implications on creative intelligence as a subtheme of this study. Accordingly, student **F4** confessed:

> *Ntate [Mr] Mapuya, doing activities and preparing for formal assessments in our small study groups, we always try to memorise the structure of these financial statements because it never changes. It is not like we have to start our own structure from the start in any case. I don't remember the last time I had to crack my head to make something new in class or in tests and exams.*

In **FGI GC, student C3** alluded*:*

> *Sir, we always rely on our memorisation skills to go through this degree, passing with 50% and sometimes writing re-assessments. This thing of inventing, predicting and discovering is for students in the sciences, not us because we never do it in class with our lecturer.*

From the above voices of students, it is not only beyond any reasonable doubt that creative intelligence is neglected in the learning environment of this study. It has also revealed some phenomenal shortcomings in lecturer creativity when it comes to the formulation and presentation of teaching and learning activities. All the students are in agreement that the teaching and learning activities they are exposed to are not changed or adapted and updated. Instead, learning activities are always repeated over and over thereby denying students exposure to new activities which ignite and stimulate creativity

Another important finding emerging from the above phenomenological verdicts of students is that creative intelligence is fundamentally compromised and hampered when teaching and learning activities are simply repeated without varying and changing them continuously. It is evidently clear from the students' voices that for creative intelligence to be promoted and advanced, in the learning environment, it is imperative for those involved in curriculum implementation to constantly change and vary teaching and learning activities. The study has not only revealed that when learning activities are always repeated, students do not come across anything new in the learning environment.

But it has also demonstrated beyond any doubt that creative intelligence is promoted when students are exposed to new activities which arouse their interest and curiosity to make new discoveries and arrive at new conclusions. Further to the above findings, the students' sentiments also suggest that when creative intelligence is neglected in the learning environment, the students' desire to invent, predict, make some imaginations and suppositions is severely diminished. This is because learning becomes boring, meaningless and purposeless. Learning also becomes too predictable for students to remain inspired and motivated towards discover new horizons within the realms of the subject matter.

Another important finding emerging from the focus group interviews is that when creative intelligence is neglect in the learning environment, students tend to resort rote

learning and memorisation of facts and subject matter. Student **B2** in **FGI GB** alludes to this finding by saying:

> *Mr Mapuya, even though we don't get distinctions, we always know what to expect in tests and exams and study accordingly. Nothing less, nothing more.*

It therefore follows that the advancement and promotion of creative intelligence in the learning environment calls upon those involved in curriculum implementation to make sure that learning activities are revised and updated enough to challenge students to think out of the box and come out with something new of their own. Thus creative intelligence and meaningful learning have been found to be positively related to unpredictable learning activities which require students to use what they have learned to arrive at a new conclusion and make new discoveries.

In the upcoming section, the main theme of curriculum implementation approaches will be discussed as it has been earlier presented.

5.4.1 MAIN THEME: CURRICULUM IMPLEMENTATION APPROACHES

To further explore and portray a comprehensive account of the students' perceptions of curriculum implementation approaches that can enhance and promote their multiple intelligences and academic success, a set of seven intertwined questions were developed and discussed in the focus group interviews. Among others, these questions touched on the students' preferred approaches for curriculum implementation, with special bias towards social constructivist teaching approaches and guided instruction and the dominant role played by the lecturer in curriculum implementation.

Another equally significant aspect to be considered before deliberating on the themes and subthemes that emerged from the students' responses is the stance taken by the researcher on curriculum implementation approaches and the fulfilment of multiple intelligences. As indicated in the research design and methodology chapter (cf.3.5.6), the approaches used to implement the curriculum are an independent variable which influences the students' realisation of multiple intelligences and ultimate academic benefits. As such, it was deemed necessary to include questions to explore this particular position

The thematic analysis of the students' responses on their perceptions of curriculum implementation approaches which best satisfy and develop their analytical

intelligence, creative intelligence and practical intelligence pointed to student centred approaches and social constructivist learning. From the students' responses, it was revealed that curriculum implementation approaches that are student centred resonate significantly well with multiple intelligences. It was further established that the various teaching strategies that fall within the social constructivist paradigm are consistent with multiple intelligences and promote them individually in their own unique ways.

The students were united in saying that for their analytical intelligence, creative intelligence and practical intelligence to be adequately satisfied and fulfilled, they need to access the curriculum through approaches that make it possible for them to be actively involved and engaged in the teaching and learning process. All students are unanimous that student centred curriculum implementation approaches are suitable to promote and advance multiple intelligences. In support of the above findings, student **F6** in **FGI GF** commented:

> *Mnr* [Sir], *my ability to argue, reason and analyse is developed well when we learn in groups in as much as my ability to come up with new ideas and products depends on how much ideas we share in those learning groups.*

This line of thought was also sustained by student **A2** in **FGI GA** who said:

> *Learning in groups works very well to promote our ability to accurately draw up financial statements, budgets and cash flow statements. Drawing them up alone is always a nightmare.*

However, they still believed that the lecturer should be more of a facilitator of the teaching and learning process than a transmitter of knowledge in absolute terms, where there are no active interactions between him and the students. It was concluded that for the various types of multiple intelligences to be effectively developed and promoted, the learning environment should promote cognitively stimulating debates and interactions among all the participants involved, with the lecturer being there to provide guidance, direct and maintain order. Moreover, the views of student **F6 in FGI GF** presented above indicate that the various cognitive levels of students, as advanced by the Bloom's taxonomy can also be best realised through the use of social constructivist learning approaches in curriculum implementation.

The subthemes of individual curriculum implementation approaches which emerged from the qualitative findings will now be discussed below, starting with guided instruction

5.4.2 Subthemes of Curriculum Implementation Approaches

The following subthemes emerged under the main theme of curriculum implementation approaches.

- **Guided Instruction**

Guided instruction has been found not to be used during curriculum implantation in the accounting learning environment but in other learning areas outside the teaching and learning of accounting. This has been attributed to the excessive use of lecturer centred curriculum implementation approaches in the accounting learning environment. However, the design and implementation features of guided instruction as a curriculum implementation approach have emerged as a strong compelling factor to advocate for its use towards the realisation and fulfilment of multiple intelligences in the learning environment.

Students are unanimous that as a component of guided instruction, scaffolding remains an important strategy to promote and develop their cognitive abilities and capacities in multiple intelligences.

To endorse this finding, student **B3** in **FGI GB** remarked:

> *We hardly receive hints in the form of words and phrases that can lead us to the correct answer in our accounting classes, but our experiences with this practice in other classes have proved to be very useful in stimulating our thinking and arrival at the correct answer.*

In support of the mental effect of guided instruction towards the realisation of multiple intelligences, student **H6** in **FGI GH** remarked:

> *I am encouraged to think deeper when the lecturer is giving me those leads.*

In another focus group interview session, support for guided instruction as a curriculum implementation approach was summarised by student ***E2*** *in* ***FGI GE*** whose views were captured as:

> *I feel very excited and inspired to think out of the box when the lecturer takes his time to stretch and guide my thinking. It's always comforting to know that my thinking is being channelled towards the right direction.*

D4 in **FGI GD**

> *When I am being blindfolded, I feel confident to make mistakes in my thinking and reasoning because I know that I am being guided.*

In a different and yet very important perspective towards scaffolding, student **F1** in **FGI GF**

> *I agree with my classmates, but this issue of hints and leading words and phrases that can help us arrive at the expected response of conclusion can only work of this guy involves us more in the lesson. But because the accounting lessons are always a sermon, we can only dream about this blindfolding learning.*

A particularly important finding with regard to guided instruction is that it promotes and facilitates the creative intelligence of students. This is summed up in the phenomenological sentiments of student **H4** in **FGI GH** who exclaimed:

> *I am always convinced that through the lecturer's leading questions and hints, I am bound to arrive at new conclusions. My ability to make some subject related imaginations and suppositions is stretched.*

These sentiments suggest that guided instruction improves and enhances the students' confidence to be more creative, there by promoting their creative intelligence. Creative intelligence is therefore dependent on the students' self-efficacy levels, which in turn is influenced by lecturer support. Students who receive guided instruction during teaching and learning in this study have alluded that the realisation of their creative intelligence is greatly enhanced.

In **FGI GB,** student **B3** had this to say:

> *Through all my psychological and mental thinking, I know that I will never walk alone when the lecturer is there to lead me.*

The views expressed above present compelling qualitative evidence to suggest that guided instruction inspires and motivates students to reach their highest creative potential in the teaching and learning environment and in life in general. Through the use of guided instruction in curriculum implementation, lecturers can not only stimulate and arouse the creative ability of students, but they can also inspire them and make them more confident to take the risk of being creative. This is because the students are aware and unanimous that the lecturer's hints and leading questions and words or phrases guide them to make correct discoveries, imaginations, suppositions and to arrive at new conclusions regarding the subject content.

From the foregoing analysis of the students' verdicts, it can be argued that this study presents a tentative anatomy of how guided instruction promotes sustainable, meaningful and purposeful student participation in the teaching and learning process. Most importantly, the students' responses point to the compatibility between guided instruction, discovery learning, inquiry learning and self-regulated learning. Further to this, the role of the lecturer in the implementation of guided instruction has been explicitly identified as significantly instrumental in laying the foundation for discovery learning, inquiry learning and self-regulated learning.

Qualitative evidence in support of the above finding is summed up in the views of student **C2** in **FGI GC** who said:

> *It is true that if we are to get more leading questions and hints to facilitate our thinking, reasoning and quest to learn, there will be a knowledge gap that we will be eager and enthusiastic to fill. And nna [me] from my experience in the other classes, sometimes the quest to fill this knowledge gap goes beyond the classroom.*

Evidently, guided instruction if used expertly and correctly, can stimulate and promote sustainable learning beyond the classroom. It has also been found to be very effective in realising the students' middle to higher order thinking skills such as analysing, interpreting, evaluating and creating, both of which are important in multiple intelligences. Lastly, guided instruction has emerged as an ideal curriculum implementation approach for optimal active involvement and participation of both the lecturer and students in the teaching and learning process.

The following section presents an analysis of social constructivism as a subtheme of curriculum implementation approaches.

- **Social Constructivism**

Social constructivism will not only be discussed in terms of its usage and application in the learning environment of accounting, but also in terms of its desirability among students as an ideal curriculum implementation approach. Additionally, the discussion on the qualitative findings on social constructivism will also look at its suitability in promoting and advancing the provisions and pedagogical perspectives of multiple intelligences.

The qualitative and phenomenological voices of the students emerging from the focus group interviews point to the inadequate and very limited use of social constructivism

in the learning environment. Evidence generated from questions which sought to establish the use of social constructivist approaches in curriculum implementation indicate that social constructivist approaches such as group discussion are not frequently used to implement the curriculum. The approaches currently being used in curriculum implementation do not conform to the precepts of social constructivism. Additionally, these findings are in direct opposition with the students' perceptions of ideal approaches that can be used to promote their multiple intelligences as earlier presented in Table 5.2.

To create a more accurate view of the extent to which group discussions and group presentations are used in curriculum implementation, the students indicated that only 3 of the last 10 sessions they could remember had some unstructured and informal group discussions. This translates to a 30% implementation rate of social constructivist learning approaches which promote the students' multiple intelligences. Expressing some frustration over the lack of formal and well organised group learning opportunities, student **A2** in **FGI GA** lamented,

> *We wish we can have group sessions in accounting so that we can interact with some students because we are all just sitting there, listening and bored.*

The overall feeling among the students is that owing to the scarcity of social constructivist teaching approaches in curriculum implementation which make learning a more interesting, motivating and academically enabling experience, they usually find the lessons very dull and boring.

To compensate for the pedagogical deficiencies of a predominantly lecturer centred learning environment and the absence of constructivist teaching approaches, the students indicated that they had resorted to study groups. It was found that the students have very functional and effective study groups which they formed based on their personal relations with each other. Some students formed study groups in which they studied and practiced together because they stayed in the same vicinity and it was therefore convenient for them to do so, while others grouped themselves based on social reasons. From these focus group interviews, the students demonstrated a very strong appreciation and positive outlook towards study groups. They argued that preparing for tests and examinations together as a group stimulated and promoted their academic performance in accounting. In support of the educational benefits of study groups, student **G6** in **FGI GH** remarked:

> *Nna* [I], *I believe that two heads are better than one. When we do accounting in a group, I analyse, this one explains, the other one draws, the other one calculates and the other one evaluates. All in one session. This actually makes it easy and enjoyable.*

The remarks of student **G6** above points to cooperative learning and also attests to the academic benefits and educational implications of shared and collective learning.

A similar sentiment was conveyed in **FGI GC** by student **C2** who commented:

> *As students, we have come to realise that one can never do accounting alone and pass it alone. You need others.*

The comments of student **C2** above show the amount of support the students give to one another in their studying of accounting. The students maintained that after a disastrous performance in a test or exam, they are comforted, encouraged and consoled by their study group members who usually advise them never to give up.

Another subtheme which emerged is that the nature and type of the content covered in the accounting curriculum requires students for learn in groups where they can interrogate the content itself and debate among themselves. This is evidenced by the comments of student **B6** in **FGI GB** who said:

> *To learn accounting in a conversational style, we formed an informal study group. It is always nice to share and exchange ideas when going through question papers and exercises from the textbook.*

The findings from the students' responses as presented above indicate that through learning in groups, where different students specialise in different parts of learning activities, their analytical, creative and practical intelligences are promoted. Learning together in study groups was found to compensate for the weak types of multiple intelligences among students while exploiting their strong multiple intelligences. It was also found to promote collective ownership of the academic progress of each individual student in the study group. This is one of the cornerstones of cooperative learning, which by default, is a social constructivist teaching method. Thus social constructivism was found to be highly compatible with multiple intelligences.

Another equally important finding which emerged from the qualitative data is that informal learning groups are not always productive and effective. Some students bemoaned that the absence of a facilitator or someone with authority and superior knowledge in accounting sometimes led them astray. In some instances, the students

would even deviate from the learning task on hand and deliberate on issues that had nothing to do with what they were doing. Some indicated that at times they required confirmation of their ideas, conclusions and calculations, especially for learning activities which had no memorandums as point of reference. This was not readily available in their informal study groups.

It was also revealed that the absence of an authoritative learning facilitator sometimes resulted in the study groups being unorderly and chaotic, which was very discouraging to them. Similar to curriculum implementation under guided instruction, social constructivist approaches have also been found to heavily depend on the lecturer. Thus the role of the lecturer as a learning mediator and knowledgeable person in the learning environment still remains indispensable.

In the following paragraphs, attention will be paid to the broad theme of the students' learning experiences and the implications these learning experiences have on curriculum implementation approaches.

5.5.1 MAIN THEME: LEARNING EXPERIENCES OF STUDENTS AND IMPLICATIONS FOR CURRICULUM IMPLEMENTATION

This section focuses on the themes and subthemes that emerged from questions that were based on the students' learning experiences and implications for curriculum implementation. The reason why this aspect of the study was allocated the highest number of questions is because it also includes teaching approaches, learning activities and multiple intelligences. The students' learning experiences and implications for curriculum implementation are then discussed in light of these key variables. Therefore, this section presents the students' detailed phenomenological learning experiences and implications for curriculum implementation. It captures how students interpret their learning activities and ascribe meaning to their learning experiences. It also looks at the nature and types of teaching activities which the students are exposed to as they access the accounting curriculum.

A major finding emerging from the main theme of the learning experiences and implications for curriculum implementation is that the way in which the lesson is structured and conducted has a huge impact on how students experience learning in that specific learning environment. Thus this study established that curriculum implementation approaches influence and determine how students experience

learning, which is their learning experiences. The students' responses suggested that student centred curriculum implementation approaches are highly associated with positive and desirable learning experiences. With positive learning experiences, students maintained that their resilience, determination and motivation to pursue educational objectives are highly enhanced. The students were all in agreement that student centred curriculum implementation approaches do not only inspire and arouse and their interest in the lesson, but they also empower and make them self-regulated to continue with learning beyond the classroom.

The above findings are supported by student **H6** in **FGI GH** who remarked:

> *When I am actively involved in the lesson, I naturally enjoy it and will always remember such a lesson.*

In **FGI GE,** student **E5** has this to say in support of the above:

> *I always look forward to learning when I know that I will be given the opportunity to participate and make the lesson a success.*

Similarly, student **C3** in **FGI GC** simply said:

Sir, as students, we feel encouraged to prepare for lesson in which our views are important

On the other hand, highly lecturer centred curriculum implementation approaches present students with negative learning experiences. The reason advanced for this analogy is that highly lecturer centred curriculum implementation approaches significantly limit and minimise the active participation and involvement of students in the lesson. By denying students active participation and involvement in the lesson, highly lecturer centred curriculum implementation approaches make learning experiences boring, dull, meaningless and purposeless. Students found it very challenging to listen and follow meaningfully in lessons where they are not involved.

The above findings are endorsed by students **B5** and **B1** in **FGI GB,** who shouted in one voice:

> *We simply switch off into sleep mode when we are being preached to in class*

In student **FGI GD,** student **D4,** conveyed a similar view by saying:

Being forced to listen to someone who thinks that you don't know anything is a very boring experience.

Another significant finding emerging under the students' learning experiences and implications for curriculum implementation is that a predominantly lecturer centred learning environment makes students to feel marginalised and excluded in the teaching and learning process. By default, this culminates in negative learning experiences. Findings in the study have established that once the student encounter negative learning experiences in the learning environment, they tend to develop a negative attitude towards teaching and learning. This has been found result in poor class attendance and high failure rates.

Confirmation of the above findings is imbedded in the phenomenological voice of student **C5** in **FGI GC,** who complained:

> *In our discussions as students, we always chat and agree that this accounting guy makes us feel useless and demoralised. He simply does his things on his own as if he is not working with people who have brains.*

A similar view was shared by student **D1** in **FGI GD** who had this to say:

> *There are many times when I nearly exploded and told him that he is insulting our intelligence by assuming that we just have to sit there and listen to his boring presentations without any form of participation. To avoid any further conflict, me and my friends have decided not to attend his classes anymore. We are on our own.*

The subthemes that emerged under the students' learning experiences and implications for curriculum implementation will now be discussed.

5.5.2 Subthemes of the Learning Experiences of Students and Implications for Curriculum Implementation

The two subthemes which emerged under the broad theme of the students' learning experiences, are the students' interpretation of their learning experiences and the kind of learning support they get from the lecturer. The discussion of these two subthemes follows below.

- **The students' interpretation of their learning experiences and the role of the lecturer.**

The phenomenological findings produced by the qualitative data in respect of questions related to the students' learning experiences indicate that the predominant role of the lecturer during instruction is to impart knowledge to the students in a lecturer centred approach. It also emerged that the lecturer merely transmits facts to the

students in a direct one-way communication style in which there is no interaction and discussion of content with the students. The impression created by the students of the role played by the lecturer during instruction is that of an absolute source of knowledge, whose role is therefore to pour out this knowledge to the students, with no effort to consider how they receive, encode and understand it.

The findings above are confirmed by student **F3** in **FGI GF** who complained that:

> *As students, we are just like passengers in a bus, waiting for the driver to take us to an unknown destination, via an unknown route. All we do is so simply sit there and observe.*

Student **H1** in **FGI GH** confirmed the above complain by citing that:

> *Sir, I am sure that our lecturer dose not even know our voices and how we speak because we hardly speak and interact in class. It is always his voice throughout the entire lesson. No questions at all. Maybe it's because he likes keeping things under his tight control.*

All in all, the dominant views coming from the students regarding their interpretation of their learning experiences in the teaching and learning process is that they are regarded as passive object who are there to simply receive and absorb facts without being actively involved in the lesson itself. It is important to note that as revealed by the students, the dominant role played by the lecturer during instruction is contrary to the assumptions of social constructivist teaching and makes it impossible for students to develop cognitively, grow and advance their multiple intelligences. Thus the students interpret their learning experiences as anti-social constructivism, academically disempowering and not conforming to the ideas of multiple intelligences. Lastly, the learning experiences of students do not provide for the various cognitive levels of students in the learning environment itself.

Further to the above findings, the students are passively and inactively involved in the teaching and learning process. There is no form of interaction and engagement between the students and the lecturer and among the students themselves. The students are passive recipients of knowledge and instructions during the lesson. In airing some very emotional views about how they are involved in the lesson during instruction, student **D3** in **FGI GD** said:

> *Mr Mapuya, a church service learning set up will even offer us at least some degree of involvement because we will have to stand up and sing, sometimes nodding our heads in agreement with the pastor. Here we exist in silence.*

> *Whether we have questions, whether we understand or not does not matter at all, as long as we attend and listen. The only time we get to be involved in the learning process is during the supplementary instruction sessions.*

A perception identical to the one above on how the students are involved in the lesson during instruction was also brought up in **FGI GF** by student **F1** who said:

> *I feel like our accounting lecturer can make us involved and active because now he is lecturing accounting to himself, not to us.*

It is quite evident that student participation and involvement in the teaching and learning process during formal instruction is non-existent. Again, the curriculum is implemented in a predominantly lecturer centred approach which does not provide students with academically stimulating and enabling learning experiences. There is no social constructivist teaching and learning. The students are marginalised when it comes to the implementation of the curriculum during formal instruction.

The findings under the students' interpretation of their learning experiences also indicate that the teaching and learning activities are taken directly from the prescribed accounting textbook and previous test and examination papers. The students are not exposed to content and teaching and learning activities from other sources. This makes teaching and learning to be purely textbook based and theoretical. Basically, the students are exposed to standardised teaching and learning activities. In the absence of alternative learning sources, the students are confined to a single textbook which may not really make sense to them.

The impression created by the students in light of their learning experiences is that all the learning activities they are exposed to are taken from the textbook and previous question papers. There is no initiative by the lecturer to modify the learning activities in the textbook to accommodate the various types of students in the learning environment. The students revealed that owing to the lack of creativity by the lecturer in developing differentiated teaching and learning tasks, they were exposed to standardised tasks which some of them found to be either at the far extreme of being challenging or very easy.

The mathematical estimation of two to three interesting lessons out of 10 demonstrates the extent to which the students are exposed to learning experiences which do not conform to their views of an interesting and meaningful lesson. The qualitative findings indicate that the students are unanimous that a substantial number

of their lessons are boring and dull. The students further reaffirmed that the lessons were presented to them through approaches that make learning less interesting and meaningless. As such, their learning experiences have been reported to be neither purposeful nor relevant to them.

Owing to such learning experiences, the students have lost interest in attending classes on a regular basis and have resorted to their own study group for accounting. There was no initiative from the lecturer to make learning more interesting, relevant, meaningful and purposeful to the students. As argued by student **F1** in **FGI GF**:

> *Sir, nna* [I] *I just wish he was here so that we can tell him about how boring and dull the classes are. We are always not looking forward to the next accounting lesson, because we know it will also be the same old story. When you have to listen to a monotonous voice for more than one hour, being human, you will definitely fall asleep along the way. To be honest, these lessons are just meaningless.*

These views emerged from all the other focus group interviews, with student **C5** in **FGI GC** revealing:

> *We are made to sit there listening to someone who always tells us that he is not a teacher, but a lecturer. Solutions are read from the textbook, without any illustration of how certain amounts have been calculated. Not even a PowerPoint or whiteboard is used, just the textbook, those lessons are horrible. We just attend to sign the register. We can't wait for the semester to end.*

It is evidently clear that the students' learning experiences, as revealed by their responses and estimation of interesting and meaningful lessons out of the last 10 lessons that the curriculum is currently not being implemented according to the students' expectations and learning needs. Their actual learning experiences are not in harmony with their envisaged learning experiences, with much emphasis on the deficiencies in the teaching approach which results in learning and learning experiences not being relevant, interesting, purposeful and meaningful to the students

In the upcoming paragraphs, the kind of learning support students get from the lecturer will be discussed as a subtheme that came under their learning experiences and the implications these learning experiences have on curriculum implementation approaches.

- **The kind of learning support students get from the lecturer**

Based on the main themes and subthemes which came out of responses, the students believe that they do not get any kind of support from the lecturer during instruction. Actually, all the students are in agreement that they hardly receive any learning support from the lecturer right from the introduction of a topic until the end or conclusion of the topic. Students bemoaned that from the onset of a lesson, new content of a new topic, the lecturer presents lessons to them as though they already know the content to be learned about. It has emerged that owing to the fact that the students do not get any form of support from the lecturer during formal instruction or from the introduction to the conclusion of a topic, their learning experiences are demoralising and discouraging. The lecturer does provide students with the necessary learning support to promote and enhance their academic performance in the subject.

To indicate the absence of lecturer support in their learning, student **A6** in **FGI GA** bemoaned that:

> *The accounting lecturer knows accounting for himself, he does not know how to give it to other people. We are struggling in accounting and he does not give any effort in seeing his students do better. He is not concerned about the performance of his students as individuals. He always says we must figure out the aspects of the curriculum that we don't understand for ourselves.*

In **GFI GE,** student **E1** had this to say:

> *He must improve his explaining skills and try to bring the outside world into the classroom.*

To add more to the above, student **B4** in **FGI GB** complained:

> *This lecturer does not teach in a way that we can understand accounting or we can enjoy accounting. He teaches in a way that everyone already understand accounting.*

From the above verbatim responses, the students are adamant that the lecturer does not provide them with any form of support to facilitate, promote and sustain their learning and understanding of the content. Thus the learning environment is not conscious of the students' learning needs. Furthermore, curriculum implementation is not informed by the learning needs of individual students in the learning environment.

Referring to their phenomenological learning experiences in which they do not get any learning support from the lecturer, all the students argued in one voice that they will not recommend future students to enrol for accounting. Their learning experiences

made them believe that it was really not worth recommending other students to do accounting, since they were setting them up for failure by doing so. The students were very emphatic that on the basis of their undesirable, discouraging, demotivating, disempowering, meaningless and purposeless learning experiences, they would not advise other students to join them or follow their footsteps.

Emphasising the above views, student **D2** in **FGI GD** said:

> *Personally I will not even wish my enemy to sit in that class and go through those demotivating, useless and meaningless boring experiences. One has to be strong and tough to pass accounting under the present circumstances. I don't want them to hate me for recommending accounting.*

In the session for **FGI GH**, student **H4** reiterated:

> *I would say I have a duty to my fellow brothers and sisters to protect them from being exposed to such ancient teaching practices. Because I have been there, I have done it, I have seen it, I have experienced it, I will not recommend them sir.*

Similar sentiments emerged from **FGI GB** when student **B4** concluded that:

> *Encouraging them to take accounting in the current learning atmosphere is murder sir. Nna* [I], *I will not. Never.*

The students' voices demonstrate how dire and desperate the situation is in the current learning environment. Pending changes in the approaches currently being used to implement the curriculum and the learning experiences, the students are adamant that they are very reluctant and not willing to recommend accounting to other students. The resulting high failure rates of students in this module was cited by the students as a result of the undesirable and unsupportive learning environment which they do not wish other students to be exposed to.

The students' envisaged ideal learning experiences will now be discussed as a subtheme which emerged under the main theme of their learning experiences and the implications these learning experiences have on curriculum implementation approaches.

- **The students' envisaged ideal learning experiences.**

Referring to their current learning experiences as a basis to come with an envisaged approach to be used in implementing their future accounting lessons, the students are in agreement that student centred approaches compensate for the deficiencies of the

predominantly lecturer centred approach. The students suggest in a single voice that they want future accounting lessons to be more participative and interactive. In the lessons being participative and interactive, they will make it possible for them to ask questions, express themselves, learn in groups, do group discussions.

To them, lessons which are student centred allow them to deliberate on the subject matter, share and exchange ideas and arrive at a mutually negotiated understanding of accounting. They also want the lecturer to be more of a learning facilitator than a mere transmitter of knowledge, someone who will help them to understand accounting and lead them to new conclusions and insights. Emphasising the need for future accounting lessons to be student centred and more participative, student **H3** in **FGI GH** suggested:

> *Mosuwe* [Teacher], *we want accounting lessons in which we are regarded as equal partners, lessons in which our input is appreciated, where our views are considered and learning challenges addressed and not ignored. We need the lecturer to acknowledge our presence in the classroom, allow us to learn in our own unique ways while expressing our own understanding of the content. It must not be a one-man show. We need our voices to be heard and our brains to be challenged and our thinking to be stretched.*

These comments were welcome with great applause and student **H6** added:

> *Would really want future lessons to make us feel that we are not empty vessels or passengers in the class. We want to learn together.*

One of the most important ideas emerging from the students' responses emphasise that there is a dire need to adopt a radical shift in how the lecturing of accounting is currently being implemented. The students are in agreement that social constructivist learning approaches promote their academic growth and fulfilment of multiple intelligences.

They suggest that they would have benefited from improved understanding of the subject content, high confidence and motivation levels. Additionally, their interpersonal skills would have been fundamentally boosted. These include, the ability to handle and deal with different views, communication skills, the ability to negotiate with others, open mindedness and tolerance. The students pointed out that they benefit more from well organised, formal group learning sessions under the supervision of the lecturer, who is referred to Vygotsky (1978) as a significant other in the process of knowledge creation and acquisition.

Evidence in respect of the above findings can be found in the sentiments of student **G5** in **FGI GG**, who explained:

> *As far as I am concerned, being frequently exposed to formal and well organised monitored group discussions and cooperative learning really helps us to master accounting. It panel beats our communication skills, makes us a family and makes learning more competitive and fun, guys, I believe our learning would be very enjoyable and not lonely like this one.*

All the students indicated that they shared similar views with student **G5** and that this response captured everything they would have loved to say. In the same group, hence student **G1** added that:

> *The only point to add Ntate* [Mr] *Mapuya is that when we do accounting in well organised and structured cooperative learning groups, every level of our Bloom taxonomy is elevated.*

On the premises of the qualitative findings, the students are unanimous that they enjoy accounting learning activities which relate to their real life experiences and which are more practical. Preferably, such learning activities must be done in groups and students must know why they are doing such a learning activity. In support of the above findings, student **D6** in **FGI GD** remarked:

> *It is always nice and enjoyable to do practical accounting activities in which we can relate to and practice what we have learned in the classroom. Thinking becomes very easy and explaining becomes enjoyable when the learning activity talks to our real life encounters.*

In **FGI GC**, student **C3** had earlier commented:

> *Nna* [I] *I cannot describe or explain something that I have never experienced or at least relate to. It is difficult to explain, imagine or discuss something that you have never experienced in life.*

Thus the overall feeling among the students is that for learning activities to be enjoyable, they must be practical, students must relate to them and where possible, students must do them in groups.

Premised on the above, the students perceive a lesson to be interesting and meaningful to them if it is presented using student-centred approaches. Of central concern to their envisaged interesting and meaningful lesson is active participation and involvement in the lesson. Furthermore, they prefer the content being taught and learned to be somehow linked to what they have done in the previous lesson, or at

least the link must be distinguishable. The above perceptions of students are captured by the input of student **B5** in **FGI GB** who said:

> *It always feels good to be actively involved in a lesson, learn about things that one actually comes across in the society and leave the lesson having learned something. Leaving the classroom without anything new to take home is really not on. Plus, this accounting must talk to us, when it is made relevant to us, we will surely find learning it more interesting and meaningful Mr Mapuya.*

The students further maintain that for a lesson to be interesting and meaningful to them, they must not only relate to the content being taught and learned, but they must be guided to new insights, discoveries and conclusions. Another point raised by the students is that the importance of learning what is being taught and learned must be clearly explained to them for the lesson to be meaningful and relevant. This is summarised by the sentiments of student **H4** in **FGI GH** who said:

> *Sometimes we sit there and just wonder why we have to learn and memorise all these things.*

The main impression created by the students from their responses is that for learning experiences to be more positive and academically enabling, there is a need to adopt a more student-centred approach to curriculum implementation. All the students are unanimous that a more participative approach which does not hinder or limit student involvement in the teaching and learning process presents them with more positive and academically enabling learning experiences. Evidence from the qualitative data is found in the views of student **A1** in **FGI GA** who echoed:

> *Our unrestricted participation and involvement in the lesson is very important sir. We want the lecturer to guide us in the learning process and not just tell us things which do not make sense to us. We want to ask questions and learn from each other.*

A similar line of thought was revealed by student **B3** in **FGI GB** who said:

> *Every lesson becomes positive and academically enabling when we are actively involved and are allowed to do activities in groups. We can all enjoy accounting and pass it Mr Mapuya if we are allowed to ask questions, express our own understanding of the content, and then be corrected if one is wrong. It is very demotivating and disempowering to us as students be regarded as an inferior stakeholder in the learning process. We don't come to class at stage 6 of load shedding. There is always some light which this lecturer must make to shine brighter.*

The students revealed that it is important to them for their views about the subject to be considered. They also pointed out that their entry level knowledge must be acknowledged and be used to inform the lesson itself.

In conclusion, the students' responses indicated that formal group learning sessions such as group discussions and cooperative learning create learning communities and foster academic friendship among students. Within the confines of a formal learning environment, students prefer well-structured supervised learning groups. Thus the use of social constructivist approaches to implement the curriculum was perceived to provide students with academic, social and interpersonal benefits, provided that such learning groups are monitored and supervised. Based on the foregoing, it follows that some benefits associated with social constructivist learning can be attributed to its underlying assumptions while some of those benefits can be uniquely attributed to the context within which it is implemented and used.

5.6 SUMMARY

This chapter presented the qualitative findings from the qualitative data that was generated by the qualitative strand of the study in which phenomenology was adopted as a research design. These findings were presented under the broad categories of multiple intelligences, curriculum implementation approaches and the students' learning experiences. These qualitative findings have revealed that the learning activities and the manner in which the curriculum is currently being implemented do not promote and develop the multiple intelligences of students. While analytical intelligence has been found to be moderately satisfied, the study established that the creative and practical intelligence of the students are not promoted and recognised by their learning experiences.

These learning experiences have been found to be dependent on the approach used to implement the curriculum and the nature and types of teaching and learning activities which the students are exposed to in the learning environment. The main theme which emerged under curriculum implementation approaches is that the implementation of the accounting curriculum is orchestrated and confined to a predominantly lecturer-centred approach. The strategies anchored on this lecturer-centred approach influence the students' learning experiences significantly. Premised on the predominantly lecturer-centred curriculum implementation approach currently

being used, the students' learning experiences have emerged to be dull, passive, demotivating, disempowering, meaningless, purposeless, and irrelevant. This provides a sound basis to conclude that the students' learning experiences have been found to not to be only academically promoting and supportive but also not sensitive to their learning needs and multiple intelligences.

Lastly, with regard to their envisaged learning experiences, this study has established that the students are unanimous that social constructivist approaches create and foster a learning environment which supports their learning and cognitive development. Through their qualitative responses to questions specifically relating to their preferred approaches, the students demonstrated that their learning needs can only be fulfilled when the curriculum is implemented through student-centred approaches. The students have further maintained that student centred approaches promote and develop their multiple intelligences.

The proceeding chapter presents a summary of the quantitative and qualitative findings, conclusions, implications and recommendations. The quantitative findings are discussed in light of the qualitative findings and then reference is made to relevant literature which either refutes or confirms such findings. Thereafter, recommendations are made.

CHAPTER VI

SUMMARY OF QUANTITATIVE AND QUALITATIVE FINDINGS, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

The purpose of this chapter is to present a summary of the quantitative and qualitative findings, the conclusions derived from these findings and the implications these findings have on theory, practice and further research. The quantitative findings on both descriptive and inferential statistics are also presented and interpreted in light of the qualitative findings from the phenomenological part of the study. Thus, while the quantitative data has been presented separately from the qualitative data set, discussing it in light of the phenomenological findings allows the researcher to make inferences on the consistencies and contradictions between the quantitative and qualitative findings, thereby identifying gaps between them.

These findings will also be discussed in light of findings from previous studies whose investigations involved similar study variables and assumptions. Lastly, the chapter also presents the researcher's recommendations based on the aggregate study findings and their pedagogical implications, both theoretically and practically. At the climax of these recommendations is a model that is rooted in the pedagogical assumptions of the triarchic theory of successful intelligence, social constructivism and the revised Bloom Taxonomy of learning objectives. The model also takes into consideration the learning environment and the students' learning experiences.

Nieuwenhuis (2017) suggests that the ultimate aim of the researcher when making some interpretations from data is to make some conclusions. Likewise, Creswell (2014), Denzin and Lincoln (2011), Nieuwenhuis (2017) and Silverman (2017) concur that every conclusion made by the researcher ought to be premised on the study findings from the data generated in the study and then be triangulated in light of literature review and theoretical frameworks. Ultimately, Nieuwenhuis (2017) remarks that it is imperative for the researcher to demonstrate to the reader how data confirm, support or contradict the existing knowledge about the study phenomena, the possible new revelations and insights which can consolidate or refine existing theory or serve as a basis for further research or the development of a relevant theory. Consequently,

the above scholarly remarks have fundamentally shaped and informed this chapter in its entirety.

When making these conclusions, Nieuwenhuis (2017) warns researchers that all conclusions ought to be rooted in data which can be verified in light of existing knowledge. The more compelling the corroborating evidence emerging from the data, the stronger the researcher's conclusions and the ultimate interpretation. Nevertheless, Nieuwenhuis (2017) cautions that under no circumstances can the conclusions arrived at be applied and generalised to a broader population. Nieuwenhuis (2017) refers to such conclusions as bounded conclusions because their application is limited to the participants of the study and their context.

6.2 SUMMARISED FINDINGS AND IMPLICATIONS ON CURRICULUM IMPLEMENTATION APPROACHES

The overall findings of this study present sufficient evidence to conclude that while the use of guided instruction and social constructivism in implementing the accounting curriculum still remains very limited, students perceive these two approaches to be the most ideal approaches that can holistically provide for their learning needs and learning styles (cf.4.4.7, cf.4.4.71, cf.4.4.7.2, cf.5.2.2 and cf.5.2.3). The phenomenological perspectives and positions advanced by the students are compelling enough to suggest that both guided instruction and social constructivist approaches do not only provide for the diverse learning needs of students in the learning environment, but that they also present students with academically enabling learning experiences.

The quantitative conclusion in this regard is consistent with the phenomenological verdicts that have emerged from the open ended section of the questionnaire and in the focus group interviews. The overall theme communicated by the students is that their learning experiences in the accounting lecturer hall are often dull and boring (cf.5.2.3). This finding endorses the earlier verdicts delivered by Radovan and Makovec (2015) and Visser and Vreken (2013) in their studies. Looking at how the students bemoaned the excessive use of predominantly lecturer-centred teaching strategies in curriculum implementation, the notion of lessons being dull and boring is justifiable and logical. Based on the foregoing, it therefore follows that when the curriculum is being implemented through approaches that do not appeal to and

promote the students' multiple intelligences, their phenomenological learning experiences cease to be academically enabling and supportive. Furthermore, these findings reaffirm that the use of student-centred teaching approaches in curriculum implementation is compatible with the idea of multiple intelligences as propounded by Ormrod (2014b) and Sternberg (1981; 2008).

On the basis of these findings, the researcher can confidently conclude that the statistical quantitative and phenomenological qualitative verdicts of this study corroborate the various research findings which have advocated for student centred curriculum implementation approaches and learning environments (Fayombo, 2015; Fenstermacher and Soltis, 2009; Mapuya, 2018; Millet, 2015; Radovan and Makovec, 2015; Visser and Vreken, 2013 and Vygotsky, 1978). However, literature has been very silent on the scope and domain of student involvement. While previous studies have consistently established the need and educational importance of adopting student centred approaches and learning environments in which students are actively involved in the teaching and learning process, this study has not been able to locate any previous study which offers a careful and logical articulation of the extent and degree of student involvement. The active involvement of students has not been clearly qualified and described in the previous studies that have been at the disposal of the researcher throughout the entire study.

To this end, this study has established that active student involvement is more than just actively involving the students in the teaching and learning process as suggested by Davis (2009); Fenstermacher and Soltis, (2009); Hannelore (2006); Seroto (2015), Snowman and McCown (2012); Tobias and Duffy, (2009); Vygotsky, (1978) and Visser and Vreken, 2013). As echoed in the phenomenological voices of students, active student involvement in the teaching and learning process starts from collective determination and establishment of expectations between the lecturer and the students, mutually negotiated and agreed educational outcomes and objectives. For instance, when introducing the topic on Property, Plant and Equipment, the lecturer should state in simple terms what students should master in the topic and inform them about the expected outcomes. In this case, students should be able to calculate depreciation on these non-current assets using a given method, articulate asset acquisition and disposal, prepare the relevant notes and disclose these non-current assets in financial statements. It will also be necessary to explain to the students the

kind of skills or intelligences that they will need to be able to successfully and meaningfully engage in Property, Plant and Equipment, such as analytical and practical skills or intelligence. Similarly, the students should be given an opportunity to indicate the kind of support they would expect from the lecturer, in light of the content to be learned and the learning objectives to be satisfied.

Such learning outcomes and objectives must not only be meaningful and relevant to the students but must also be informed by the course descriptors, collective selection of teaching and learning activities which are informed by the educational outcomes and objectives, collective selection of the teaching and learning approaches, pacing of the teaching and learning process and collective ownership and accountability of the entire learning environment. Based on the available empirical evidence, this study has emerged as the first to deliver such a verdict on the qualification and characterisation of student involvement in curriculum implementation.

This view of student involvement helps to reduce marginalising students in important decisions on key aspects that directly affect their teaching and learning and academic progression which was observed by Brady (2012); Jensen and Frederick (2016); Mapuya (2018) and Tulbure (2012). This interpretation of student involvement also reinforces Du Toit's (2018) and Ko and Chung's (2014) idea of student empowerment in the learning environment. In addition, this version of student involvement is consistent with the idea of the lecturer being a learning mediator and facilitator as pioneered by Vygotsky (1978) and adopted by the Department of Education (2000) and HEQC (2010). Lastly, this qualification of student involvement is appealing to Metriana's (2014) and Tokan and Imakulata's (2019) views of promoting self-regulated learning behaviour and academic achievement of students in the learning environment.

6.2.1 Summarised findings and implications of social constructivism as an approach for curriculum implementation

The findings on the hypotheses on multiple intelligences and social constructivism are further emphasized and vindicated by the qualitative findings from the phenomenological focus group interviews. Responding to questions on the nature and types of teaching strategies which they believe promote their analytical, creative and practical abilities, the students unanimously elevate social constructivism to being the

most preferred approach in promoting and realising multiple intelligences (cf.5.2.3, cf.4.4.4.7, cf. 4.4.7.1 and cf.4.4.7.2. The students' responses across all the eight-member focus group interviews communicate a similar theme towards a student-centered approach to curriculum implementation and a student-centered learning environment (cf.5.2.2.and cf.5.2.3).

A content analysis of responses to questions 16, 18 and 19 in the focus group interviews confirmed the students' unanimous preference for a social constructivist oriented approach to curriculum implementation and a learning environment which is based on the assumptions of social constructivism. Therefore, one would expect consistency in the scores for both male and female students on social constructivism, especially in light of the fact that all the students had demonstrated an adequate common understanding and appreciation of social constructivism during the focus group interviews (cf.5.2.1). And this consistency, was indeed present in the social constructivism scores of both groups as established by the independent-samples *t*-test.

With immediate reference to the scope and context of this study, it has been established that social constructivist approaches are not used to implement the accounting curriculum. Furthermore, despite the veritable avalanche of findings in support of constructivist teaching and learning in the last two decades, this study has established that its implementation in the teaching and learning of accounting has been a monumental pedagogical failure (cf.3.5). An inspection of relevant literature (cf.2.6) has revealed that even the most recent conceptualisations of constructivist teaching and learning have some chronic deficiencies on its practical application in the learning environment. As such, the absence of practical guidelines to those directly involved in curriculum implementation on how to implement the curriculum from a social constructivist paradigm has been identified in this study as a compelling factor behind this failure.

The study has found that the absence of constructivist teaching approaches in implementing the accounting curriculum has adverse effects on the students' learning experiences, class attendance and ultimate academic performance in accounting (cf.5.2.2 and cf.5.2.3). It has been established that the failure to implement the accounting curriculum through social constructivist approaches nullifies and

diminishes the students' interest and motivation which they bring to the learning environment (cf.5.2.2 and cf.5.2.3). This has resulted in poor class attendance and poor academic performance (cf.5.2.3). This supports the findings of an investigation by Arisoy (2007) which established a positive relationship between a constructivist learning environment and the students' motivational beliefs. In this way, this study corroborates the findings of Loyens and Gijbels (2008); Nie and Lau (2010); Radovan and Makovec (2015) and Slavin (2009) in their separate empirical studies on social constructivist teaching, student motivation and academic performance.

The conclusion arrived at in this study is also consistent with the sentiments of Akpan and Onweh (2014) as echoed in their research on instructional skills for structuring appropriate learning experiences for students. Similarly, in an earlier study, Pintrich and Schunk (2002) had concluded that constructivist teaching approaches provide students with choice, ownership and control over their learning. In the final analysis, Pintrich and Schunk (2002) concluded that constructivist teaching approaches promote and facilitate the students' intrinsic motivation. As evidenced by responses for questions 9, 10 and 11 in the focus group interviews, a predominantly lecturer centred approach for curriculum implementation nullifies student participation in the teaching and learning process. This makes learning very dull and boring. When the students are passive recipients of knowledge in the teaching and learning process, learning becomes meaningless and purposeless.

Active learning which is relevant, meaningful and purposeful to the students has been found to be compromised significantly when the accounting curriculum is not implemented through social constructivist approaches (cf.5.2.2 and cf.5.2.3). It has been further established that the learning environment is very dull, passive and boring as a result of a predominantly lecturer-centred approach currently being used to implement the accounting curriculum (cf.5.2.2 and cf.5.2.3). This supports the earlier findings of Brickner and Etter, (2008) in their research on strategies for promoting active learning in a principles of accounting course. The above findings also vindicate the work of Brown (2012) and the study findings of Li and Lam (2005) in their research on the active classroom.

In addition, the study has also demonstrated that the failure by the lecturer to use social constructivist approaches in implementing the accounting curriculum does not

only ignore the value of the knowledge which students bring to the learning environment in learning new content, but also makes it impossible for students to see how this prior knowledge relates to the new content. Furthermore, the absence of social constructivist approaches in implementing the accounting curriculum was found to deny the students the opportunity to learn together in groups, share ideas and take responsibility for their own learning and that of their classmates. These revelations endorse the earlier collective views of Garrison and Archer, (2000); Lombard and Themane, (2015); Vygotsky, (1976; 1986) and Woolfolk, (2004) that social constructivism emphasises the identification of prior learning as an important entry level process in the teaching and learning process. Vygotsky, (1976; 1986) in particular reminds those involved in curriculum implementation that the knowledge which students bring to the learning environment is a valuable asset which they must capitalise when implementing the curriculum. This study did not find any capitalisation of such prior knowledge and learning.

A qualitative analysis of the first year accounting student teacher's responses revealed that students found learning activities to be very easy and enjoyable when they worked in groups as opposed to individual work cf. 5.2). This was further supported by the nature and types of learning activities which the students enjoyed the most and scored higher marks in (cf. 5.3). Applebee *et al.* (2003) and Clark *et al.* (2003) had earlier subscribed to the above sentiments when they observed that students can sometimes teach each other different ways of thinking and strategies that can help them to think and behave more intelligently and effectively in future.

Again, this idea conforms to the core principles and values of social constructivist teaching and learning as summarised in Figure 2.8. This finding reaffirms the views of Daniel and Bimbola (2010); Evans *et al*. (2010); Gawe, Jacobs and Vakalisa (2016); Gray (2007); Killen (2016); Slavin (2009); Van Wyk and Dos Reis (2016) and Vygotsky (1978) on the educational value of constructivist approaches in curriculum implementation. It was also found that the students can also not relate to what they learn and the learning activities to their real life experiences when constructivist teaching approaches are not used. This made learning purposeless and meaningless, thereby supporting the views of Makola (2016).

It can be very tempting for one to assume that quantitative findings of practical learning under this approach contradict those of practical intelligence above. This is a fallacy because practical learning in principle deals with offering students practical real life learning experiences beyond the lecture hall to allow them to put theory into practice and to practice in reality what they have done in the lecturer hall. Within the immediate boundaries of this study, this would involve expanded learning opportunities where students visit accounting and auditing firms to learn practically. The themes emerging from the students' responses concur with this quantitative finding on practical learning. The students indicate that apart from what they do in the lecturer hall, they are hardly offered practical learning experiences and opportunities beyond that. Based on this findings, it becomes evident that limiting students to learning activities in the textbook compromises their practical learning.

In addition, the quantitative findings on cooperative learning and participative learning are also justified by the qualitative data from the phenomenological interviews cf.4.4.7.3, cf.5.2.2 and cf.5.2.3). While the students complained that they do not always get opportunities to learn in groups, they allude that they sometimes usually form groups on their own to engage in accounting activities. When such small learning groups engage on learning activities on campus and sometimes in the accounting lecturer hall, it can be argued that they are part of the learning environment in which they access the accounting curriculum. More still, most of the learning activities in accounting are structured and designed in ways that appeal to cooperative and participative learning.

In the context of this study, the students can be assigned sections of financial statements to deal with individually and transactions to analyse. These are then consolidated at the end to create complete financial statements. To come nearer home, in an accounting activity on the income statement with ten items of transactions on additional information that need to be taken into consideration before drawing up the income statement, students can be grouped into five groups. Every student in the group will responsible for adjustments and workings on the two transactions. Thereafter, the individual students will give feedback to the entire group on how they have handled the transactions allocated to them.

Since the students have reported that they hardly access the curriculum through guided instruction (cf.4.5.11, cf.5.2.2 and cf.5.2.3), one would also expect the scores of scaffolding to be very poor. This argument is justified by the fact that pedagogically, scaffolding draws from the epistemological and philosophical foundations of guided instruction and social constructivism (Davis, 2009; Tobias and Duffy, 2009 and Vygotsky, 1978). The above quantitative findings are also consistent with the phenomenological accounts of the students' learning experiences which are predominantly lecturer-centred. A phenomenological refection of their learning experiences has led the students to argue that a significant number of their lessons are like sermons. They just have to sit there, listen and absorb content from the lecturer.

6.2.2 Summarised findings and implications of guided instruction as an approach for curriculum implementation

In light of the pedagogical assumptions of guided instruction collectively advanced by Costa (2008); Garrison and Vaughan, (2011); Hatano and Inagaki, (2003); Ormrod, (2014a); Roscoe and Chi, (2007); Slavin, (2009); Tobias and Duffy, (2009) and Vygotsky, 1978; 1986) as an alternative approach to implement the accounting curriculum, the study has found the role of the lecturer to be undeniably significant and phenomenal in this regard (cf.5.2.2 and cf.5.23). The phenomenological voices of the students revealed that guided instruction is not used to implement the accounting curriculum, while lecturer support has been described as non-existent (cf.5.2.2 and cf.5.2.3).

Correspondingly, the quantitative findings reveal that guided instruction is an ideal curriculum implementation approach to promote and develop the multiple intelligences of the first year accounting student teachers (cf.4.4.7.1). From a pedagogical paradigm and line of thought, guided instruction falls under social constructivism. This explains why there is large positive relationship between guided instruction and social constructivism (cf.4.4.7, cf.4.4.7.1 and Table 4.14). Teaching strategies such as problem based learning and discovery learning that fall under guided instruction also appeal to the pedagogical philosophies and ideologies of social constructivism in curriculum implementation (Tobias and Duffy, 2009). The quantitative findings on the relevant hypotheses demonstrate the compatibility of guided instruction and social

constructivism (cf.4.4.7, cf.4.4.7.1 and Table 4.14). This finding supports the arguments advanced by Garrison and Vaughan, (2011); Ormrod (2014a) and Vygotsky (1978; 1986) with regard to guided instruction and social constructivism.

The absence of differences in the scores of male and female students on guided instruction is also corroborated by the students' responses to questions 16, 18 and 19 of the focus group interviews. Responding to the above questions, which were all centred around the students' preferred teaching approach, the students were unanimous that they enjoyed and preferred lessons in which they are led to arrive at new conclusions about the subject matter and reality in their own unique ways (cf.5.2.3). This is one of the underlying assumptions of guided instruction as an approach to curriculum implementation. This finding confirms the earlier findings of Roscoe and Chi, (2007) and Visser and Vreken (2013) in which students expressed support for guided instruction as an approach to implement the curriculum. Studies by Arisoy (2007); Du Toit (2018) and Ko and Chung (2014) have also produced similar verdicts.

6.3 SUMMARISED FINDINGS ON MULTIPLE INTELLIGENCES AND CURRICULUM IMPLEMENTATION APPROACHES

The compelling nature of statistical and phenomenological research evidence that was established on the relationship between curriculum implementation approaches and the realisation of multiple intelligences points to a strong positive relationship between social constructivism, guided instruction and the realisation of multiple intelligences (cf.4.7.7.1 and cf.4.7.7.2). This confirms investigations by Sternberg (1985, 2001, 2002 and 2008); Sternberg and Detterman, (1986) and Sternberg and Grigorenko (2007) whose findings revealed a relationship between multiple intelligences and curriculum implementation approaches. However, this study has thus far been the only one to establish the relationship between the various types of constructs that test the students' analytical intelligence. This study established a positive relationship between the lower order constructs of analytical intelligence such as analyse and the higher order constructs such as evaluate (cf.4.3, Table 4.2 and Table 4.3).

Answers to question 15 of the focus group interviews indicate that the multiple intelligences of students are not being adequately promoted because all the students are exposed to standardised teaching and learning activities, ignoring their individually

dynamic learning needs. Differentiated teaching and learning tasks tend to appeal to all the students in the learning environment, thereby giving them academically promoting and supporting learning experiences. This confirms the study findings of Metriana (2014) and Tokan and Imakulata (2019) on the nature and type of learning activities.

The above is also supported by the qualitative findings from the phenomenological part of the study. Responding to questions on the types and nature of the learning activities they are usually involved in, the students argued in one voice that they rarely experience teaching and learning activities which appeal to creative intelligence (cf. 5.2.2). This finding is further corroborated by the students' scores on multiple intelligences and guided instruction, multiple intelligences and social constructivism and guided instruction and social constructivism (cf. Table 4.17). Furthermore, a content analysis of the students' comments in the open ended section of the questionnaire which was meant to provide them with an opportunity to individually reflect on their learning experiences in a phenomenological way suggests that the students are not inspired by the lack of creativity in learning activities.

The qualitative findings for question 13 of the focus group interviews corroborate the sentiments of Du Toit (2018) who argues that when implementing the curriculum, the prescribed textbook alone is not adequate and sufficient. There is a need to include other relevant sources such as the internet, DVDs and projectors. These sentiments on teaching and learning activities are consistent with Du Toit (2018) who warns that owing to differences in their learning styles, students learn in different ways. As such, those involved in curriculum implementation need to consider this when designing learning activities.

The students adopted a critical stance towards their learning experiences and lambasted the manner in which learning activities are designed (cf.5.2.2 and cf.5.23). This finding is further sustained by the students' suggestions on how they want future accounting lessons and learning activities to be structured. At the centre of their envisaged future accounting lessons and learning activities is the creative element of practical intelligence. The low levels of variation in the students' scores on the constructs for creative intelligence as confirmed by the standard deviation further attest to the uniformity and oneness of the students' views on creative intelligence

(cf.4.3 and Table 4.4), thereby making this quantitative finding more credible and undebatable. Evidence generated by this study demonstrates that the students hardly experience actively challenging experiences in the learning environment that require them to be engaged in extended and thoughtful writing and discussion which appeal to multiple intelligences as suggested by Du Toit (2018)

6.3.1 Summarised findings and implications of practical intelligence

These findings are substantiated by the students' sentiments that have emerged from a content analysis of their views on the nature and types of the teaching and learning activities they are commonly involved in. Noting the fact that the students concur that most of their teaching and learning activities are taken from the relevant textbook for accounting and previous examinations and tests (cf.4.3, cf.5.2.3 and Table 4.5), one would expect to find these teaching and learning activities to appeal to all the constructs of practical intelligence.

The reason advanced for this diagnosis is that most of the standardised teaching and learning activities from the accounting textbooks are predominantly practical oriented. They are primarily designed to give the students an opportunity to put into practice the theory that would have been explained and presented in the sections leading up to the activities. Most accounting textbooks start with explaining and providing relevant examples of terms and concepts and thereafter test the students' understanding by giving them practical based activities. When looking at a topic like Value Added Tax, the subsequent activities promote the students' practical ability because they test the students' ability to apply the theory they have learned on Value Added Tax on practical contexts which involve purchases and calculations of Value Added Tax.

The phenomenological voices of students in their united call for practical learning experiences beyond the formal learning environment endorse the earlier remarks of Fenstermacher and Soltis (2009). In their articulation of meaningful education, Fenstermacher and Soltis (2009), conclude that teaching and learning does not only deal with what students believe, feel, remember and understand about the subject content but should rather emphasise what the students can do with what they know and understand about the content. Moreover, the findings under practical intelligence reiterate the remarks of Deacon and Botha (2018) who declared the importance of offering students real life experiences to learn. In their scholarly work on value driven

academic institutions, Deacon and Botha (2018) argue that the ultimate goal of any education system should be to present students with practical learning experiences in which they put theoretical concepts into practice. This school of thought was earlier initiated by Namdar (2013) whose investigation has revealed that there is a need for the global education system to shift from theoretical and abstract to more practical and concrete learning in which students can make meaningful contributions to society.

The study has thus generated enough evidence in support of presenting students with real-life learning experiences in accounting. To enable them to contribute meaningfully as responsible global citizens in their respective communities, the accounting students can do supervised practicals at non-profit making organisations, charity organisations and community based projects. This can also help to reverse the trend observed by Botha and Deacon (2013) and Namdar (2013) about the South African and global education systems which contribute very little in producing students who are practical oriented and well-rounded beings.

6.4 SUMMARISED FINDINGS ON THE RELATIONSHIP BETWEEN THE BIOGRAPHICAL VARIABLES OF AGE AND GENDER AND CURRICULUM IMPLEMENTATION APPROACHES

Both the quantitative and qualitative findings in this regard convey a similar message. The students suggest that there is no relationship between gender and approaches used to implement the curriculum, of which guided instruction is one of them (cf.4.5.3 cf.4.5.4 and cf.4.5.5). The students' voices are very clear on the absence of a correlation between their gender and perceptions of guided instruction (cf.4.5.3 cf.4.5.4 and cf.4.5.5). Premised on both findings from the correlational quantitative strand and the phenomenological qualitative one, this study has revealed that the demographic variables of age and gender have no effect on the realisation of the students' multiple intelligences (cf.4.4.7.3, cf.4.5 and cf.4.5.1.). Furthermore, the study has established that these variables also have no effect on the students' perceptions of their learning experiences, especially regarding the nature and types of teaching and learning activities they are exposed to in the learning environment (cf. 5.2.3, cf.4.5.3 cf.4.5.4 and cf.4.5.5).

By accepting the null hypothesis and rejecting all the research hypotheses on the biographical variables of age and gender, the study produced a finding which is

contradictory to Vygotsky's (1978) views on the influence of age on one's experience and perceptions regarding a given phenomenon. This study refutes the notion that the biographical variable of age influences one's perceptions of their learning experiences. On the contrary, Vygotsky (1978) would have accepted the research hypothesis on the existence of a relationship between gender and the students' scores on their learning experiences and social constructivist perspectives because it is assumed that age influences one's constructivist perceptions. To this effect, Vygotsky (1978 makes a clear distinction between young adults and mature adults. Ideally, students in the 18-21 age group are classified under young adults while those in the 22-36 age group fall under Vygotsky's (1978) category of mature adults. As such, using Vygotsky's (1978) views as a point of reference, one would expect to find some differences between the constructivist scores of students in the 18-21 age group and those in the 22-36 age group.

Moreover, the findings of this study on the relationship between the biographical variable of gender and the students' perceptions of their learning experiences dispute those of Arisoy (2007) and Den Brok (2005). In their separate studies, both Arisoy (2007) and Den Brok (2005) found gender to be a significant indicator of the students' perceptions of their learning experiences and learning environment. In both studies, females scored all the aspects of their learning experiences and learning environment that were under investigation more positively than their male counterparts. An investigation of a similar nature by Brown, Williams and Lynch (2011) produced similar findings and demonstrated that female students had different perceptions about their learning experiences from those of male students. In spite of this empirical evidence, this study did not establish any relationship between gender and the students' scores of multiple intelligences, guided instruction and social constructivism (cf.4.4.1.1, cf.4.4.2.1), cf.4.4.2, cf.4.4.2.2 and cf.4.4.2.3.)

Without disregarding the above contradictory findings, the researcher acknowledges that all the students rated items in this category based on their reflections of similar learning experiences, in isolation of their individual experiences in the world of reality. This is typical of a phenomenological paradigm in which experiences are described and reflected on within the realms of familiarity as opposed to age. This finding is consistent with the sentiments of Creswell (2016); Denzin and Lincoln (2011); Fraenkel *et al.* (2015) and Leedy and Ormrod (2015) who collectively argue that

phenomenologists believe that there are some similarities on how individuals perceive and interpret similar experiences. Thus regardless of their age differences, the first year accounting student teachers shared equally identical learning experiences in the learning environment. Consequently, reliable reporting on the constructivist aspect of their learning experiences could not have resulted in any differences in the scores. The researcher can therefore cautiously and confidently conclude that this finding is reliable.

6.5 SUMMARISED FINDINGS ON THE RELATIONSHIP BETWEEN THE BIOGRAPHICAL VARIABLES OF AGE AND GENDER AND MULTIPLE INTELLIGENCES

This study has demonstrated that there is no relationship between gender and multiple intelligences (cf.4.4.1.1, cf.4.4.2, cf.4.4.2.1, cf.4.4.2.2, cf.4.4.2.3 and Table 4.9.). The quantitative findings from the correlational research part of the study are consistent with the qualitative findings of its phenomenological component. Reminiscent of a phenomenological study, variables such as gender and age are not assumed to have an effect on the students' perceptions and scores of multiple intelligences. To corroborate this quantitative finding, reference can be made to the students' responses to interview questions 20 and 21. These questions were meant to establish whether or not the students perceived gender to be a determinant of their views and ultimate scores on multiple intelligences.

A content analysis of their responses has revealed that the students concur and argue in a united voice that their views and scores on multiple intelligences are not a product of gender, but rather, a function of their experiences and encounters with the world and in general and in the accounting lecturer hall in particular (cf.5.2.2 and cf.5.2.3). Like the quantitative findings, the phenomenological findings of the study emphatically refute the notion that gender can be a potential determinant of the students' views and subsequent scores of multiple intelligences. This finding was corroborated in the focus group interviews when the students were deliberating on question one whose main purpose was to determine whether or not the students had adequately understood the term analytical intelligence as it was used in this study. The qualitative data revealed that the understanding of analytical intelligence was not influenced by gender as both male and female students echoed similar sentiments cf.5.2.2 and cf.5.2.3).The

qualitative findings confirmed this quantitative result, in which gender was not established as a variable which influenced the students' understanding of analytical intelligence and ultimate scores on it, hence, the rejection of the research hypothesis and the acceptance of the null hypothesis (cf.4.4.2.1, cf.4.4.2and cf.4.4.1.1).

The quantitative finding of the hypotheses for Pearson correlation on gender and multiple intelligences is consistent with the statistical findings on hypothesis 16 for *t*-test on gender and multiple intelligences (cf.4.5.1, cf.4.5.1.1 and Table 4.15). This finding is further substantiated by the qualitative data generated by the phenomenological component of this study. In their responses to focus group interview questions 22 and 23, the students are in agreement that gender is neither related to nor influences their scores of multiple intelligences (cf.5.2.3). These questions were meant to determine the students' perceptions of the perceived effect of gender on multiple intelligences and the ultimate relationship between these variables as well.

Informed by the statistical results of the preceding hypothesis, the researcher has reliably established that the students are highly consistent in all their scores on the different variables of the study. This consistence is once again, found in the qualitative findings from the students' responses to focus group interview questions 20 and 21 where it was unanimously conveyed to the researcher that age was neither an indicator nor a qualifier of one's perceptions and ultimate scores on analytical intelligence (cf.5.2.2 and 5.2.3). In an attempt to obtain qualitative data which would explain the students' scores on hypotheses relating to age and the three types of multiple intelligences, question 21 was deliberately posed to students in the focus group interviews.

The absence of significant differences in the students' scores for this hypotheses is supported by the qualitative findings. Following a thematic analysis of the qualitative data in respect of question 21, it is concluded that the students are assertively unanimous that there is no relationship between age and their scores for analytical intelligence. The students argue in a united voice that it is one's knowledge and understanding of the various terms used to appeal to and promote a specific type of intelligence which determines one's scores on that particular type of intelligence and not age (cf.5.2.2 and cf.5.2.3).

6.6 SUMMARISED FINDINGS AND IMPLICATIONS OF CURRICULUM IMPLEMENTATION APPROACHES AND LEARNING EXPERIENCES

The findings from the statistical analysis of the quantitative data is at harmony with the findings that have emerged from the thematic analysis of the qualitative data from the phenomenological part of the study. The students' responses to question 2 of the qualitative focus group interviews demonstrate a unanimous declaration by the students of their strong perceived relationship between guided instruction and their ability to analyse, apply and create (cf.5.2.1). Responding to focus group interview question 2 which was meant to determine whether or not the students can establish the relationship between a given approach in curriculum implementation and their realisation of multiple intelligences, the students concur that their ability to analyse, apply and create is positively associated with discovery learning and problem solving (cf.5.2.1). These strategies in curriculum implementation fall under guided instruction, thereby corroborating the quantitative findings of hypothesis 13.

To speak to the issue of age being a potential determinant of one's scores on multiple intelligences, question 20 was intentionally posed to students in the focus group interviews. Referring to the qualitative data from the focus group interviews in response to question 20, it can be asserted that the quantitative and qualitative findings in this regard corroborate each other convincingly. The students were unanimous that how they perceived their learning tasks and activities and their ultimate performance in them was not a product of age (cf.5.2.3). Furthermore, the emerging themes from the students' responses to question 20 point to a united declaration by the students that their scores on multiple intelligences and views on the frequency at which they encounter learning tasks which appeal to various types of intelligences are not related to age.

All the study findings presented above have collectively culminated in the development of a model which will now be presented and explained.

6.7 CURRICULUM IMPLEMENTATION AND ATTAINMENT OF LEARNING OBJECTIVES MODEL

After using the theories of social constructivism and multiple intelligences as theoretical frameworks to comprehensively and holistically explore the students' learning experiences and the implications these learning experiences have on

curriculum implementation, this study has developed a model which can be used to implement the curriculum. This model has three fundamental facets which do not only feed into each other, but also complement each other towards providing students with positive learning experiences (cf. Figure 6.1). To be all inclusive, the model takes into consideration the highly spoken about social constructivism in curriculum implementation and analyses its key assumptions in light of multiple intelligences and the revised Bloom's taxonomy of learning objectives.

Ultimately, the model is an embodiment and illustration of curriculum implementation which is anchored on a mirage of social constructivist learning perspectives towards the realisation of multiple intelligences and the cognitive learning objectives enshrined in the revised Bloom's taxonomy. Thus informed by the study findings and the pedagogical ramifications of social constructivism, the theory of multiple intelligences and the instructional imperatives of the revised Bloom's taxonomy of learning objectives, the researcher has developed a model called the Curriculum Implementation and Attainment of Learning Objectives Model (CIALOM).

The pedagogical views of Andrew (2007); Du Toit (2018); Fenstermacher and Soltis (2009); Garrison and Vaughan, (2011); Killen, (2016); Meyer (2002); Ormrod (2014a); Somenarain, Akkaraju and Gharbaran (2010), the US Department of Education (2008) and Vygotsky (1978; 1986) suggest that despite an avalanche of approaches that can be used to implement the curriculum, none of them is absolutely adequate enough to be used alone. As such, this study has tried to locate teaching strategies that are simultaneously compatible with the triarchic theory of multiple intelligences and the provisions of the revised Bloom's taxonomy. It is also important to note that the revised Bloom's taxonomy serves as a standard global gatekeeper and yardstick for the acceptable quality of all teaching and learning activities (Du Toit *et al.*, 2016 and Horsthemke, *et al*. 2013).

For instance, when teaching a topic on Bank Reconciliations, the students are exposed to the teaching and learning activities through curriculum implementation approaches. These approaches are guided instruction, scaffolding, constructivist learning and cooperative learning. It is these curriculum implementation approaches which determine the students' learning experiences in Bank Reconciliations. At the same time, Krause *et al*. (2010); Ormrod (2014b); Sternberg and Grigorenko (2007)

and Sternberg (2009) argue that both teaching and learning activities and learning experiences must cater for and promote the multiple intelligences of students. In the views of Du Toit *et al.*, (2016); Horsthemke, *et al*. (2013) and Peach-Squibb (2014), these learning experiences must fall within the confines of the provisions of the revised Bloom's taxonomy, which are remembering, understanding, applying, analysing, evaluating and creating.

Formal instruction should, by all means, always appeal to and develop the various cognitive levels of students in the learning environment (Peach-Squibb (2014). Given that the multiple intelligences of students are embedded in the six cognitive levels of the revised Bloom's taxonomy, the use of social constructivist approaches in curriculum implementation has been deemed highly necessary across all learning areas. Owing to the design features and philosophical perspectives of social constructivism, all the approaches within the student-centred paradigm emphasise and promote the active involvement of students in the teaching and learning process.

Therefore, in alignment with the above, Vygotsky's (1976; 1986) curriculum implementation approaches and pedagogical perspectives have been strongly recommended. Therefore, guided instruction, scaffolding, constructivist learning and cooperative learning have been found to be the ideal approaches to implement the curriculum towards the realisation and fulfilment of multiple intelligences and the directives of the revised Bloom's taxonomy. The arrows pointing above from prior learning to discovery learning and from remembering to creating demonstrate a shift of learning tasks from simple to more complex and sophisticated ones as one goes up. When dealing with Bank Reconciliations, this may involve activities on the definition and importance of Bank Reconciliations.

As demonstrated in the model, implementing the curriculum entirely from Sternberg's (1981, 2002; 2008) perspectives of the triarchic theory of multiple intelligences does not provide for lower order learning and cognitive process of prior learning, individual constructivism, remembering and understanding. Activities such as defining and explaining the importance of Bank Reconciliations will not be covered by triarchic teaching. As such, triarchic teaching has a risk of ignoring the learning and cognitive needs of students in the lower order learning and thinking levels, who do not know what a Bank Reconciliation Statement, let alone its importance.

To mitigate this shortfall of triarchic teaching, the use of social constructivist approaches in curriculum implementation becomes imperative. This model has been found to be highly appealing to accounting topics which are inherently abstract and theoretical such as Ethics, Generally Accepted Accounting Principles and Internal Controls and Audit Processes.

Garrison and Vaughan, (2011); Ormrod (2014a); Tobias and Duffy, (2009) and Vygotsky's (1976; 1986) advance that at the bottom of social constructivist approaches is prior learning. This prior learning plays an important role in the students' ability to remember. Prior learning needs to be activated for students to be able to accomplish teaching and learning activities that test their remembering skills. As reckoned by Tobias and Duffy (2009) constructivists believe that after prior learning, individual constructivism becomes the next higher order level of thinking to be activated. Students engage in individual constructivism as they individually examine cash journals and financial information before they can determine which adjustments need to be done or taken into consideration. Because individual constructivism is an internal mental process through which an individual constructs meaning and understanding, it therefore stimulates and promotes the ability of the individual student to understand. It is thus assumed that individual constructivism is a necessary cognitive process for students to be able to successfully and meaningfully engage in learning activities which test their ability to remember. Successful articulation of individual constructivism automatically elevates the students to problem based learning, which is sometimes called experimental learning (Garrison and Vaughan, 2011; Tobias and Duffy, 2009). As illustrated in the model, this is now equivalent to Sternberg's (1981, 2002, 2008) practical learning. The teaching and learning activities at this level now test the students' ability to apply what they have learned in practical situations or contexts. Using Bank Reconciliations as an example, at this level, students should be able to draw up a Bank Reconciliation using the cash journals, other relevant sources, financial information and transactions. Ultimately, the students should be able to correctly reconcile the differences between the bank statement and the cash journals in the Bank Reconciliation Statement.

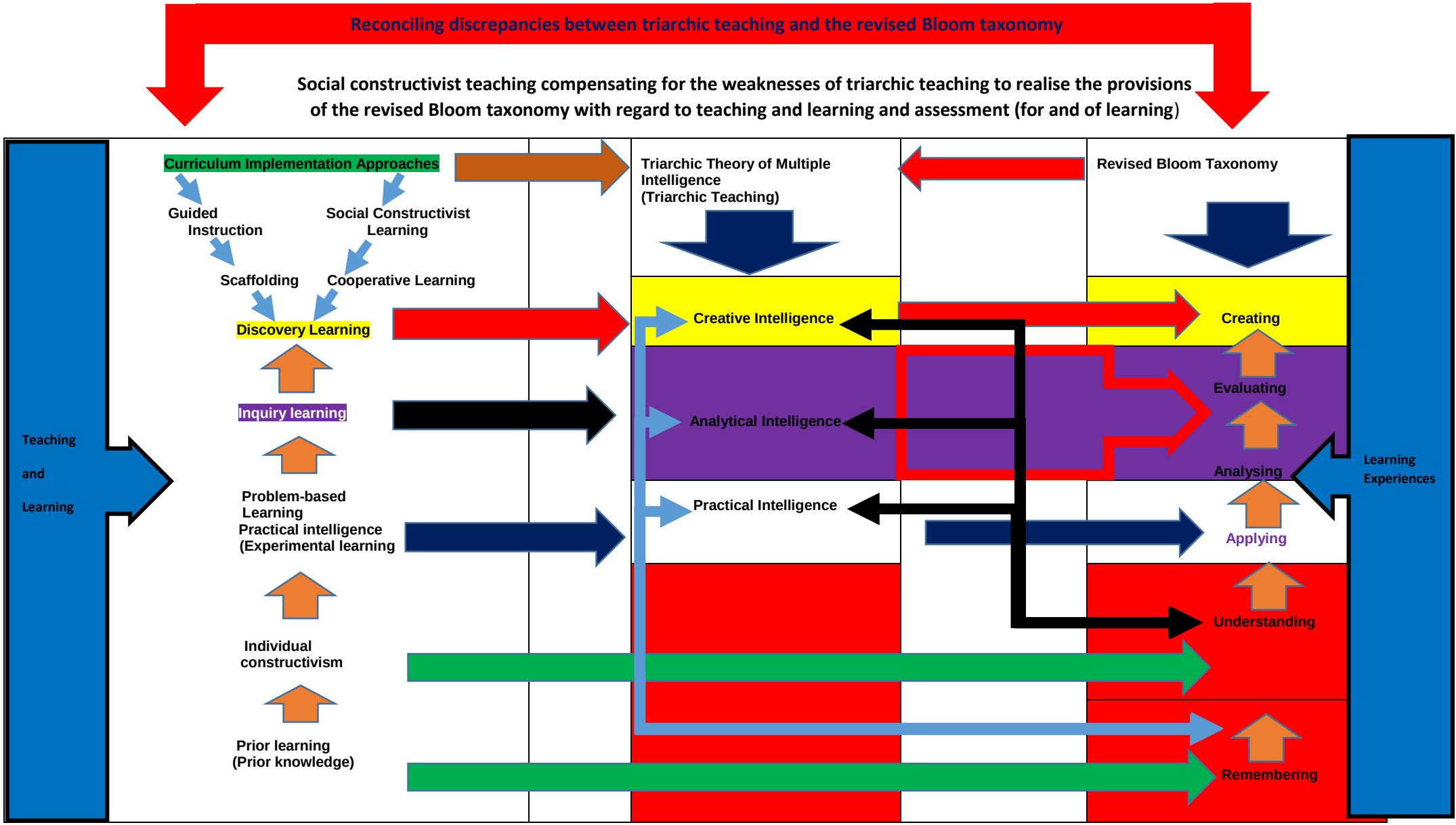

Figure 6.1 Curriculum Implementation and Attainment of Learning Objectives Model

In the model, the equivalence and compatibility of problem based learning and practical intelligence and application on the revised Bloom's taxonomy is shown by the horizontal arrow from problem based learning to practical intelligence and applying.

Emphasising a developmental approach in curriculum implementation, social constructivists suggest that inquiry learning should precede discovery learning once the student has mastered problem based learning (Ormrod, 2014a; Tobias and Duffy, 2009; Vygotsky, 1976). Cognitively, inquiry learning as a curriculum implementation approach promotes and develops the analytical intelligence of students as advanced by Sternberg (1981, 2002, 2008). This will involve the students critically analysing the cash journals, source documents and bank statement to identify any discrepancies to be addressed when drawing up the Bank Reconciliation Statement. On the other hand, this appeals to and stimulates the analysing and evaluating skills of students as required by the revised Bloom's taxonomy. After successfully engaging in all the other types of learning, the students will now be exposed to discovery learning, which nurtures the students' creative intelligence and creating abilities. Discovery learning can be facilitated by scaffolding the students as they engage in the various activities of the Bank Reconciliation Statement.

Another important aspect of this model that needs to be explained is that it demonstrates that the ability of students to successfully and satisfactorily engage in higher order learning and thinking depends on how well they have mastered the previous lower order ones. As such, there is a connection between all the constructs at each level, with the lower order ones supporting those above them. For instance, when dealing with a Bank Reconciliation Statement, students first need to master the lower order ones of remembering, understanding, applying, analysing and evaluating to be able to successfully engage in learning activities which test their creating skills. Therefore, students who struggle with lower order ones are bound to experience serious cognitive and learning challenges as learning activities become more complex and difficult. In the same way, the creative intelligence of students is grounded firmly in the practical and analytical intelligences while discovery learning thrives on prior learning, individual constructivism, problem based learning and inquiry learning.

Using the example on Bank Reconciliation, the ability of the students to draw up a Bank Reconciliation Statement correctly depends on how well they have been able to

analyse and understand cash journals and other financial information at their disposal as they engage in the task. Students who miss or fail to understand something in this regard will struggle to draw up a correct Bank Reconciliation Statement. Again, if students do not have adequate understanding of the importance of drawing up a Bank Reconciliation, they are likely to struggle when they engage in activities which test skills and abilities beyond their understanding of the significance of a Bank Reconciliation Statement. Similarly, the ability of the students to calculate depreciation on fixed assets depends on their understanding and remembrance of the various logical steps that must be followed when calculating deprecation using a give method. This explains why it is of paramount importance to emphasise lower order cognitive skills and abilities as a foundation for higher order level ones.

6.8 RECOMMENDATIONS

In light of the study findings on curriculum implementation approaches and the students' learning experiences, multiple intelligences and cognitive development, the researcher makes and presents some recommendations. It is envisaged that these recommendations can be considered to mitigate some of the pedagogic dilemmas and challenges in the learning environment while consolidating some of the positives that have been identified. As such, these recommendations are made to stakeholders who are involved in curriculum implementation.

6.8.1 Recommendations to those involved in managing curriculum implementation: management.

Deliberating on the importance of curriculum implementation, Du Toit (2018) cautions that curriculum implementation is at the centre of the learning environment at various levels and is continuously influenced by diverse components. As such, Du Toit (2018) remarks that those involved in curriculum implementation ought to empower themselves to be actively engaged in implementing the curriculum. This calls upon them to have a sound understanding of the various approaches in curriculum implementation. Against this background and in view of the study findings, it is therefore recommended that by virtue of them being the gatekeepers and custodians of quality learning environments and experiences, through the relevant office bearers, universities should invest in staff training and development programmes in curriculum implementation approaches. They should create opportunities for lecturers to learn

and continuously improve their pedagogical competencies in curriculum implementation in a diverse learning environment and context.

This call is also consistent with the claims of Somenarain, Akkaraju and Gharbaran (2010) whose investigation into the students' perceptions and learning outcomes in asynchronous and synchronous online learning environments in a biology course concluded that educational institutions are tasked with the sole responsibility of ensuring that the learning environment is not only consistent with the students' learning needs, but that it also presents students with quality learning experiences. The researcher is cautious however that this depends on the university's willingness, dedication and determination in ensuing that this becomes a reality.

6.8.2 Recommendations to those directly involved in curriculum implementation: accounting lecturers

As a point of departure, the researcher subscribes to the views of Fenstermacher and Soltis (2009) who warn that it is imperative for those directly involved in curriculum implementation to adapt their curriculum implementation approaches so that they can effectively deal with challenges of the 21st century learning environment. Contemplating on the responsibility of those involved in curriculum implementation, Du Toit (2018) cautions the task of lecturers in the learning environment is to recognise and acknowledge the various elements that affect curriculum implementation and the curriculum itself.

This study established some serious variations between the students' expectations in curriculum implementation approaches and teaching and learning activities and what they actually experience in the learning environment. It is therefore recommended that there is a need to establish from the onset the views of the stakeholders actively involved in curriculum implementation on important issues that affect them collectively. It is recommended that lecturers should initiate an open dialogue between themselves and their students in which expectations on subthemes are clarified and communicated to each other. These subthemes include their views on teaching and learning and what constitutes an academically enabling and supportive learning environment. This recommendation is made in light of the sentiments of Du Toit (2018) who cautions that making one's expectations very clear to each other in the learning environment is necessary for purposeful and meaningful teaching and learning.

The lecturers' views and understanding of the concept of learning also influences the nature and types of learning activities and the overall development of the learning environment. For instance, some lecturers believe that learning is a stimulus response process while others view effective learning as a process in which students build knowledge by constructing their own meaning, controlling their own learning, working collaboratively and cooperatively with other students. This study found that the lecturer does not have a sound understanding of the students as dynamic individuals who have dynamic learning needs, learning experiences and real life encounters, accessing the curriculum at various levels. This has culminated in a blind approach to curriculum implementation, with a predominantly one size fits all approach, ignoring diversity in the learning environment.

To mitigate the challenges emanating from the lack of adequate information about students and their learning needs, the study recommends the development of a framework which can be used to compare teaching and learning activities. Building a profile of the teaching and learning situation is very instrumental in closing the gaps between the students and those involved in curriculum implementation, especially at the beginning of the year, or semester. At the core of this profile of the teaching and learning situation will be Fenstermacher and Soltis's (2009) pivotal elements. These include the method, awareness of students, knowledge of the content, learning outcomes and the relationship between the lecturer and the students. In the views of Du Toit (2018), method deals with the how of the teaching and learning process.

It is concerned with how lessons are planned, how the learning environment is organised, how new learning material is structured, how to refresh previously learned material, how to use teaching skills and techniques that enable students to acquire the necessary understanding and knowledge, how to assess the teaching and learning process and lastly, how to communicate the assessment results to all the relevant stakeholders. In addition, implementing the curriculum from a humanistic perspective or paradigm as suggested by Snowman and McCown (2012) will be a significant step towards enhancing the lecturer's sound understanding of the students in the learning environment.

Vrioni (2011) notes that in reaction to the demands and societal changes together with acknowledgement of communication skills in a rapidly evolving information learning

environment, universities in Albania have placed much emphasis on group learning. One of the reasons cited for opting to implement the curriculum through constructivist learning approaches such as group learning is the diverse student population which needs to learn how to learn together towards achieving shared learning goals. Part of the reasons for paradigm shift in curriculum implementation has also been intensified by the use of teaching and learning approaches that emphasise student-centred methods such as group learning.

There is a need to migrate from a traditional lecturer-centred approach in curriculum implementation to a more student centred approach. Such a change can possibly contribute towards the adoption and implementation of new educational policies and to a superior understanding of the context of the learning environment. It can also add value to the process of enhancing student interest, motivation, creativity, understanding and equality, all of which are significant indicators of high quality learning which has been advanced by Killen (2018). To this effect, Vrioni (2011); Seroto (2015) and Nel *et al*. (2012) have some notable efforts in advocating for social constructivist approaches such as cooperative learning.

6.8.3 Communicating learning objectives and outcomes.

The findings to question 16 of the focus group interviews emphasise the importance of communicating and explaining learning objectives to the students. It is the researcher's firm view that once the students are made to realise and appreciate the importance of learning the content, then learning becomes purposeful and meaningful to them. They learn with a purpose. They have something immediate to pursue and achieve. Thus, learning goals and objectives must not be distant. Where possible, they have to be emphasised in every lesson. These can be displayed on another section of the whiteboard for students to see. These can also be sent to the students in advance.

This study shares a similar conclusion with Fayombo (2015) and Seroto (2015) that one of the most persistent challenges experienced by lecturers at universities is related to matching their curriculum implementation approaches with the students' learning needs and styles for meaningful and effective learning experiences. Apart from sharing the above sentiments with Fayombo (2015) and Seroto (2015), this study has gone further to establish the need to obtain the students' learning expectations,

over and above how they would prefer to be taught. To mitigate this challenge, the researcher recommends that obtaining detailed evaluative feedback from the students about their learning experiences and expectations can be very crucial.

This position is also in line with Killen's (2016) view that emphasises the importance of getting the students' version of effective curriculum implementation and learning experiences. The need to obtain evaluative, reflective and phenomenological feedback from the students on their learning expectations and experiences is also important because as argued by Fayombo (2015), curriculum implementation does not always result in learning. This claim is evidenced by the gross variations between what lecturers think they have effectively taught students and what students demonstrate they have learned in their evaluations and assessments. Fayombo (2015) argues that when the curriculum is implemented through approaches that have been developed and adopted in light of the different learning needs and styles of students, the learning experiences of students and assimilation of information are significantly improved.

The findings of Fayombo (2015) help illuminate and highlight the importance of being conscious of the students' learning needs in curriculum implementation. To this effect, Fayombo (2015) subscribes to the earlier sentiments of Tulbure (2012) who remarked that effective curriculum implementation requires flexibility and creativity so as to provide a learning environment and learning experiences which accommodate the learning needs of individual students. Ultimately, Fayombo (2015) argues that effective curriculum implementation should culminate in the students' academic success and the realisation of set educational goals and objectives.

Fayombo (2015) points out that the majority of students in the learning environment learn best when the lecturer's approach to implement the curriculum supports their learning needs and learning styles. To this effect, it emphasised that lecturers need to understand the diverse learning styles of their students because in so doing, they gain some phenomenal insights on how to make the students' learning experiences more academically supportive and how to make the academic information more easily accessible to students. In support of the above, Bradly (2013) alludes that the lecturer's increased awareness of the students' learning needs and preferences help them to implement the curriculum accordingly.

This study recommends that those involved in curriculum implementation should always ensure that instructional strategies acknowledge the students' prior knowledge and the preconceptions inherent therein. This can be done through making sure that lesson designs and presentations are set up for students to build on prior understanding. In addition, the lessons must always be designed in such a way that they can engage students as equally important members of a learning community. This can be realised when there is adequate interaction and discourse and construction of ideas among the students and the lecturer about the learning content. Moreover, lesson presentations should always be designed to encourage students to seek and appreciate alternative ways of investigative learning and problem solving. The lecturer can achieve this by soliciting different responses from the students regarding a specific issue and demonstrate to them how these various responses answer the question.

Sometimes it is necessary to ensure that the focus and direction of the lesson is determined by the ideas generated by the students, as long as they are in line with the learning content currently being dealt with. The lecturer can just emphasise the learning objectives and then allow the students to direct their own participation in the lesson. When presenting the lesson, it is important for the lecturer to establish and demonstrate to students how the content they are currently dealing with is connected with other content disciplines and to explore and value real world phenomena that is relevant to the content. Lastly, lecturers should seek to promote intellectual rigor, constructive criticism and value the challenging of ideas and conceptions, allow students to be reflective about their learning and actively engage students in thought provoking activities that involve critical assessment of ideas and concepts. Using a variety of means such as models, drawings, tables and concrete materials and manipulatives to represent and illustrate subject content, terms and concepts can also be considered to this effect.

6.9 FURTHER RESEARCH

Premised on the scarcity of literature on multiple intelligences, this study has identified a gap in research to this effect. Noting the criticisms advanced on multiple intelligences (cf.2.4), the researcher acknowledges that there is a need for further research on the existence and applicability of ideas of multiple intelligences in education. Further

research is also necessary on which teaching strategies appeal to each of the types of multiple intelligences and how all the types of multiple intelligences can be fulfilled in a curriculum implementation. The compatibility of multiple intelligences, guided instruction and social constructivism also need to be explored and researched further.

In addition, it also recommended that further research be conducted on the relationship between gender, age, multiple intelligences, guided instruction and social constructivism. Research in this regard has been found to be significantly limited. Lastly, there is a need for further research on the implications of the students' learning experiences on curriculum implementation approaches and the implications teaching approaches have on the students' learning experiences. Further research into these areas will provide a sound scientific basis to a

6.10. PROBLEMS ENCOUNTERED IN THE STUDY

While this study was a successful journey in educational research, it has been without its challenges and obstacles. Firstly, the researcher did not have abundant recent relevant literature at his disposal on multiple intelligences apart from the ones published by Sternberg himself, or with other co-researchers. The researcher also struggled to get the relevant primary sources on the respective works of Sternberg on multiple intelligences and Vygotsky on social constructivism. These had to be obtained from the University of South Africa through the inter-library loan facility of the Central University of Technology, Free State, Welkom Campus Library, with terms and conditions attached.

The time given to the researcher to use these primary sources and return them was significantly very limited, noting that he also had classes to attend to during the entire study period. This put the researcher under tremendous pressure to use these sources and return them within the prescribe time. In addition, while the majority of the students who were randomly selected for the focus group interviews were punctual, a few of them were late on some occasions, which resulted in delays on the starting time. Moreover, some of these students had a poor command of English and therefore struggled to express themselves explicitly.

6.11 CONCLUSION

After presenting all the research evidence in respect of the learning experiences of first year accounting students and the implications these learning experiences have on curriculum implementation, this study has established and reaffirmed the need for the adoption of social constructivist teaching approaches. By default, student centred curriculum implementation approaches within the social constructivist school of thought are not only pedagogically compatible with the assumptions of multiple intelligences, but they also stimulate and promote the development of all the cognitive levels of students as epitomised by the revised Bloom's taxonomy. The learning environment where students access the curriculum is a formal one and by virtue of it being formal, teaching and learning activities within this environment should be systematically organised and sequenced in specific ways.

The study has produced compelling empirical evidence to argue that in comparative terms student centred approaches are more appealing to both multiple intelligences of students and the revised Bloom's taxonomy. The study has established beyond reasonable doubt that student centred approaches do not only provide students with meaningful learning experiences, but they also enhance and promote sustainable academic and cognitive development of students. Student-centred approaches have also been found to translate to curriculum implementation from a triarchic perspective.

By allowing the students to be hands-on and to be actively engaged in the learning process, student centred approaches appeal to multiple intelligences and all the cognitive abilities of individual students in the learning environment. Subsequently, this culminates in academically promoting and enabling learning experiences for students. This explains and justifies why the educational provisions and imperatives of most countries across the globe are fundamentally inclined towards the ideologies and assumptions of social constructivism. These educational provisions and ideologies run from primary schools right through to institutions of higher learning and further training such as technical colleges and universities

Without disregarding the educational gains of lecturer-centred approaches in curriculum implementation, this study has produced conclusive evidence to argue that student-centred approaches provide students with a more academically enabling and supportive learning environment. Social constructivist teaching approaches have been

established as pedagogically effective enough to galvanise students to willingly and eagerly participate in the teaching and learning process, take collective ownership of their learning progress and that of their classmates and to demonstrate adequate intrinsic motivation in pursuit of academic objectives. Lastly, social constructivist approaches have been found to be powerful enough to transform students into autonomous scholars who are self-directed in their studies.

This study has proved that curriculum implementation or administering of lessons and classroom activities through ineffective and incorrect teaching strategies, especially with regard to the learning of theories, facts and procedures can potentially make learning obsolete and meaningless. It is through the use of proper teaching strategies that learning remains valid and relevant to all students, regardless of their present or future careers and despite changes in their milieu.

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APPENDICES

Appendix A: Application to conduct research and Ethical Clearance

Application to conduct research	Ethical clearance
Application to conduct research.pc	Ethical Clearance.pdf

CONSTRUCTS OF THE STUDY

Appendix B: Constructs for Multiple Intelligences

Constructs for Multiple Intelligences		
Analytical Intelligence Constructs	**Creative Intelligence Constructs**	**Practical Intelligence Constructs**
Analytical intelligence Constru	Creative Intelligence Constru	Practical Intelligence constru

Appendix C: Constructs for Social Constructivism

Social constructivism Constructs
Social Constructivism cons

Appendix D: Research Instruments

Multiple Intelligences and Constructivist Teaching and Learning Questionnaire	
Multiple Intelligences and Cc	
Complete Questionnaire	**Questionnaire for students**
Complete Questionnaire.docx	Questionnaire for students.pdf
Questions for the Focus Group Interviews	**Presentation of Focus Group Interview Participants**
Focus Group Interview Questions	Presentation of Focus Group Intervi

Appendix E: Reliability of the Research Instruments

Reliability of the Constructivist Scale (Questionnaire)	Reliability of Analytical Intelligence
Reliability of Constructivist Scale	Reliability of Analytical Intelligen
Reliability of Social Constructivism	**Reliability of Practical Intelligence**
Reliability of Social Constructivism.xlsx	Reliability of Practical Intelligence
Reliability of Multiple Intelligences	**Reliability of Creative Intelligence**
Reliability of Multiple Intelligence	Reliability of Creative Intelligence

DESCRIPTIVE AND INFERENTIAL STATISTICS OUTPUTS

Appendix F: Correlations Outputs Data

Correlations	
Correlations on Age and Multiple Intelligences	**Correlations on Age and Guided Instruction**
Correlations on Age and all multiple	Correlations on Age and Guided Ins
Correlations on Gender and all Multiple Intelligences	**Correlations on Gender and Guided Instruction**
Correlations on Gender and all mult	Correlations on Gender and Guided
Correlations on Guided Instruction	**Correlations on Social Constructivism**
Correlations on Guided instruction &	Correlations on Social constructivisn

Appendix G: T-Tests Outputs Data

T-Tests	
T-Test: Analytical Intelligence	**T-Test: Creative Intelligence**
T-Test Analytical Intelligence.xlsx	T-Test Creative Intelligence.xlsx
T-Test: Guided Instruction	**T-Test: Practical Intelligence**
T-Test Guided Instruction.xlsx	T-Test Practical Intelligence.xlsx
T-Test: Social Constructivism	
T-Test Social Constructivism.xlsx	

LANGUAGE EDITING

Appendix H: Language Editing Documents

Verification of Language Editing	Invoice for language Editing
VERIFICATION. doc.doc	INVOICE.doc

Central University of Technology, Free State

Welkom Campus

Department of Educational and Professional Studies

Dr AA Szubarga
Deputy Director: Institutional Research
Central University of Technology, Free State

Dear Dr Szubarga

Application to Conduct Research

I hereby apply for permission to conduct research on the learning experiences of first year accounting student teachers and implications on curriculum implementation. The study will involve all first year accounting students at the Central University of Technology, Free State, Welkom Campus. The research attempts to answer the following main research questions:

- What are the learning experiences of first year accounting student teachers at the Central University of Technology, Free State?
- How are the learning experiences of first year accounting student teachers impact on curriculum implementation?

The following subsidiary research questions will also be answered:

- What meaning do first year accounting student teachers ascribe to their learning experiences?
- How do first year accounting student teachers describe their learning experiences?
- What is the relationship between learning experiences of student teachers and curriculum implementation?
- How are curriculum implementation and the attainment of educational objectives relate to students' learning experiences?
- What are the implications of first year accounting student teachers' learning experiences on curriculum implementation?

A questionnaire will be administered to 142 students during the last week of September 2018. This will be a take home 45 minutes exercise. I have also attached an approval letter from the Faculty of Humanities Research and Innovation Committee (FRIC), ethical clearance and the questionnaire.

Best wishes

Mapuya

Mapuya M.
D Ed Candidate. (20393806)

Mr M Mapuya •Department of Educational and Professional Studies •
Welkom Campus• PO Box 1881 • WELKOM • SOUTH AFRICA • 9460 •
Tel: +27 57 910 3602 • **Fax:** 0866192507 • **E-mail:** mmapuya@cut.ac.za • **Website:** www.cut.ac.za

Central University of Technology, Free State

Central University of Technology, Free State

RESEARCH ETHICS APPROVAL

Date: 07 August 2018

1.1.1 This is to confirm that ethical clearance has been provided by the Faculty Research and Innovation Committee in view of the CUT Research Ethics and Integrity Framework, 2016 with reference number [D.**FRC 18/3/4**].

Applicant's Name	Mapuya M
Student number	20393806
Supervisor Name for Student Project (where applicable)	Supervisor: Dr AM Rambuda
Level of Qualification for Student Project (where applicable)	Doctor of Education (D.Ed)
Tittle of research project	The Learning Experiences of First Year Accounting Student Teachers and Implications on Curriculum Implementation .

The following special conditions were set:

x	Ethical measures as outlined in the proposal and which have been endorsed by the Faculty Research and Innovation Committee have to be adhered to.

We wish you success with your research project.

Regards

Prof JW Badenhorst
(Ethics committee representative: Research with humans)

Analytical Intelligence Constructs

[DataSet1] F:\Mapuya\Final Study\Final Study Data 28 September 2018, Mapu

Statistics — **Analyse**

		B1.I encounter learning tasks in accounting that require me to analyse information.	B5.I am able to analyse accounting content.	B10.I do well in learning activities that require me to analyse accounting content.
N	Valid	121	121	121
	Missing	0	0	0
Mean		5,0661	5,1488	4,8678
Median		5,0000	5,0000	5,0000
Std. Deviation		1,40674	1,39440	1,43145
Minimum		1,00	1,00	1,00
Maximum		7,00	7,00	7,00

Statistics — **Critique**

		B3.I encounter learning tasks in accounting that require me to be critical when dealing with them.	B6.I can be critical of accounting content when dealing with learning tasks.	B12.I do well in learning activities that require me to be a critique of accounting content.
N	Valid	121	121	121
	Missing	0	0	0
Mean		5,2645	4,6942	4,6860
Median		5,0000	5,0000	5,0000
Std. Deviation		1,47065	1,36530	1,39662
Minimum		1,00	1,00	1,00
Maximum		7,00	7,00	7,00

Statistics — **Judge**

		B2.I encounter learning tasks in accounting that require me to make my own personal judgement about various scenarios.	B4.I do well in accounting learning activities that require me to make judgements.	B11.I trust ability to make sound and valid judgements in accounting.
N	Valid	121	121	121
	Missing	0	0	0
Mean		4,5868	4,6446	4,8099
Median		5,0000	5,0000	5,0000
Std. Deviation		1,69641	1,57512	1,65486
Minimum		1,00	1,00	1,00
Maximum		7,00	7,00	7,00

Statistics

Compare and contrast

		B7.My accounting learning tasks promote my comparing and contrasting skills.	B13.I do well in accounting learning activities that require me to compare and contrast.	B15.I encounter learning tasks that require me to show the similarities and differences between items in accounting.
N	Valid	121	121	121
	Missing	0	0	0
Mean		5,2066	4,9835	5,2727
Median		5,0000	5,0000	6,0000
Std. Deviation		1,30969	1,44328	1,50000
Minimum		2,00	1,00	1,00
Maximum		7,00	7,00	7,00

Statistics

Evaluate

		B8.I believe in my evaluative abilities in accounting.	B16.I encounter accounting learning tasks that require me to make some evaluations within a given context.	B18.I do well in accounting learning activities that require me to make some evaluations.
N	Valid	121	121	121
	Missing	0	0	0
Mean		5,0413	4,7934	4,9091
Median		5,0000	5,0000	5,0000
Std. Deviation		1,50774	1,42547	1,52206
Minimum		1,00	1,00	1,00
Maximum		7,00	7,00	7,00

Statistics

Assess

		B9.I do well in accounting learning tasks that require me to use my assessment abilities.	B14.I am good at assessing various contexts in accounting.	B17.I encounter accounting learning tasks that require me to make some assessments.
N	Valid	121	121	121
	Missing	0	0	0
Mean		4,9256	4,9091	4,9339
Median		5,0000	5,0000	5,0000
Std. Deviation		1,48417	1,50000	1,55850
Minimum		1,00	1,00	1,00
Maximum		7,00	7,00	7,00

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15,0826	5,027548
15,0000	5
4,23259	1,410863

14,6446	4,881543
15,0000	5
4,23257	1,410858

14,0413	4,680441
15,0000	5
4,92639	1,642131

15,4628	5,15427
16,0000	5,333333
4,25297	1,417657

14,7438	4,914601
15,0000	5
4,45527	1,485089

14,7686	4,922865
15,0000	5
4,54267	1,514223

Creative Intelligence Constructs

[DataSet1] F:\Mapuya\Final Study\Final Study Data 28 September 2018, M

Statistics — **Create**

		C2.I can come up with something new in accounting.	C7.I encounter accounting learning tasks that require me to be creative.	C12.I have creative ability in accounting content.
N	Valid	121	121	121
	Missing	0	0	0
Mean		3,7438	5,1322	4,7851
Median		4,0000	5,0000	5,0000
Std. Deviation		1,73459	1,37806	1,43298
Minimum		1,00	1,00	1,00
Maximum		7,00	7,00	7,00

Statistics — **Invent**

		C5.I enjoy doing accounting tasks that test my inventive skills.	C8.I believe in my inventive skills in accounting.	C11.I encounter accounting learning tasks that require me to design and produce new things.
N	Valid	121	121	121
	Missing	0	0	0
Mean		5,5289	4,9835	4,3719
Median		6,0000	5,0000	4,0000
Std. Deviation		1,42053	1,48315	1,68391
Minimum		1,00	1,00	1,00
Maximum		7,00	7,00	7,00

Statistics — **Discover**

		C10.I encounter accounting learning tasks that require me to discover new knowledge	C14.I use my prior knowledge to discover new knowledge in accounting.	C17.I am capable of doing accounting learning tasks that require me to arrive at new knowledge and conclusions.
N	Valid	121	121	121
	Missing	0	0	0
Mean		5,1405	5,1736	5,0331
Median		5,0000	5,0000	5,0000
Std. Deviation		1,54005	1,44728	1,67796
Minimum		1,00	1,00	1,00
Maximum		7,00	7,00	7,00

Statistics

Predict

		C3.I encounter learning tasks that require me to make some predictions in accounting	C15.I can make some correct and accurate predictions in accounting.	C18.I am good at making correct and accurate predictions in accounting.
N	Valid	121	121	121
	Missing	0	0	0
Mean		4,6612	4,8843	4,6116
Median		5,0000	5,0000	5,0000
Std. Deviation		1,51961	1,50660	1,55119
Minimum		1,00	1,00	1,00
Maximum		7,00	7,00	7,00

Statistics

Imagine if..

		C6.I trust my academic imaginations to be correct and relevant in accounting.	C13.I make academically correct and relevant imaginations in accounting.	C16.I encounter learning tasks that require me to use my own imagination ability in accounting.
N	Valid	121	121	121
	Missing	0	0	0
Mean		4,9917	4,7190	5,0579
Median		5,0000	5,0000	5,0000

Std. Deviation	1,55186	1,54501	1,41007
Minimum	1,00	1,00	1,00
Maximum	7,00	7,00	7,00

Statistics

Suppose th

		C1.I can create different scenarios from which I make possible correct suppositions in accounting.	C4.I encounter accounting learning tasks that require me to make suppositions.	C9.I make correct suppositions in accounting.
N	Valid	121	121	121
	Missing	0	0	0
Mean		4,3884	4,5207	4,4959
Median		4,0000	5,0000	4,0000
Std. Deviation		1,55656	1,46685	1,48394
Minimum		1,00	1,00	1,00
Maximum		7,00	7,00	7,00

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13,6612	4,553719
14,0000	4,666667
4,54563	1,515211

14,8843	4,961433
15,0000	5
4,58758	1,529194

15,3471	5,115702
15,0000	5
4,66530	1,5551

14,1570	4,719008
15,0000	5
4,57740	1,525801

14,7686	4,922865
15,0000	5

4,50694	1,502312

at...

13,4050	4,46832
13,0000	4,333333
4,50734	1,502448

Practical Intelligence Constructs

[DataSet1] F:\Mapuya\Final Study\Final Study Data 28 September 2018, Mapu

Statistics

Apply

		D1.I encounter learning tasks in accounting that require me to apply what I have learnt.	D6.I am good at applying old knowledge to new situations in accounting.	D10.I am able to apply what I have learnt in the accounting classroom in different contexts.
N	Valid	121	121	121
	Missing	0	0	0
Mean		5,1901	5,2975	4,9669
Median		5,0000	5,0000	5,0000
Std. Deviation		1,59329	1,50358	1,48848
Minimum		1,00	1,00	1,00
Maximum		7,00	7,00	7,00

Statistics

Use

		D7.I can use previously acquired knowledge when dealing with new learning tasks in accounting.	D11.I enjoy doing accounting tasks that require me to use my previously acquired knowledge.	D16.I encounter learning tasks in accounting that require me to use previously acquired knowledge.
N	Valid	121	121	121
	Missing	0	0	0
Mean		5,2479	5,3554	5,2231
Median		5,0000	6,0000	5,0000
Std. Deviation		1,39213	1,45407	1,57315
Minimum		1,00	1,00	1,00
Maximum		7,00	7,00	7,00

Statistics

Put into practice

		D2.I can practice what I have learned in the accounting classroom.	D8.I get higher marks in accounting tasks that require me to put into practice what I have learned in the classroom.	D13.I encounter learning tasks in accounting that require me to put what I have learnt into practice.
N	Valid	121	121	121
	Missing	0	0	0
Mean		5,7438	5,0331	5,1488
Median		6,0000	5,0000	5,0000
Std. Deviation		1,39958	1,53261	1,43563
Minimum		1,00	1,00	1,00
Maximum		7,00	7,00	7,00

Statistics

Implement

		D3.I can successfully implement new skills and concepts in accounting learning tasks.	D15.I am capable of implementing newly acquired skills and concepts in accounting learning tasks.	D18.I encounter learning tasks in accounting that require me to implement what I have learned in the classroom.
N	Valid	121	121	121
	Missing	0	0	0
Mean		4,7769	4,8099	5,4545
Median		5,0000	5,0000	6,0000
Std. Deviation		1,48598	1,51280	1,46629
Minimum		1,00	1,00	1,00
Maximum		7,00	7,00	7,00

Statistics

Employ

		D4.I can correctly employ previous knowledge when dealing with accounting learning tasks.	D14.I encounter learning tasks in accounting that require me to employ previous knowledge to deal with learning tasks.	D17.I am confident in ability to employ previous knowledge when dealing with new tasks in accounting.
N	Valid	121	121	121

	Missing	0	0	0
Mean		5,3306	5,2727	5,0826
Median		6,0000	5,0000	5,0000
Std. Deviation		1,43404	1,42595	1,58948
Minimum		1,00	1,00	1,00
Maximum		7,00	7,00	7,00

Statistics

Render practical

		D5.I encounter learning tasks in accounting that require me transform theory into practice.	D9.I can translate theory into practice in accounting.	D12.I enjoy relating theory with practice in accounting.
N	Valid	121	121	121
	Missing	0	0	0
Mean		5,2810	5,0579	4,9339
Median		5,0000	5,0000	5,0000
Std. Deviation		1,42725	1,40415	1,72596
Minimum		1,00	1,00	1,00
Maximum		7,00	7,00	7,00

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15,4545	5,151515
15,0000	5
4,58534	1,528448

15,8264	5,275482
16,0000	5,333333
4,41935	1,473115

15,9256	5,30854
16,0000	5,333333
4,36781	1,455938

15,0413	5,013774
16,0000	5,333333
4,46507	1,488355

15,6860	5,22865
16,0000	5,333333
4,44947	1,483157

15,2727	5,090909
15,0000	5
4,55736	1,519119

0

Social Constructivism Constructs

[DataSet1] F:\Mapuya\Final Study\Final Study Data 28 September 2018, Ma

Statistics

		F1.I get opportunities to interact with my classmates in the teaching and learning process of accounting.	F4.My understanding of accounting improves through sharing and exchanging ideas with my classmates.	F9.I value the power of group learning as opposed to individual learning in accounting.	F12.My accounting lecturer makes me understand that teaching and learning of accounting is a shared responsibility.
N	Valid	121	121	121	121
	Missing	0	0	0	0
Mean		5,2066	5,3306	5,0413	4,6033
Median		5,0000	6,0000	5,0000	5,0000
Std. Deviation		1,64781	1,58318	1,64011	1,75347
Minimum		1,00	1,00	1,00	1,00
Maximum		7,00	7,00	7,00	7,00

Statistics

		F5.I enjoy accounting lessons in which I am actively involved.	F8.My accounting lecturer empowers me to be an independent and autonomous student.	F11.I value the contribution of individual students in the accounting lesson for it to be successful.	F13.My involvement in the lesson depends on my eagerness to learn and understand new accounting content.
N	Valid	121	121	121	121
	Missing	0	0	0	0
Mean		5,3058	4,6777	5,2066	5,1405
Median		6,0000	5,0000	5,0000	5,0000
Std. Deviation		1,69235	1,81758	1,46582	1,45663
Minimum		1,00	1,00	1,00	1,00
Maximum		7,00	7,00	7,00	7,00

Statistics

		F2.My accounting lecturer reduces support in learning activities as I gain more understanding on how accomplish them.	F6.When doing learning activities, I get examples related to the task on hand for guidance	F10.I understand the learning content in accounting better when I am led to new insight into content by the lecturer.	F14.When doing difficult tasks, I am given leads and hints that enable me to accomplish the task successfully.
N	Valid	121	121	121	121
	Missing	0	0	0	0
Mean		4,0413	4,9835	4,9339	4,6529
Median		4,0000	5,0000	5,0000	5,0000
Std. Deviation		1,66030	1,57577	1,50408	1,70641
Minimum		1,00	1,00	1,00	1,00
Maximum		7,00	7,00	7,00	7,00

Statistics

		F3.What I experience in the world is taught in the accounting classes.	F7.Accounting is more understandable when it is related to my real life experiences.	F15.I learn activities that are related to my daily experiences in the world	F18.I am given opportunities to put into practice what I learn in the accounting classroom.
N	Valid	121	121	121	121
	Missing	0	0	0	0
Mean		4,5455	5,1157	4,6942	4,8512
Median		5,0000	6,0000	5,0000	5,0000
Std. Deviation		1,79815	1,62885	1,48797	1,73042
Minimum		1,00	1,00	1,00	1,00
Maximum		7,00	7,00	7,00	7,00

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Cooperative Learning

F19.I rely on the help and assistance of knowledgeable others to understand new content in accounting.		
121		
0		
5,0331	25,2149	5,042975
5,0000	26,0000	5,2
1,64283	8,26741	1,653481
1,00		
7,00		

Participative Learning

F17.My participation in the lesson makes learning of accounting more enjoyable.		
121		
0		
5,3140	25,6446	5,128926
6,0000	27,0000	5,4
1,66850	8,10087	1,620174
1,00		
7,00		

Scaffolding

F16.Accounting content is presented from the known to the unknown to enhance better understanding.		
121		
0		
5,2314	23,8430	4,768595
5,0000	24,0000	4,8
1,53167	7,97824	1,595648
1,00		
7,00		

Practical Learning

F20.The accounting lecturer makes me see the link between theory and practice in accounting.		
121		
0		
4,8347	24,0413	4,808264
5,0000	26,0000	5,2
1,88568	8,53107	1,706214
1,00		
7,00		

MULTIPLE INTELLIGENCE AND CONSTRUCTIVIST TEACHING AND LEARNING QUESTIONNAIRE. (MICTLQ)

Variables	Constructs	Questionnaire Items
	Extent to which learning activities promote analytical intelligence	
MULTIPLE INTELLIGENCE; *Analytical Intelligence*	Analyse	B1, B5, B10
	Critique	B3, B6, B12
	Judge	B2, B11, B4
	Compare and contrast	B15, B7, B13
	Evaluate	B16, B8, B18
	Assess	B17, B14, B9
	Extent to which learning activities promote creative intelligence	
MULTIPLE INTELLIGENCE; *Creative Intelligence*	Create	C7, C12, C2
	Invent	C11, C8, C5
	Discover	C10, C14, C17
	Predict	C3, C15, C18
	Imagine if…	C16, C13, C6
	Suppose that…	C4, C1, C9
	Extent to which learning activities promote practical intelligence	
MULTIPLE INTELLIGENCE; *Practical Intelligence*	Apply	D1, D10, D6
	Use	D16, D7, D11
	Put into practice	D13, D2, D8
	Implement	D18, D15, D3
	Employ	D14, D4, D17
	Render practical	D5, D9, D12
	Teaching approaches that are consistent with multiple intelligence	
GUIDED INSTRUCTION.	Problem-based (Application intelligence/skills)	E11, E9, E4
	Discovery learning (Creative intelligence/ skills)	E1, E12, E5
	Experimental learning (practical intelligence/skills)	E2, E10, E7
	Constructivist learning	E8, E3, E6
	A social constructivist approach to teaching and learning	
SOCIAL CONSTRUCTIVISM	Cooperative Learning	F1,F19, F4, F9, F12
	Participative Learning	F17, F5, F8, F13, F11
	Scaffolding	F16, F6, F10, F14, F2
	Practical Learning	F15, F3, F18, F7, F20

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APPENDIX 1: QUESTIONNAIRE ON FIRST YEAR ACCOUNTING STUDENTS' LEARNING EXPERIENCES AND IMPLICATIONS ON CURRICULUM IMPLEMENTATION

Dear student.

The purpose of this questionnaire is to obtain first-hand information from you about your learning experiences in the Accounting classroom and to determine how these learning experiences implicate curriculum implementation. Please not that this is note an academic evaluation which has correct or wrong answers. It is highly anticipated that your responses will provide the stakeholders involved in curriculum implementation with insight into your real learning experiences in the lecture hall. Such insight will guide them towards creating academically enabling learning experiences in curriculum implementation that will promote your academic success. Thus your honest, unbiased and objective responses and opinions will be used to inform future approaches in curriculum implementation that will benefit future First year accounting students.

Please note that this investigation is conducted within the parameters of ethical considerations that are universally accepted in research. As such, your participation in this study is entirely voluntary and founded on informed consent. No forms of benefits will therefore accrue to you emanating from your participation in this investigation.

A. BIOGRAPHICAL INFORMATION

Please indicate your gender and age in the respective boxes below

A1. Gender	Male	**1**
	Female	**2**
A2. Age	Please write down your age in the box right next	

STATEMENTS ON THE VARIOUS COGNITIVE ABILITIES IN LEARNING TASKS.

The statements below seek to measure the extent to which the learning tasks promote the various cognitive abilities.

How to respond to each statement

Indicate your opinion on the level of frequency between a scale of 1 and 7, with 1 being **NOT AT ALL** (the lowest rank) and 7 being **ALWAYS** (the highest rank). Tick the number which best represents and describes your opinion on the scale for each statement provided. (**Can either be 1, closer to 1, 7 or closer to 7.**

INCORPORATION OF MULTIPLE INTELLIGENCIES IN CURRICULUM IMPLEMENTATION										
My teaching and learning activities and assessments in Accounting 1 promote the following intelligences and abilities.		NOT AT ALL ←						→ ALWAYS		**FOR OFFICE USE ONLY**
B. ANALYTICAL INTELLIGENCE		**1**	**2**	**3**	**4**	**5**	**6**	**7**		
Analyse	A1. I encounter learning tasks in accounting that require me to analyse information. A2. I encounter learning tasks in accounting that require me to make my own personal judgement about various scenarios. A3. I encounter learning tasks in accounting that require me to be critical when dealing with them.									
Critique	A4. I do well in accounting learning activities that require me to make a judgement. A5. I am able to analyse accounting content. A6. I can be critical of accounting content when dealing with learning tasks.									
Judge	A7. My accounting learning tasks promote my comparing and contrasting skills. A8. I believe in my evaluative abilities in accounting. A9. I do well in accounting learning tasks that require me to use my assessment abilities.									
Compare and contrast	A10. I do well in learning activities that require me to analyse accounting content. A11. I trust my ability to make sound and valid judgements in accounting. A12. I do well in learning activities that require me to be a critique of accounting content.									
Evaluate	A13. I do well in accounting learning activities that require me to compare and contrast. A14. I am good at assessing various contexts in accounting. A15. I encounter learning tasks that require me to show the similarities and differences between items in accounting.									
Assess	A16. I encounter accounting learning tasks that require me to make some evaluations within a given context. A17. I encounter accounting learning tasks that require me to make some assessments. A18. I do well in accounting learning activities that require me to make some evaluations.									
C. CREATIVE INTELLIGENCE										
Create	C1. I can create different scenarios from which I make possible correct suppositions in accounting. (C1)									

	C2. I can come up with something new in accounting. (C2) C3. I encounter learning tasks that require me to make some predictions in accounting. (C3)								
Invent	C4. I encounter accounting learning tasks that require me to make suppositions. (C4) C5. I enjoy doing accounting tasks that test my inventive skills. (C5) C6. I trust my academic imaginations to be correct and relevant in accounting. (C6)								
Discover	C7. I accounting encounter learning tasks that require me to be creative. (C7) C8. I believe in my inventive skills in accounting. (C8) C9. I make correct suppositions in accounting. (C9)								
Predict	C10. I encounter accounting learning tasks that require me to discover new knowledge. (C10) C11. I encounter accounting learning tasks that require me to design and produce new things. (C11) C12. I have creative ability in accounting content. (C12)								
Imagine if….	C13. I make academically correct and relevant imaginations in accounting. (C13) C14. I use my prior knowledge to discover knew knowledge in accounting. (C14) C15. I can make some correct and accurate predictions in accounting. (C15)								
Suppose that….	C16. I encounter learning tasks that require me to use my own imagination ability in accounting. (C16) C17. I am capable of doing accounting learning tasks that require me to arrive at new knowledge and conclusions. (C17) C18. I am good at making correct and accurate predictions in accounting. (C18)								
D. PRACTICAL INTELLIGENCE									
Apply	D1. I encounter learning tasks in accounting that require me to apply what I have learnt. (D1) D2. I can practice what I have learned in the accounting classroom. (D2) D3. I can successfully implement new skills and concepts in accounting learning tasks. (D3)								
Use	D4. I can correctly employ previous knowledge when dealing with accounting learning tasks. (D4) D5. I encounter learning tasks in accounting that require me transform theory into practice. (D5) D6. I am good at applying old knowledge to new situations in accounting. (D6)								
Put into practice	D6. I can use previously acquired knowledge when dealing with new learning tasks in accounting. (D7)								

	D8. I get higher marks in accounting tasks that require me to put into practice what I have learned in the classroom. (D8) D9. I can translate theory into practice in accounting. (D9)								
Implement	D10. I am able to apply what I have learnt in the accounting classroom in different contexts. (D10) D11. I enjoy doing accounting tasks that require me to use my previously acquired knowledge. (D11) D12. I enjoy relating theory with practice in accounting. (D12)								
Employ	D13. I encounter learning tasks in accounting that require me to put what I have learnt into practice. (D13) D14. I encounter learning tasks in accounting that require me to employ previous knowledge to deal with learning tasks. (D14) D15. I am capable of implementing newly acquired skills and concepts in accounting learning tasks. (D15)								
Render practical	D16. I encounter learning tasks in accounting that require me to use previously acquired knowledge. (D16) D17. I am confident in ability to employ previous knowledge when dealing with new tasks in accounting. (D17) D18. I encounter learning tasks in accounting that require me to implement what I have learned in the classroom. (D18)								
E. THE PREVALENCE OF CURRICULUM IMPLEMENTATION APPROACHES IN THE ACCOUNTING LESSONS THAT ARE CONSISTENT WITH MULTIPLE INTELLIGENCIES. GUIDED INSTRUCTION		1	2	3	4	5	6	7	**FOR OFFICE USE ONLY**
Problem-based (Application intelligence/skills)									
E1. The accounting lecturer teaches me in ways that lead me to discover new knowledge in accounting. (E1) E2. We learn through experiments in accounting. (E2) E3. The accounting lecturer plays a guiding and facilitating role in the teaching and learning process of accounting. (E3)									
Discovery learning (Creative intelligence/ skills)									
E4. The accounting lecturer gives me case studies in which I have to demonstrate my understanding of the content. (E4) E5. The accounting lecturer promotes our ability to arrive at our own conclusions about accounting issues rather than spoon feeding us. (E5)									

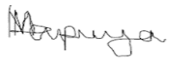
E6. The accounting lecturer places us as students at the core centre of teaching and learning activities. (E6)								
Experimental learning (practical intelligence/skills)								
E7. I can personally relate to the accounting content because of the way it is taught to me. (E7) E8. The accounting lecturer creates opportunities for us to learn from each other as students through group work. (E8) E9. The accounting lecturer promotes our learning through problem-based activities (context-based activities). (E9)								
Constructivist learning								
E10. Our learning activities in accounting are practical. (E10) E11. I encounter learning tasks in accounting which require me to analyse various accounting related scenarios to arrive at a solution. (E11) E12. The accounting lecturer gives us learning scenarios in accounting which lead us to new conclusions about accounting. (E12)								
VYGOTSKY'S PERSPECTIVE ON TEACHING AND LEARNING- SOCIAL CONSTRUCTIVISM (Vygotsky, 1978, 1986 and 1997)								
F. Please indicate the level of frequency from NOT at all to ALWAYS.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**FOR OFFICE USE ONLY**
CONSRUCT OF SOCIAL CONSTRUCTIVISM BEING MEASURED: COOPERATIVE LEARNING								
F1. I get opportunities to interact with my classmates in the teaching and learning process of accounting**.**								
F2. I rely on the help and assistance of knowledgeable others to understand new content in accounting.								
F3. My understanding of accounting improves through sharing and exchanging ideas with my classmates.								
F4. I value the power of group learning as opposed to individual learning in accounting.								
F5. The lecturer makes us understand that teaching and learning of accounting is our shared responsibility.								
CONSRUCT OF SOCIAL CONSTRUCTIVISM BEING MEASURED: PARTICIPATIVE LEARNING								
F6. My participation in the lesson makes learning of accounting more enjoyable.								
F7. I enjoy accounting lessons in which I am actively involved.								
F8. The lecturer places us at the centre of the teaching and learning process in accounting.								
F9. My involvement in the lesson depends on my eagerness to learn and understand new accounting content.								
F10. I value the contribution of individual students in the accounting lesson for it to be successful.								
CONSRUCT OF SOCIAL CONSTRUCTIVISM BEING MEASURED: SCAFFOLDING								

F11. Accounting content is presented from the known to the unknown to enhance better understanding.								
F12. When doing learning activities, I get examples related to the task on hand for guidance								
F13. I understand the learning content in accounting better when I am led to new insight into content by the lecturer.								
F14. When doing difficult tasks, I am given leads and hints that enable me to accomplish the task successfully.								
F15. The lecturer reduces support in learning activities as we gain more understanding on how accomplish them.								
CONSRUCT OF SOCIAL CONSTRUCTIVISM BEING MEASURED: PRACTICAL LEARNING								
F16. We learning activities that are related to our daily experiences in the world.								
F17. What we experience in the world is taught in the accounting classes.								
F18. We are given opportunities to put into practice what we learn in the accounting classroom.								
F19. Accounting is more understandable when it is related to my real life experiences.								
F20. The accounting lecturer makes us see the link between theory and practice in accounting**.**								

Thank you for your cooperation.

Regards

MAPUYA M.



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PhD Candidate. (DOCTOR OF EDUCATION)

mmapuya@cut.ac.za

Student Number: 20393806

Academic Year: 2018

Central University of Technology, Free State.

Welkom Campus.

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APPENDIX 1: QUESTIONNAIRE ON FIRST YEAR ACCOUNTING STUDENT TEACHERS' LEARNING EXPERIENCES AND IMPLICATIONS ON CURRICULUM IMPLEMENTATION

Dear student

The purpose of this questionnaire is to obtain first-hand information from you about your learning experiences in the accounting lecture hall and to determine how these learning experiences implicate curriculum implementation. Please note that this is not an academic evaluation which has correct or wrong answers. It is highly anticipated that your responses will provide the stakeholders involved in curriculum implementation with insight into your real learning experiences in the lecture hall. Such insight will guide them towards creating academically enabling learning experiences in curriculum implementation that will promote your academic success. Thus your honest, unbiased and objective responses and opinions will be used to inform future approaches in curriculum implementation that will benefit future Ffrst year accounting student teachers.

Please note that this investigation is conducted within the parameters of ethical considerations that are universally accepted in research. As such, your participation in this study is entirely voluntary and founded on informed consent. No forms of benefits will therefore accrue to you emanating from your participation in this investigation.

A. BIOGRAPHICAL INFORMATION

Please indicate your gender and age in the respective boxes below

A1. Gender	Male	**1**
	Female	**2**
A2. Age	Please write down your age in the box →	

STATEMENTS ON THE VARIOUS COGNITIVE ABILITIES IN LEARNING TASKS.

The statements below seek to measure the extent to which the learning tasks promote the various cognitive abilities.

How to respond to each statement

Indicate your opinion on the level of frequency between a scale of 1 and 7, with 1 being **NOT AT ALL** (the lowest rank) and 7 being **ALWAYS** (the highest rank). Tick the number which best represents and describes your opinion on the scale for each statement provided.

INCORPORATION OF MULTIPLE INTELLIGENCIES IN CURRICULUM IMPLEMENTATION									
My teaching and learning activities and assessments in Accounting 1 promote the following intelligences and abilities.		NOT AT ALL ←						ALWAYS →	FOR OFFICE USE ONLY
B. ANALYTICAL INTELLIGENCE		**1**	**2**	**3**	**4**	**5**	**6**	**7**	
	A1. I encounter learning tasks in accounting that require me to analyse information.								
	A2. I encounter learning tasks in accounting that require me to make my own personal judgement about various scenarios.								
	A3. I encounter learning tasks in accounting that require me to be critical when dealing with them.								
	A4. I do well in accounting learning activities that require me to make judgements.								
	A5. I am able to analyse accounting content.								
	A6. I can be critical of accounting content when dealing with learning tasks.								
	A7. My accounting learning tasks promote my comparing and contrasting skills.								
	A8. I believe in my evaluative abilities in accounting.								
	A9. I do well in accounting learning tasks that require me to use my assessment abilities.								
	A10. I do well in learning activities that require me to analyse accounting content.								
	A11. I trust my ability to make sound and valid judgements in accounting.								
	A12. I do well in learning activities that require me to be a critique of accounting content.								
	A13. I do well in accounting learning activities that require me to compare and contrast.								
	A14. I am good at assessing various contexts in accounting.								
	A15. I encounter learning tasks that require me to show the similarities and differences between items in accounting.								
	A16. I encounter accounting learning tasks that require me to make some evaluations within a given context.								
	A17. I encounter accounting learning tasks that require me to make some assessments.								
	A18. I do well in accounting learning activities that require me to make some evaluations.								
PTO									

C. CREATIVE INTELLIGENCE		1	2	3	4	5	6	7	OFFICE USE ONLY
	C1. I can create different scenarios from which I make possible correct suppositions in accounting.								
	C2. I can come up with something new in accounting.								
	C3. I encounter learning tasks that require me to make some predictions in accounting								
	C4. I encounter accounting learning tasks that require me to make suppositions.								
	C5. I enjoy doing accounting tasks that test my inventive skills.								
	C6. I trust my academic imaginations to be correct and relevant in accounting.								
	C7. I encounter accounting learning tasks that require me to be creative.								
	C8. I believe in my inventive skills in accounting.								
	C9. I make correct suppositions in accounting.								
	C10. I encounter accounting learning tasks that require me to discover new knowledge								
	C11. I encounter accounting learning tasks that require me to design and produce new things.								
	C12. I have creative ability in accounting content.								
	C13. I make academically correct and relevant imaginations in accounting.								
	C14. I use my prior knowledge to discover knew knowledge in accounting.								
	C15. I can make some correct and accurate predictions in accounting.								
	C16. I encounter learning tasks that require me to use my own imagination ability in accounting.								
	C17. I am capable of doing accounting learning tasks that require me to arrive at new knowledge and conclusions.								
	C18. I am good at making correct and accurate predictions in accounting.								

PTO

D. PRACTICAL INTELLIGENCE									
	D1. I encounter learning tasks in accounting that require me to apply what I have learnt.								
	D2. I can practice what I have learned in the accounting classroom.								
	D3. I can successfully implement new skills and concepts in accounting learning tasks.								
	D4. I can correctly employ previous knowledge when dealing with accounting learning tasks.								
	D5. I encounter learning tasks in accounting that require me transform theory into practice.								
	D6. I am good at applying old knowledge to new situations in accounting.								
	D7. I can use previously acquired knowledge when dealing with new learning tasks in accounting.								
	D8. I get higher marks in accounting tasks that require me to put into practice what I have learned in the classroom.								
	D9. I can translate theory into practice in accounting.								
	D10. I am able to apply what I have learnt in the accounting classroom in different contexts.								
	D11. I enjoy doing accounting tasks that require me to use my previously acquired knowledge.								
	D12. I enjoy relating theory with practice in accounting.								
	D13. I encounter learning tasks in accounting that require me to put what I have learnt into practice.								
	D14. I encounter learning tasks in accounting that require me to employ previous knowledge to deal with learning tasks.								
	D15. I am capable of implementing newly acquired skills and concepts in accounting learning tasks.								
	D16. I encounter learning tasks in accounting that require me to use previously acquired knowledge.								
	D17. I am confident in ability to employ previous knowledge when dealing with new tasks in accounting.								
	D18. I encounter learning tasks in accounting that require me to implement what I have learned in the classroom.								
	PTO								

E. MULTIPLE INTELLIGENCIES	1	2	3	4	5	6	7	OFFICE USE ONLY
E1. The accounting lecturer teaches me in ways that lead me to discover new knowledge in accounting.								
E2. We learn through experiments in accounting.								
E3. The accounting lecturer plays a guiding and facilitating role in the teaching and learning process of accounting.								
E4. The accounting lecturer gives me case studies in which I have to demonstrate my understanding of the content.								
E5. The accounting lecturer promotes my ability to arrive at my own conclusions about accounting issues rather than spoon feeding me.								
E6. The accounting lecturer places me as a student at the core centre of teaching and learning activities. (Participative teaching)								
E7. I can personally relate to the accounting content because of the way it is taught to me.								
E8. The accounting lecturer creates opportunities for me to learn from other students through group work.								
E9. The accounting lecturer promotes my learning through problem-based activities (context-based activities).								
E10. My learning activities in accounting are practical.								
E11. I encounter learning tasks in accounting which require me to analyse various accounting related scenarios to arrive at a solution								
E12. The accounting lecturer gives me learning scenarios in accounting which lead me to new conclusions about accounting.								

PTO

F. SOCIAL CONSTRUCTIVISM								
	1	2	3	4	5	6	7	OFFICE USE ONLY
F1. I get opportunities to interact with my classmates in the teaching and learning process of accounting**.**								
F2. My accounting lecturer reduces support in learning activities as I gain more understanding on how accomplish them.								
F3. What I experience in the world is taught in the accounting classes.								
F4. My understanding of accounting improves through sharing and exchanging ideas with my classmates.								
F5. I enjoy accounting lessons in which I am actively involved.								
F6. When doing learning activities, I get examples related to the task on hand for guidance								
F7. Accounting is more understandable when it is related to my real life experiences.								
F8. My accounting lecturer empowers me to be an independent and autonomous student.								
F9. I value the power of group learning as opposed to individual learning in accounting.								
F10. I understand the learning content in accounting better when I am led to new insight into content by the lecturer.								
F11. I value the contribution of individual students in the accounting lesson for it to be successful.								
F12. My accounting lecturer makes me understand that teaching and learning of accounting is a shared responsibility.								
F13. My involvement in the lesson depends on my eagerness to learn and understand new accounting content.								
F14. When doing difficult tasks, I am given leads and hints that enable me to accomplish the task successfully.								
F15. I learn activities that are related to my daily experiences in the world.								
F16. Accounting content is presented from the known to the unknown to enhance better understanding.								
F17. My participation in the lesson makes learning of accounting more enjoyable.								
F18. I am given opportunities to put into practice what I learn in the accounting classroom.								
F19. I rely on the help and assistance of knowledgeable others to understand new content in accounting.								
F20. The accounting lecturer makes me see the link between theory and practice in accounting**.**								

Thank you for your cooperation

QUESTIONS FOR THE FOCUS GROUP INTERVIEWS

On

The Learning Experiences of First Year Accounting Student Teachers and Implications On Curriculum Implementation

1. What is your understanding of the following terms as they were used in this study and in relation to the teaching and learning activities in accounting? Please provide an example of a learning task in which every term is depicted.

Analyse	Create	Apply
Critique	Invent	Use
Judge	Discover	Put into practice
Compare and Contrast	Predict	Implement
Evaluate	Imagine if…	Employ
Assess	Suppose that…	Render practice

Justification for including the question in the focus group interviews

This question sought to evaluate and determine the students' understanding of the statements which they responded to in the correlational part of the study, specifically those relating to multiple intelligences. The researcher wanted to establish whether or not the students' ratings were informed by a thorough and sound understanding of the terms as they were used in the questionnaire. The question sought to establish the reliability of the statements that were posed under each construct. To determine whether or not they measured what they were supposed to measure.

2. What influence does age and gender have on your ability to identify and relate to teaching and learning activities that appeal to analytical intelligence, creative intelligence, practical intelligence, guided instruction and social constructivism?

Justification for including the question in the focus group interviews

Apart from qualifying the statistical results for the hypotheses on age and gender over multiple intelligences, guided instruction and social constructivism, this question was based on Vygotsky's (1978) perception that age influences ones' perceptions and interpretation of their learning activities and experiences. The study

findings of Arisoy (2007); Brown, Williams and Lynch (2011); Den Brok (2005) and Rakici (2004) in which gender was found to have an effect on one's perceptions of learning activities and experiences also resonated well with this question.

3. Do you have study groups for accounting in which your various intelligences and abilities are developed? (informally). If you have, explain the benefits of such informal study groups.

Justification for including the question in the focus group interviews

This question sought to identify whether or not the students realised and acknowledge the educational value of study groups, noting that structured group learning is one of the key aspects of cooperative learning, a product of social constructivism. In addition, both Sternberg (2009) and Vygotsky (1978) advocate for such type of learning in which understanding of the subject matter is a collectively shared and negotiated activity among the students. This question is compatible with the underlying assumptions of the social cognitive theory as advanced by Bandura (1998, 2001, 2002) which explains how students can learn from their personal interactions with each other and the social environment.

4. With accounting being a practical subject, are you able to establish the relationship between theory and practice?

Justification for including the question in the focus group interviews

This question sought to appeal to analytical intelligence and practical intelligence of students. The question is also in harmony with some of the assumptions advanced by a social constructivist approach to curriculum implementation. Lastly, it was meant to determine whether or not the students are taught predominantly in the abstract or practical realms.

5. Explain whether or not you experience what you learn in the accounting class in your daily lives.

Justification for including the question in the focus group interviews

This question was informed by the notions of practical intelligence and social constructivism which predominantly emphasise learning activities that mirror the real

life experiences of students. If the students can confidently confirm that they experience what they learn in the accounting class in their daily lives, it implies that their practical intelligence is promoted while social constructivist idea of active real life practical based learning is also sustained.

6. Which approaches to curriculum implementation would you say best facilitate and enhance your realisation of analytical, creative and practical intelligences?

Justification for including the question in the focus group interviews

This question was inspired by Sternberg's (2002, 2008) and Sternberg and Grigorenko (2007) views on how the curriculum should be implemented to promote the analytical intelligence, creative intelligence and practical intelligence of students in the learning environment. By including this question, the aim of the researcher was to identify the students'' perceptions of curriculum implementation approaches which are consistent with multiple intelligences. The ultimate goal was to identify a specific curriculum implementation approach that is compatible with a specific type of multiple intelligence. The researcher believes that since these multiple intelligences are not the same, a blanket approach to curriculum implementation will not work as far as their fulfilment is concerned. The analytical intelligence, creative intelligence and practical intelligence of students cannot be taught, promoted and developed using a similar approach or teaching strategy.

7. How often do you do formal group activities (group discussions and group presentations, cooperative learning) in the accounting class? (responses can be expressed as a percentage of the last 10 lessons)

Justification for including the question in the focus group interviews

The rationale behind this question was to explore the students' learning experiences in the learning environment in light of social constructivist learning approaches. The researcher wanted to find out the frequency at which the curriculum was implemented through social constructivist approaches. The question also served to interrogate the quantitative findings on the approaches predominantly used to

implement the curriculum, and then take an informed position on the extent to which curriculum implementation supported the students' multiple intelligences.

8. Explain how you would have benefited from these formal group activities if they were used frequently in the teaching and learning of accounting.

Justification for including the question in the focus group interviews

This was a follow up to Interview Question 3 above. The researcher wanted to find out if the students really understood the benefits and educational implications of social constructivist teaching approaches such as groups discussions and cooperative learning. The rationale was also to find out if there are any perceived differences in the benefits reaped by the students when they engage in accounting activities in their informal learning groups and when they engage in them in formal learning groups under the supervision of the lecturer. It was also informed by the views of Bandura (1998, 2001 & 2002) and Vygotsky (1978) on group learning in both the learning and social environment.

9. Explain the role predominantly played by the lecturer during instruction / lesson presentation.

Justification for including the question in the focus group interviews

The reason behind including this question was to explore the students' learning experiences through obtaining phenomenological descriptions of the role played by the lecturer in curriculum implementation. It was to obtain the students' perceptions of how the lecturer was implementing the curriculum, through explaining the lecturer's role in curriculum implementation. Obtaining detailed descriptions of the role played by the lecturer during instruction was perceived to be very significant towards describing how it feels like to access the accounting curriculum for first year accounting student teachers, and thus the students' learning experiences.

10. What is the nature and kind of learning support you receive from the lecturer during instruction and from the start to the end of topic?

Justification for including the question in the focus group interviews

Similar to the main reasons behind Interview Question 9 above, the main reasons for including this question was to determine the kind of support offered to the students during instruction to support and promote their learning and understanding of the subject content. The researcher believes that the kind of support offered to students by their lecturer influences has some huge implications on the students' perceptions of their learning experiences. The kind of lecturer support towards the students' learning also helps one to identify the kind of approach being used to implement the curriculum. It was therefore deemed necessary to explore the students' learning experiences and the approaches used to implement the curriculum through identifying the nature and type learning support they received from the lecturer during instruction and from the start to the end of a new topic.

11. Explain how you are involved in the lesson during instruction as student

Justification for including the question in the focus group interviews

The purpose of this question was to provide the researcher with some insight into the learning experiences of the first year accounting student teachers through obtaining some phenomenological views from the students about how they are involved in the lessons. Ultimately, the responses informed and solidified the researcher's stance on the approaches predominantly used in curriculum implementation. How the students are involved in the lesson during instruction is not only a function of the lecturers' pedagogical philosophy but also depends on the teaching strategy being used.

12. How do you want future accounting lessons to be presented?

Justification for including the question in the focus group interviews

This question sought to obtain the students' views on curriculum implementation approaches which they perceived ideal in enhancing the kind of a learning environment and learning experiences which they envisaged. By presenting this question just after Interview Question 11 on their involvement in the teaching and learning process, this question offered the students an opportunity to reflect on their teaching and learning experiences and come up with their own preferred approach to implement the curriculum in ways that would make their learning experiences

academically enabling and supportive. Getting such an approach to implement the curriculum from the students implies that it is informed by their dynamic learning needs and experiences. Thus, the ultimate purpose of this question was to discover the implications the students' current learning experiences have on curriculum implementation in future lessons.

13. From what sources do your teaching and learning activities usually come?

Justification for including the question in the focus group interviews

The rationale for this question was to explore the learning experiences of students in light of the teaching and learning activities they encountered.

14. Are learning activities designed and developed by the lecturer or not? Provide reasons for your answer.

Justification for including the question in the focus group interviews

It was meant to provide the researcher with some insight into the efforts put in by the accounting lecturer to provide the students with differentiated teaching and learning activities that are purposefully designed to cater for the learning needs of the individual students accessing the accounting curriculum. It is the researcher's firm view that learning activities must be modified by those involved in curriculum implementation to make them consistent with the realities in the learning environment, paying particular attention to the individual and yet diverse needs of students.

15. What is the nature and type of activities in accounting which you enjoy the most? Provide reasons for your answer.

Justification for including the question in the focus group interviews

In identifying the nature and types of learning activities the students enjoyed the most, the aim of the researcher was to use this information to inform recommendations and implications for future teaching and learning activities. Teaching and learning activities are an undeniably fundamental aspect of curriculum implementation which have a direct effect on the students' learning experiences (Litmmanen, Loyens & Lonka, 2014; Cleveland &Fisher, 2014). It is therefore

imperative to find out from the students the nature and types of activities which they enjoy the most.

16. How would you characterise or define a very interesting and meaningful lesson?

Justification for including the question in the focus group interviews

The purpose of this question was to obtain the students' views of their ideal interesting and meaningful lesson. This information was very instrumental in informing the recommendations made by the researcher on implementing the curriculum through approaches that make learning very interesting and meaningful to the students. Among others, the question was found to resonate very well with the sentiments of Metriana (2014), and Tokan and Imakulata (2019) on learning experiences, learning behaviour and student achievement.

17. Out of the last 10 lessons that you attended, how many lessons would fall within your characterisation and definition of an interesting and meaningful lesson and why?

Justification for including the question in the focus group interviews

The rationale behind this question was based on the idea of obtaining reflective and critical feedback from the students regarding their learning experiences as advanced by Killen (2016). This is regarded as a signpost for any future attempts to improve the students' learning experiences. Thus, this question was meant to get first-hand information from the students themselves regarding their learning experiences. In addition, the qualitative data for this question was meant to triangulate the students' responses on Interview Question 16 above. This question also serve to give the researcher a profound sense of what it feels like to access the accounting curriculum in the learning environment created by the accounting lecturer. Lastly, it was meant to establish the extent to which the students' learning experiences were within their envisaged definition of an interesting and meaningful lesson and the degree to which the students found relevance and meaning in their learning experiences.

18. What could the lecturer have done to enhance your learning experiences and make them more positive and academically enabling?

Justification for including the question in the focus group interviews

The purpose of this question was to present the students with an opportunity to reflect on their phenomenological learning experiences and come up with suggestions to mitigate the shortcomings and deficiencies of the approach currently being used to implement the curriculum. By allowing the students to adopt a critical reflection of their learning experiences, this question sought to use the students' perceptions of positive and academically learning experiences as a basic point of departure for any recommendations on how future learning experiences should be shaped. The information on what could have been done to make learning experiences more positive and academically enabling was also very instrumental in determining through the eyes of the students, the role played by the lecturer when implementing the curriculum as suggested by Fayombo (2015); Fardon (2013); McKernan (2008); Killen (2016); Mapuya (2018); Riener and Willingham (2010); and Visser and Vreken (2013).

19. Based on your previous teaching and learning experiences in the lecture hall, would you recommend future prospective students to enrol for this module? Please explain your answer.

Justification for including the question in the focus group interviews

The reason behind this question was to determine whether or not the students were optimistic about future classes in the midst of the manner in which the curriculum was being implemented and also in light of their learning experiences. To some extent, it was envisaged that the students' responses for this question would reveal the extent to which it was necessary to adopt a paradigm shift in curriculum implementation approaches. Its inclusion was also inspired by the pedagogical views of Cleveland and Fisher (2014); Litmmanen, Loyens and Lonka (2014) and Tokan and Imakulata (2019).

End of questions

THANK YOU

PRESENTATION OF FOCUS GROUP INTERVIEW PARTICIPANTS

On

The Learning Experiences of First Year Accounting Student Teachers and Implications On Curriculum Implementation

FOCUS GROUP INTERVIEW	CODE ASSIGNED TO FOCUS GROUP INTERVIEW PARTICIPANT	FOCUS GROUP INTERVIEW PARTICIPANT NUMBER
FOCUS GROUP INTERVIEW: GROUP A Assigned code for the group: FGI GA	A1	P1
	A2	P2
	A3	P3
	A4	P4
	A5	P5
	A6	P6
FOCUS GROUP INTERVIEW: GROUP B Assigned code for the group: FGI GB	B1	P7
	B2	P8
	B3	P9
	B4	P10
	B5	P11
	B6	P12
FOCUS GROUP INTERVIEW: GROUP C Assigned code for the group: FGI GC	C1	P13
	C2	P14
	C3	P15
	C4	P16
	C5	P17
	C6	P18
FOCUS GROUP INTERVIEW: GROUP D Assigned code for the group: FGI GD	D1	P19
	D2	P20
	D3	P21
	D4	P22
	D5	P23
	D6	P24
FOCUS GROUP INTERVIEW: GROUP E Assigned code for the group: FGI GE	E1	P25
	E2	P26
	E3	P27
	E4	P28
	E5	P29
	E6	P30
	F1	P31

FOCUS GROUP INTERVIEW: GROUP F Assigned code for the group: FGI GF	F2	P32
	F3	P33
	F4	P34
	F5	P35
	F6	P36
FOCUS GROUP INTERVIEW: GROUP G Assigned code for the group: FGI GG	G1	P37
	G2	P38
	G3	P39
	G4	P40
	G5	P41
	G6	P42
FOCUS GROUP INTERVIEW: GROUP H Assigned code for the group: FGI GH	H1	P43
	H2	P44
	H3	P45
	H4	P46
	H5	P47
	H6	P48

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Reliability

Scale: Constructivist Questionnaire

Case Processing Summary

		N	%
Cases	Valid	20	100,0
	Excluded[a]	0	0,0
	Total	20	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
,974	86

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Scale: Reliabilitiy of Social Constructivism

Case Processing Summary

		N	%
Cases	Valid	20	100,0
	Excluded[a]	0	0,0
	Total	20	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
,924	20

[DataSet1] F:\Mapuya\Pilot Study Data, Mapuya 17 August 2018.sav

Scale: Reliabilitiy of Multiple I Intelligence

Case Processing Summary

		N	%
Cases	Valid	20	100,0
	Excluded[a]	0	0,0
	Total	20	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
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Scale: Reliability of Analytical Intelligence

Case Processing Summary

		N	%
Cases	Valid	20	100,0
	Excluded[a]	0	0,0
	Total	20	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
,908	18

[DataSet1] F:\Mapuya\Pilot Study Data, Mapuya 17 August 2018.sav

Scale: Reliabilitiy of Practical Intelligence

Case Processing Summary

		N	%
Cases	Valid	20	100,0
	Excluded[a]	0	0,0
	Total	20	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
,922	18

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Scale: Reliabilitiy of Creative Intelligence

Case Processing Summary

		N	%
Cases	Valid	20	100,0
	Excluded[a]	0	0,0
	Total	20	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
,917	18

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Correlations: Age v/s All Multiple Intelligences

Correlations

rAge			Analytical Intelligence
18-21	Analytical Intelligence	Pearson Correlation	1
		Sig. (2-tailed)	
		N	70
	Creative Intelligence	Pearson Correlation	.777**
		Sig. (2-tailed)	0,000
		N	70
	Practical Intelligence	Pearson Correlation	.723**
		Sig. (2-tailed)	0,000
		N	70
22-36	Analytical Intelligence	Pearson Correlation	1
		Sig. (2-tailed)	
		N	51
	Creative Intelligence	Pearson Correlation	.818**
		Sig. (2-tailed)	0,000
		N	51
	Practical Intelligence	Pearson Correlation	.690**
		Sig. (2-tailed)	0,000
		N	51

**. Correlation is significant at the 0.01 level (2-tailed).

Creative Intelligence	Practical Intelligence
.777**	.723**
0,000	0,000
70	70
1	.766**
	0,000
70	70
.766**	1
0,000	
70	70
.818**	.690**
0,000	0,000
51	51
1	.820**
	0,000
51	51
.820**	1
0,000	
51	51

Correlations: Gender v/s all multiple intelligences

Correlations

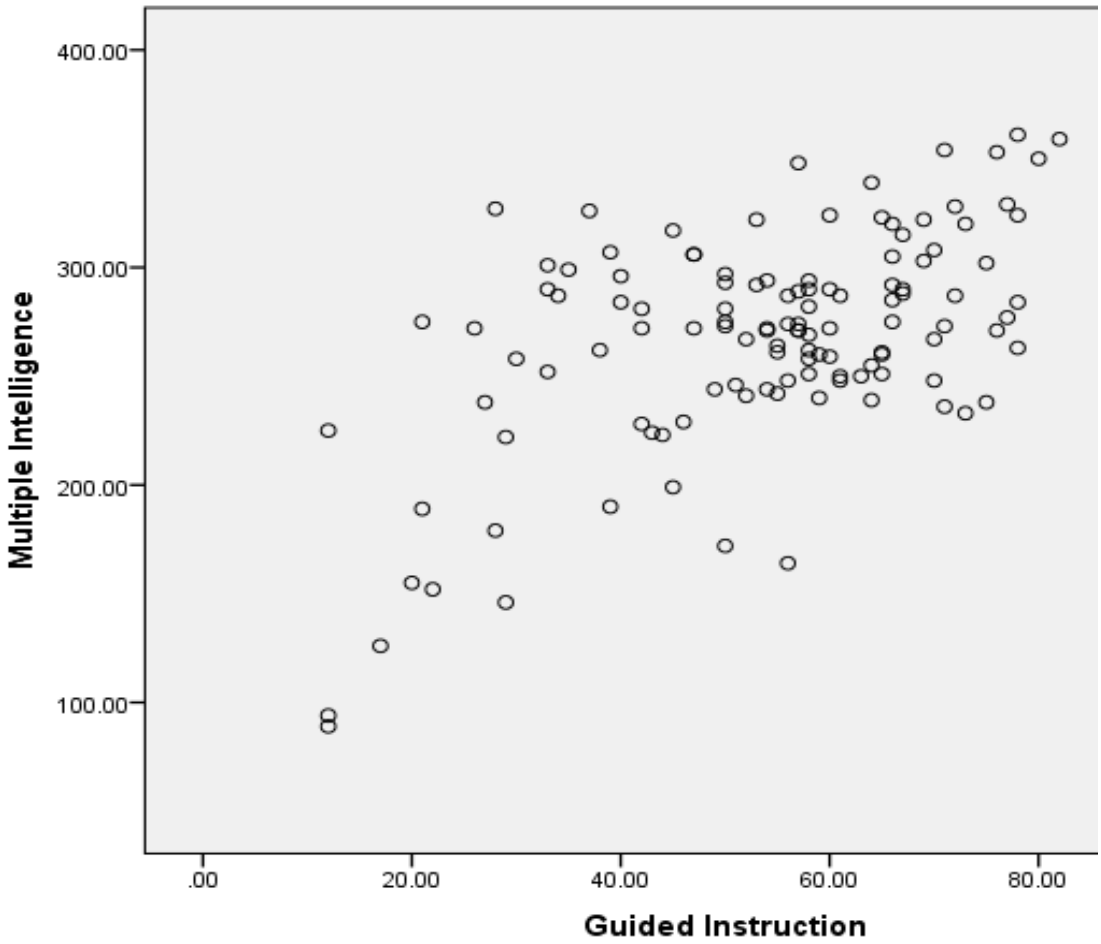
A1.Gender			Analytical Intelligence
Male	Analytical Intelligence	Pearson Correlation	1
		Sig. (2-tailed)	
		N	46
	Creative Intelligence	Pearson Correlation	.859**
		Sig. (2-tailed)	0,000
		N	46
	Practical Intelligence	Pearson Correlation	.738**
		Sig. (2-tailed)	0,000
		N	46
Female	Analytical Intelligence	Pearson Correlation	1
		Sig. (2-tailed)	
		N	75
	Creative Intelligence	Pearson Correlation	.732**
		Sig. (2-tailed)	0,000
		N	75
	Practical Intelligence	Pearson Correlation	.677**
		Sig. (2-tailed)	0,000
		N	75

**. Correlation is significant at the 0.01 level (2-tailed).

Creative Intelligence	Practical Intelligence
.859**	.738**
0,000	0,000
46	46
1	.845**
	0,000
46	46
.845**	1
0,000	
46	46
.732**	.677**
0,000	0,000
75	75
1	.733**
	0,000
75	75
.733**	1
0,000	
75	75

Scatterplot: Guided Instruction & Multiple intelligence

[DataSet1] F:\Mapuya\Final Study\Final Study Data 28 September 2



Correlations: Guided instruction & Multiple Intelligence

Correlations

		Multiple Intelligence
Multiple Intelligence	Pearson Correlation	1
	Sig. (2-tailed)	
	N	121
Guided Instruction	Pearson Correlation	.564**
	Sig. (2-tailed)	,000
	N	121

**. Correlation is significant at the 0.01 level (2-tailed).

2018, Mapuya.sav

Guided Instruction
.564**
,000
121
1
121

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  /PRINT=TWOTAIL NOSIG
  /MISSING=PAIRWISE.
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Correlations: Age v/s Guided Instruction and Social Constructivism

Correlations

rAge			Guided Instruction
18-21	Guided Instruction	Pearson Correlation	1
		Sig. (2-tailed)	
		N	70
	Social Constructivism	Pearson Correlation	.713**
		Sig. (2-tailed)	0,000
		N	70
22-36	Guided Instruction	Pearson Correlation	1
		Sig. (2-tailed)	
		N	51
	Social Constructivism	Pearson Correlation	.847**
		Sig. (2-tailed)	0,000
		N	51

**. Correlation is significant at the 0.01 level (2-tailed).

Social Constructivism
.713**
0,000
70
1
70
.847**
0,000
51
1
51

Correlations: Gender v/s Guided Instruction & Social Constructivisn

Correlations

A1.Gender			Guided Instruction
Male	Guided Instruction	Pearson Correlation	1
		Sig. (2-tailed)	
		N	46
	Social Constructivism	Pearson Correlation	.842**
		Sig. (2-tailed)	0,000
		N	46
Female	Guided Instruction	Pearson Correlation	1
		Sig. (2-tailed)	
		N	75
	Social Constructivism	Pearson Correlation	.733**
		Sig. (2-tailed)	0,000
		N	75

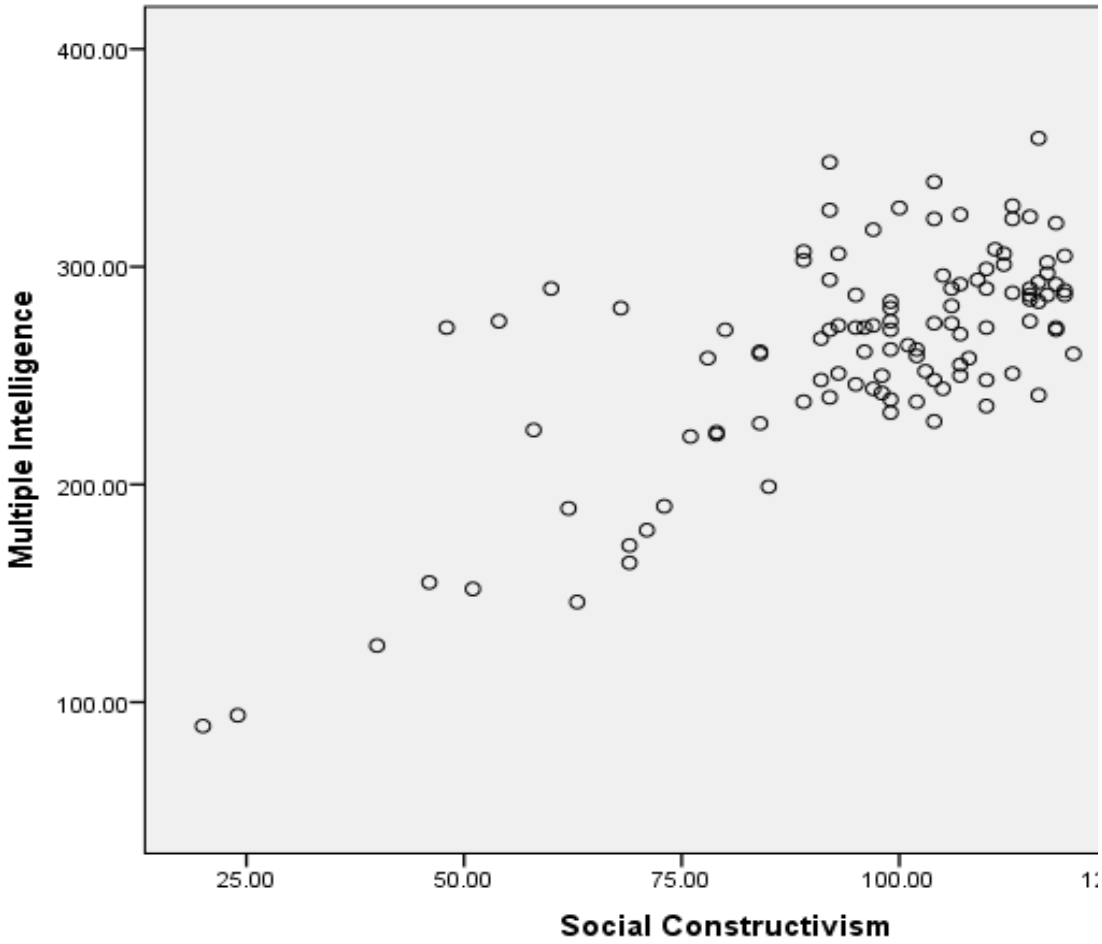
**. Correlation is significant at the 0.01 level (2-tailed).

n

Social Constructivism
.842**
0,000
46
1
46
.733**
0,000
75
1
75

Scatterplot: Social constructivism & Multiple intelligence

[DataSet1] F:\Mapuya\Final Study\Final Study Data 28 September 2



Correlations: Social constructivism & Multiple intelligence

Correlations

		Multiple Intelligence
Multiple Intelligence	Pearson Correlation	1
	Sig. (2-tailed)	
	N	121
Social Constructivism	Pearson Correlation	.736**
	Sig. (2-tailed)	,000
	N	121

**. Correlation is significant at the 0.01 level (2-tailed).

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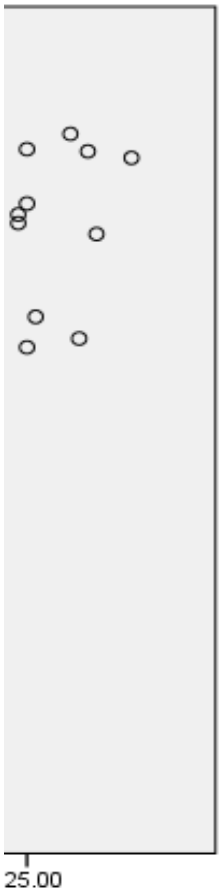

Social Constructivism
.736**
,000
121
1
121

Analytical Intelligence T-Test: Gender

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Group Statistics

A1.Gender		N
Analytical Intelligence	Male	46
	Female	75

		Levene's Test for Equality of Va
		F
Analytical Intelligence	Equal variances assumed	3,711
	Equal variances not assumed	

Analytical Intelligence T-Test: Age

Group Statistics

rAge		N
Analytical Intelligence	18-21	70
	22-36	51

		Levene's Test for Equality of Va
		F
Analytical Intelligence	Equal variances assumed	1,117
	Equal variances not assumed	

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Mean	Std. Deviation	Std. Error Mean
90,1522	19,78548	2,91721
87,8800	14,39966	1,66273

Independent Samples Test

riances	t-test for Equality of Means				
Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
,056	,729	119	,467	2,27217	3,11675
	,677	74,224	,501	2,27217	3,35779

Mean	Std. Deviation	Std. Error Mean
90,1286	14,74903	1,76285
86,8431	18,85669	2,64047

Independent Samples Test

riances	t-test for Equality of Means				
Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
,293	1,075	119	,285	3,28543	3,05595
	1,035	91,354	,303	3,28543	3,17485

95% Confidence Interval of the Difference	
Lower	Upper
-3,89931	8,44365
-4,41804	8,96239

95% Confidence Interval of the Difference	
Lower	Upper
-2,76565	9,33652
-3,02069	9,59156

Creative Intelligence T-Test: Gender

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Group Statistics

A1.Gender		N
Creative Intelligence	Male	46
	Female	75

		Levene's Test for Equality of Va
		F
Creative Intelligence	Equal variances assumed	5,207
	Equal variances not assumed	

Cteative Intelligence T-Test: Age

Group Statistics

rAge		N
Creative Intelligence	18-21	70
	22-36	51

		Levene's Test for Equality of Va
		F
Creative Intelligence	Equal variances assumed	,895
	Equal variances not assumed	

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Mean	Std. Deviation	Std. Error Mean
86,3043	23,41972	3,45305
86,1733	14,95703	1,72709

Independent Samples Test

riances	t-test for Equality of Means				
Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
,024	,038	119	,970	,13101	3,48619
	,034	67,752	,973	,13101	3,86088

Mean	Std. Deviation	Std. Error Mean
87,2857	16,35843	1,95521
84,7647	21,25332	2,97606

Independent Samples Test

riances	t-test for Equality of Means				
Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
,346	,737	119	,462	2,52101	3,41931
	,708	90,288	,481	2,52101	3,56087

95% Confidence Interval of the Difference	
Lower	Upper
-6,77198	7,03401
-7,57376	7,83579

95% Confidence Interval of the Difference	
Lower	Upper
-4,24957	9,29159
-4,55297	9,59498

Practtical Intelligence T-Test: Gender

Group Statistics

A1.Gender		N
Practical Intelligence	Male	46
	Female	75

		Levene's Test for Equality of Va
		F
Practical Intelligence	Equal variances assumed	2,832
	Equal variances not assumed	

Practical Intelligence T-Test: Age

Group Statistics

rAge		N
Practical Intelligence	18-21	70
	22-36	51

		Levene's Test for Equality of Va
		F
Practical Intelligence	Equal variances assumed	1,277
	Equal variances not assumed	

Mean	Std. Deviation	Std. Error Mean
92,9565	23,62292	3,48301
93,3600	16,69005	1,92720

Independent Samples Test

riances	t-test for Equality of Means				
Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
,095	-,110	119	,913	-,40348	3,67103
	-,101	72,632	,920	-,40348	3,98064

Mean	Std. Deviation	Std. Error Mean
95,0857	17,05383	2,03832
90,6275	22,39461	3,13587

Independent Samples Test

riances	t-test for Equality of Means				
Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
,261	1,243	119	,216	4,45826	3,58577
	1,192	89,587	,236	4,45826	3,74011

95% Confidence Interval of the Difference	
Lower	Upper
-7,67248	6,86552
-8,33755	7,53059

95% Confidence Interval of the Difference	
Lower	Upper
-2,64192	11,55844
-2,97259	11,88912

Guided Instruction T-Test: Gender

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Group Statistics

A1.Gender		N
Guided Instruction	Male	46
	Female	75

		Levene's Test for Equality of Va
		F
Guided Instruction	Equal variances assumed	5,491
	Equal variances not assumed	

Guided Instruction T-Test: Age

Group Statistics

rAge		N
Guided Instruction	18-21	70
	22-36	51

		Levene's Test for Equality of Va
		F
Guided Instruction	Equal variances assumed	3,733
	Equal variances not assumed	

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Mean	Std. Deviation	Std. Error Mean
53,2826	19,35707	2,85404
53,9733	14,79497	1,70838

Independent Samples Test

riances	t-test for Equality of Means				
Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
,021	-,221	119	,825	-,69072	3,12145
	-,208	77,012	,836	-,69072	3,32628

Mean	Std. Deviation	Std. Error Mean
53,7571	14,82403	1,77181
53,6471	18,92599	2,65017

Independent Samples Test

riances	t-test for Equality of Means				
Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
,056	,036	119	,971	,11008	3,06915
	,035	91,448	,973	,11008	3,18790

95% Confidence Interval of the Difference	
Lower	Upper
-6,87151	5,49006
-7,31417	5,93272

95% Confidence Interval of the Difference	
Lower	Upper
-5,96715	6,18732
-6,22187	6,44204

Social Constructivism T-Test: Gender

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Group Statistics

A1.Gender		N
Social Constructivism	Male	46
	Female	75

		Levene's Test for Equality of Va
		F
Social Constructivism	Equal variances assumed	1,194
	Equal variances not assumed	

Social Constructivism T-Test: Age

Group Statistics

rAge		N
Social Constructivism	18-21	70
	22-36	51

		Levene's Test for Equality of Va
		F
Social Constructivism	Equal variances assumed	6,217
	Equal variances not assumed	

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Mean	Std. Deviation	Std. Error Mean
94,8913	25,73301	3,79413
101,1067	19,12517	2,20838

Independent Samples Test

riances	t-test for Equality of Means				
Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
,277	-1,518	119	,132	-6,21536	4,09387
	-1,416	75,394	,161	-6,21536	4,39003

Mean	Std. Deviation	Std. Error Mean
100,4714	18,83623	2,25136
96,3725	25,68654	3,59684

Independent Samples Test

riances	t-test for Equality of Means				
Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
,014	1,013	119	,313	4,09888	4,04586
	,966	87,159	,337	4,09888	4,24333

95% Confidence Interval of the Difference	
Lower	Upper
-14,32164	1,89092
-14,96000	2,52928

95% Confidence Interval of the Difference	
Lower	Upper
-3,91233	12,11009
-4,33498	12,53274

Editing and Translation Services

8 Weymouth Place

Beethoven Avenue

Walmer Heights

Port Elizabeth

6070

Mobile: 083 415 4570

E-mail: renvandm@gmail.com

Renée van der Merwe

B A Hons (Applied Linguistics)

SATI Accredited (1998)

19 August 2019

Dear Dr. Rambuda

This serves to confirm that the doctoral thesis, THE LEARNING EXPERIENCES OF FIRST-YEAR ACCOUNTING STUDENT TEACHERS AND IMPLICATIONS FOR CURRICULUM IMPLEMENTATION by Medson Mapuya, has been submitted to me for language editing.

While I have suggested various changes, I cannot guarantee that these have been implemented nor can I take responsibility for any other subsequent changes or additions that may have been made.

Yours faithfully

Renée van der Merwe

Editing and Translation Services

8 Weymouth Place

Beethoven Avenue

Walmer Heights

Port Elizabeth

6070

Mobile: 083 415 4570

E-mail: renvandm@gmail.com

INVOICE

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Language editing of doctoral thesis: 102 451 words @ R00.14 cents per word

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