THE ROLE OF A RESPONSIVE CURRICULUM IN OPTIMISING LEARNING IN HIGHER EDUCATION

BY

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DECLARATION

I, NADIA EMELIA HUMAN declare that this thesis, 'THE ROLE OF A RESPONSIVE CURRICULUM IN OPTIMISING LEARNING IN HIGHER EDUCATION' is, to the best of my knowledge and belief, my original work. All the sources that I have consulted or quoted directly have been acknowledged by means of complete references. I further declare that the opinions and conclusions arrived at are my own, and that this research work has not been submitted to any university for obtaining a qualification.

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ABSTRACT

Higher education has been challenged to respond to the inequalities of the past. This required an education system that is more responsive to the needs of underprepared students. The question that arises is whether Higher Education Institutions (HEIs) curricula create opportunities for students to adhere to the demands of the world of work and to assist students to take responsibility for their own learning. The purpose of this study is to investigate the role of a responsive curriculum in optimising learning in higher education. An interpretative and descriptive qualitative approach was used in which semi-structured interviews and document analysis served as data collection techniques enabling the researcher to gain more depth in understanding the reality of the responsiveness of curricula used in the Department of Informatics at a Higher Education Institution in Gauteng.

The study revealed that there is a dynamic but complex relationship between a responsive curriculum and optimisation of learning. Although the investigated curricula, responds to aspects of the knowledge domain, the findings seemed to indicate that there was not always a clear indication that the curricula fully respond to the needs of the students and industry. The findings further suggest that although content knowledge of the curricula plays a crucial role in the development of students, the needs of industry, society and students should also be met. Although the study's results cannot be generalised due to the small sample, the researcher is of the opinion that more can be done to improve the state of the current curricula. Inclusive curriculum development training should be provided to all stakeholders (lecturers, students and industry). This descriptive study concludes with the suggestion of using a responsive curriculum model that would enable curriculum developers to design a responsive curriculum allowing students to experience optimal learning in higher education.

Key concepts: Curriculum; Council on Higher Education; Educator; Higher Education; ICT; Lecturer; Optimising Learning; Outcomes-based education; Responsive curriculum; Student

DEDICATION

I dedicate this work to:

- My Heavenly Father and Creator for giving me the wisdom and strength to attempt this study.
- My parents, the late Rev. Robert and Ms. Cathy Human for the support, interest and motivation to attempt and complete this study.
- My husband, Quinton, for unconditional love and support.
- My son, Orsun Human, who bore neglect during this time of study.

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LIST OF THE MOST USED ABBREVIATIONS

BIS	Business Information System
BTECH	Bachelors of Technologiae
CHE	Council on Higher Education
CUMSA	Curriculum Model of South Africa
CDP	Curriculum Development Practitioner
DHET	Department of Higher Education and Training
DTECH	Doctor of Technologiae
ETDP	Equity Training Development Programme
GIED	Gauteng Institute for Educational Development
HE	Higher Education
HET	Higher Education and Training
HESA	Higher Education South Africa
HEIs	Higher Education Institutions
HEQSF	Higher Education Qualification Sub-framework
HEQC	Higher Education Quality Committee
HOD	Head of Department
ICT	Information and Communication Technology
IEB	Independent Examination Board
MTECH	Masters of Technologiae
NCS	National Senior Certificate
NDE	National Department of Education
NDIP	National Diploma
NQF	National Qualifications Framework
NTSI	National Training Strategy Initiative
OBE	Outcomes-based education
PQM	Programme Qualification Mix
PRISEC	Private Sector Educational Council
RNCS	Revised National Curriculum Statement
RUN	Regional Universities Network
SAQA	South African Qualifications Authority
UNESCO	United Nations Scientific and Cultural Organisation
USAID	United States Agency for International Development

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Orientation to the study

1.1 Introduction

Since the mid-1990s, university-based education has undergone complex processes of state-mandated institutional restructuring (Department of Higher Education, 2007). Following decades of rapid growth in tertiary education numbers of students and institutions and its growing internationalisation, there is an increasing recognition that greater attention should be paid to quality and relevance of the curriculum (Roadmap for OECD assessment of Higher Education, 2008:3; Council on Higher Education, 2013). Policymakers as well as the public devote considerable attention to the outcomes of tertiary education, given its importance for the maximising of human potential (Roadmap for OECD assessment of Higher Education, 2008:3). Developing measures that give due weight to teaching and learning has thus become essential.

The South African education system, both on basic education and higher educational levels, has experienced a paradigm shift from content-based education towards an outcomes-based education (OBE) in the early 1990's (Van der Horst & McDonald, 2007; Council on Higher Education, 2013). The focus of OBE is a student-centred approach (Curriculum, 2005). The criteria that students should adhere to, at the end of their educational career are that they should be productive, successful lifelong contributors to society and the world of work (Curriculum, 2005). The never satisfied and ever changing world of work requires students to easily adapt and function effectively in groups, to be productive, critical and independent thinkers, who expresses themselves and communicate effectively within social situations (Manifesto on Values, Education & Democracy, 2001:10). To achieve these criteria, students should be able to maximise their own potential (Jansen, 2012).

While the intentions behind OBE were good, it has not worked because the actual teaching and learning has been smothered by everything the lecturer is expected to do by way of preparation, recording and giving an account of what she or he has done in their teaching (Mail & Guardian, 2009:1). The way OBE has been implemented in South Africa seems to have the effect of systematically shifting the focus away from the actual teaching and learning to the administration of documents (Mail & Guardian, 2009:2). Strokes (2009:1) concurs with the latter and complements that the other reasons might be that the socio-economic climate of the country isn't sound, that matriculants are under prepared and often not ready for university

studies, that students 'lack basic comprehension and spelling' skills and lastly, that lecturers are not ready for OBE and its impact. What one wonders is whether students within the South African HEIs have the ability to create their own opportunities, to maximise their potential and whether the educational environment is equipped to empower students and prepare them for the world of work.

Higher Education (HE) can be seen as the primary institution of knowledge, which implies that it is here that the student is being made independent, competent and empowered so that he/she can function successfully in the world of work not only benefit for himself/herself but for the community he/she lives in (Alexander & November, 2010:3; Department of Higher Education and Training, 2013). The prosperity of a country is dependent on an ever changing educational system which will continuously develop entrepreneurs, rather than employees (Kloppers-Lourens, 2010:1). The focus immediately falls on the idea that entrepreneurs optimise their own potential. To realise the latter, it is important to establish how students could optimise their own potential through a responsive curriculum in the classroom so that they could become creative and critical thinkers who function independently and successfully in the world of work.

It is important for the researcher to mention that HEIs were not only impacted by the move from content-based education to outcomes-based education, but also due to the fact that there was a call for re-curriculation of HEIs curricula. The latter was noticed through the White paper of 1997, where a new higher education framework was introduced. In this study, the researcher will argue the role of a responsive curriculum based on a weaker form of OBE (it means that not all the principles and premises, like methods of assessment, critical cross field outcomes and level descriptors of the OBE philosophy are followed rigorously) to help students to optimise their own learning in HE (Council on Higher Education, 2013).

1.2 Background and motivation for the study

In the 21st century, the capabilities that people need for work, citizenship and self-actualisation are different to that of the 20th century. Society's educational systems must transform their curricula objectives, pedagogies and assessments to help all students attain the sophisticated outcomes requisite for a prosperous, successful lifestyle based on effective contributions in work and citizenship (Dede, 2007:3). Therefore, education should prepare students for a world in which expert thinking and complex communications (specialised jargon for a particular manner of expression) are the core intellectual capabilities by which people attain prosperity, economic

security individually and maximise their potential. Higher order thinking, learning and performances are influenced by HE, its curricula and assessment methods (Dede, 2007:10).

The Constitution of South Africa 1996 (Act No. 108 of 1996) provides the basis for curriculum transformation and development in contemporary South Africa. The preamble to the Constitution states that the aims of the Constitution are to:

- Heal the division of the past and to establish a society based on democratic values, social justice and fundamental human rights.
- Lay the foundations for a democratic and open society in which Government is based on the will of the people and that every citizen is equally protected by law.
- Build a united and democratic South Africa which is able to take its rightful place as a sovereign state in the family of nations.
- Improve the quality of life of all citizens and free the potential of each person.

In order for the abovementioned to be realised, the following is of importance for HE: "HE should transform to reflect the changes that are taking place in society and create a learning society which releases the creative and intellectual energies of all individuals". HE needs to meet the learning needs and aspirations of individuals through the development of their intellectual abilities and aptitudes throughout their lives" (Council on Higher Education, 2013). It can thus be argued that the demands of the country, the constitution, rapidly changing world of work and its demands impacts directly on the HE environment to adhere to career-orientated learning and maximising of human potential. To support this argument, the Manifesto on Values, Education and Democracy (2001:10) states the following: "The moral fibre, value systems and maximising of our people's potential are constituted and reconstituted in our schools, learning centres and institutions of higher learning which have extremely important roles to play in the development of our value systems and the empowerment of our societies". The National Department of Education (1997a:2) focuses thus on changes that should take place within HE so that South Africa could maintain higher levels of skills, competencies and maximising of human potential".

In 2009, I started working at the Tshwane University of Technology (TUT) as a Curriculum Development Practitioner in the Faculty of Information Communication and Technology (ICT). During this time it was my experience that although national and institutional re-curriculation

was taking place, the existing curricula of the Faculty of ICT may still not be responsive to the needs of the students and industry. Van Koller (2011:158) states "at Tshwane University of Technology (TUT) many faculties are still in the process of coming to terms with the exact implication and impact of the re-curriculation on their existing qualifications and success rates". My experience as a Curriculum Development Practitioner (CDP) at TUT foregrounds the following assumptions, that the current (still in 2016) curricula may still not be responsive to the needs of the students and industry. This assumption is highlighted by the current and ongoing re-curriculation processes taking place at TUT and also until qualifications are approved by the Department of Higher Education and Training (DHET) and accredited by the Council on Higher Education (CHE).

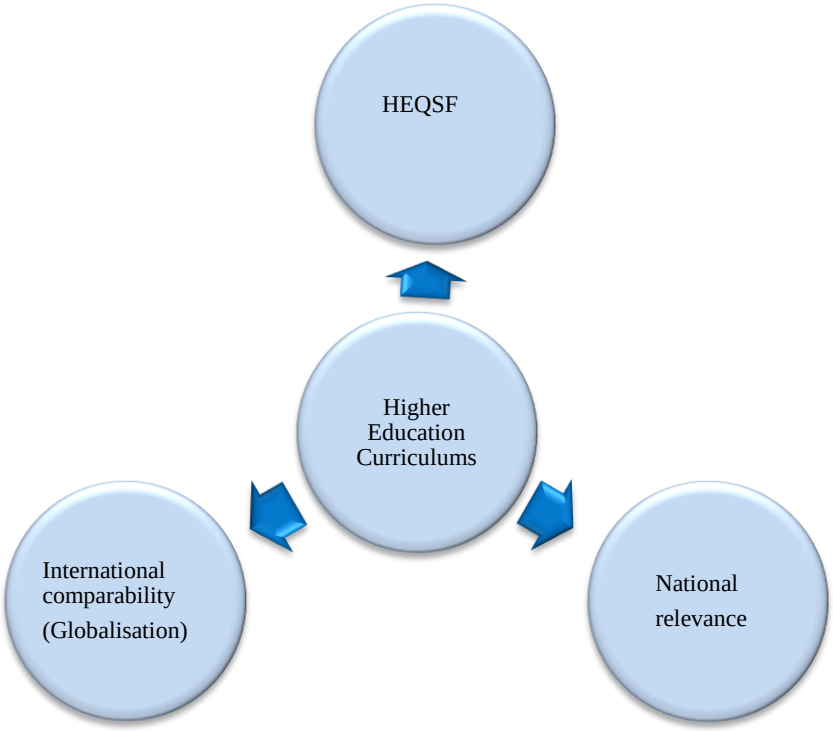
The research that was done by Shalem and Slonimsky (2006:2) on pedagogic responsiveness for academic depth further highlights the relevance of the study and the purpose for this research. This research focuses on "curriculum responsiveness" for epistemological access. What it means is to be responsive to both epistemological activities underpinning and systematic forms of inquiry on how HEIs' curricula are responsive to the needs of the "underprepared students". The notion of curriculum responsiveness includes economic, cultural, institutional, disciplinary and learning responsiveness (Moll, 2011). Based on the previous statement by Moll (2011), this study finds its relevance in the following statement: "Responsiveness of the curriculum denotes the extent to which the teaching and learning in HEIs meet the changing needs of employers by producing graduates that are innovative, skilful and competitive" (Shalem & Slonimsky, 2006:2).

This study will be based on the ideas of the following themes:

- The impact of a single co-ordinated framework, Higher Education sub-framework (means to facilitate access to and mobility and progression within education, training and career paths) on the curricula of HEI's and the Faculty of ICT (in chapter 2 the latter will be explained in more detail).
- The responsiveness of the curriculum of the Department of Informatics in the Faculty of ICT at the Tshwane University of Technology (TUT), to individuals, community and industry.
- International comparability as a pre-requisite for registration of qualification (Council on Higher Education, 2013).

The following diagram depicts the structure on which the study is based. The components in the diagram will be explained in depth in Chapter 2 of this study.

Diagram 1.1 Structure on which the study is based



Source: Human-Hendricks (2014)

1.3 Problem statement

The competing interests of globalisation and local imperatives constitute the sphere within which the research problem is situated. While it is necessary that the South African HEIs should be transformed to be both competitive and innovative; it is of paramount importance that such educational reform also be linked to the responsiveness in their curricula of HEIs, to the needs of students, industry and society (CHE, 2013). This study contends that it is important for the HE curriculum to respond to the needs of the students, industry and society.

The rapidly changing demands of the needs of the students, industry and society impacts directly on the HE environment to adhere to optimising learning potential. The problem arises when it is expected of the HE system to prepare students for a world in which almost all types of routine

cognitive tasks are done by critical thinking and complex communications as the core intellectual capabilities (Dede, 2007:3). The balance between the responsiveness of the curriculum and optimising learning is being construed as problematic. Hence the question whether the curricula of HE addresses the needs and demands of the world of work and whether learning is being optimised within the HE environment through the curriculum.

1.4 Aims of the research

The main aim of this research is to investigate how learning can be optimised in HE through a responsive curriculum.

The aim of the research suggests several objectives which are formulated as follows:

- To investigate factors shaping and influencing the curricula of the South African Higher educational landscape.
- To investigate what the characteristics of a responsive curriculum is and to define learning.
- To investigate whether the curriculum at a selected South African HEI can be regarded as responsive in optimising learning in higher education.
- To suggest recommendations with regards to the development of a responsive curriculum model in an effort to optimise learning in higher education.

1.4.1 Research questions

Based on the given problem statement in Par.1.3 and the description of the problem, this study aims to address the following question:

How can learning in a higher education institution be optimised through a responsive curriculum?

Furthermore, sub-questions to be explored are identified as:

- Which factors shape and influence the curricula of the South African higher educational landscape?
- What are the characteristics of a responsive curriculum in HE and how can the concept learning be defined?
- How may the curriculum at a selected South African HEI be considered as a responsive curriculum in optimising learning in higher education?
- How can a responsive curriculum model for HEIs be proposed to optimise learning?

1.5 The research process

1.5.1 Research paradigm

The chosen research paradigm is based on three philosophical assumptions: ontological, epistemological and methodological, that influences the researcher's reality. Having an understanding of these interrelated assumptions is therefore, important. Ontology is defined as the nature of reality, while epistemology is the branch of philosophy that is concerned with nature of knowledge, and methodology refers to the procedures that the researcher must follow in order to acquire knowledge (Botma, Greeff, Mulaudzi & Wright, 2010; Nieuwenhuis, 2007).

The researcher agrees with Botma et al (2010) that individuals attach their own personal meaning to the world and constructs their own reality through their lived experiences (ontology) and develop their knowledge through the interactions with others, thereby constructing their own meaning of the experiences (epistemology). Therefore, for the purpose of this study, a descriptive and interpretive research paradigm or constructivist paradigm is implemented, as the researcher seeks to understand how the participants give subjective meaning to a particular phenomenon (Botma et al, 2010; Creswell, 2009), i.e. to the role of a responsive curriculum on optimising learning in HE. In addition, this study is qualitative in nature (methodology), as according to Nieuwenhuis (2007), qualitative research methods are best suited for a descriptive and interpretive paradigm. Denzin and Lincoln (2005) define qualitative research as an approach that aims to understand the meaning that individuals ascribe to their environment through observations and interactions with these individuals in their natural settings. Nieuwenhuis (2007) further describes qualitative research as the gathering of rich descriptive data on a specific phenomenon. In this study the role of a responsive curriculum on optimisation of learning in HE will be explored to gain a better understanding of this phenomenon. Creswell (2009) also indicates that researchers using qualitative methods immerse themselves in the environment and are a key instrument of data collection and make interpretations that are, in turn, influenced by their own experiences and worldviews.

1.5.2 Research design

A qualitative case study design will be used in this study, as the researcher aims to explore the participants' experiences of the role a responsive curriculum on optimisation of learning in higher education (Botma et al, 2010; Creswell, 2009; Nieuwenhuis, 2009). Nieuwenhuis (2007) describes a case study as a way of gaining a holistic understanding of the way in which

participants interact with one another, as well as the way in which meaning is given to the specific phenomenon being studied. Cases are bounded by time and activity and researchers collect detailed information using a variety of data collection procedures over a sustained period of time. As a study design, case study is defined by interest in individual cases rather than the methods of inquiry used. The selection of methods is informed by researcher and case intuition and makes use of naturally occurring sources of knowledge, such as people or observations of interactions that occur in the physical space (Stake, 1998). This research is descriptive and interpretative in nature (Botma et al, 2010; Creswell, 2009). According to Fouché and de Vos (2011), an interpretative research is used to gain further insight into a situation when there appears to be little information, as in the role of a responsive curriculum in optimisation of learning in HE. Descriptive research allows the researcher to describe a specific situation accurately and in detail (Fouché & de Vos, 2011). The study will be contextual, focusing on lecturers and students at a HEI in the Gauteng province of South Africa.

1.5.3 Research methods

As this research study is framed with the qualitative paradigm, the research methods will be selected in coherence with the research design and research questions. These methods will include a pilot study, purposeful sampling techniques, various data collection methods and qualitative thematic analysis. These will be discussed in further detail.

1.5.3.1 Pilot study

A pilot study represents a fundamental phase of the research process (Leon, Davis & Kraemer, 2012:1). The latter is also called a 'feasibility' study. It can also be a specific pre-testing of research methods, including questionnaires or interview schedules (Pilot & Baker, 2002:33-44; Van Teijlingen & Hundley, 2001:1). The pilot study will thus follow after the researcher has a clear vision of the research topic and questions, the techniques and methods, which will be applied and what the research schedule will look like (Leon et al, 2012:1). The pilot study in the current research can be defined as mainly a try-out of research techniques and methods. The researcher compiled semi-structured interview questions based on discussions during workshops with different departments, Heads of Department and programme team work sessions. The main focus of these encounters was with regards to the responsiveness of the curricula. Also document analysis (study guides and learning material) were completed. The pilot study of the current research on the role of a responsive curriculum in the optimisation of learning in HE can

therefore be defined as both a feasibility study as well as a pre-testing of interviews and pre-evaluation of documents.

1.5.3.2 Sampling

Purposeful sampling was employed, as a research design of data collection. Purposeful sampling is based on a sample of information-rich cases that is studied in depth and also as McMillian and Schumacher (2010:326) state that it is a strategy to choose small groups or individual persons who are likely to be knowledgeable about the phenomenon of interest. Creswell (2009) maintains that purposeful sampling is based on the assumption that the investigation wants to discover, understand and gain insight into the phenomena and therefore must select a sample from which the most can be learned. The aim of the researcher was to determine whether the curriculum is responsive to the needs of students, industry and society and whether students experience optimal learning. The researcher decided to investigate the type of curriculum used in the Department of Informatics at the Tshwane University of Technology. The purposeful sample comprised of students and lecturers of the Department of Informatics. The curricula of the subjects Business Analysis III (diploma level) and Business Analysis IV (BTECH level) were the focus of this study.

1.5.3.3 Data collection

A literature review will be conducted to gather information in this study. Taylor (2008:1) defines literature review as an account of what has been published on a topic by accredited scholars and researchers. McCotter (2001:21) goes further by defining a literature review as a "critical assessment of the literature in a particular field, stating where the weaknesses and gaps are, contrasting the views of particular authors, or raising questions. Such a literature review will not only be a summary but will also evaluate and show relationships between different materials, so that key themes emerge". Furthermore, a literature review is a critical and in depth evaluation of previous research.

In order to narrow down the scope of the reading it is important to differentiate between primary and secondary sources. For the purpose of this study the researcher will define the above-mentioned concepts, to determine what will be the primary sources and what will be the secondary sources. According to Blum (2010:1) a primary source is a document which offers an inside view of a particular event. It includes autobiographies, diaries, e-mails, interviews, official

recordings, raw research materials, etc. At this point the primary sources which also form part of the empirical study will be:

- Learning materials, such as PowerPoint presentations, lecturer notes, lesson handouts, examination papers and memorandums.
- Study guides which provides educational information with regards to the subjects Business Analysis III and IV.

On the other hand, secondary sources can be defined as those sources which comment on, or build upon the primary sources (Blum, 2010:2). A secondary source provides interpretation and analysis of primary sources. The secondary sources that will be used in this study include the following: dictionaries; journal articles; newspaper articles; textbooks and reviews of literature.

Through the research methods, researchers collect data within the natural setting of the information they seek, and the key data collection instruments are the researchers themselves (Merriam, 2009: 43; Van Wyk, 2012). In this study the researcher made use of semi-structured interviews (three lecturers and 12 students from the Department of Informatics). These lecturers are responsible for lecturing the curricula of the Diploma and BTECH qualifications in the Department of Informatics. The semi-structured interviews were employed to establish the role of a responsive curriculum in optimising learning in HE.

1.5.3.4 Data analysis

McMillian and Schumacher (in Henning, Van Rensburg & Smit, 2011) argue that data analysis is primarily an inductive process of organising data into categories and identifying patterns (relationships) among them. Richards (2006:84), Silverman (2010) and Bowen (2013) see data analysis as a process of coding the data, the recording of exploratory categories, the management and exploration of category systems, as well as coding for validation and reliability exploration. He continues by writing that data analysis is a process whereby the researcher should allow himself/herself time for writing, rewriting, revisiting the data and verifying conclusions. Collected data was analysed using the narrative nature analysis as opposed to a statistical analysis method (Merriam, 2009:182). This involved examining and organising notes from interviews and reducing the information into smaller segments from which the researcher could see patterns and trends. In addition, the researcher interpreted the meanings of these patterns and

trends. The findings of the interviews and the analysis of the documents relating to the study under review are presented in chapter 5.

1.5.3.5 Role of the researcher

McMillian and Schumacher (2010:348) and Henning et al (2011) describe the role of the researcher as a partial participant to the study, when the researcher fills a position on the staff of the organisation or when the researcher has membership to the group (insider/outsider relationship). This type of researcher role can be beneficial for the study because the researcher will firstly, have a greater understanding of the culture being studied; secondly, not altering the flow of social interaction unnaturally; and thirdly, having an established intimacy which promotes both the telling and the judging of truth. Further, insider-researchers generally know the politics of the institution, not only the formal hierarchy but also how it "really works". They know how to best approach people. In general, they have a great deal of knowledge, which takes an outsider a long time to acquire (Silverman, 2010). The researcher of this study is the Curriculum Development Practitioner of the Faculty of ICT. She forms an integral part of the management team. This function is beneficial as a partial participant (insider role), as it provides the researcher the means to build trustworthy relationships with the participants.

1.5.3.6 Data verification

The conclusions that the researcher draws must be reliable and valid data (Henning et al, 2011). Reliability and validity constitute trustworthiness. "Reliability refers to the degree of consistency with which instances are assigned to the same category by different observers or the same observer on different occasions" (McMillian & Schumacher, 2010:23). Joppe (2006:1) expands by defining reliability as the "extent to which results are consistent over time and is an accurate representation of the total population under study. This is referred to as reliability and if the results of a study can be reproduced under similar methodology, then the research instrument is considered to be reliable". Merriam (2009:209) agrees with the previous writers by writing that "Reliability in qualitative research involves conducting the investigation in an ethical manner and reliability can be ensured the way in which the data are collected, analysed, interpreted and findings presented".

On the other hand, validity means "the strength of our conclusions, inferences or propositions, the best available approximation to the truth or falsity of a given inference, proposition or

conclusion" (Creswell & Miller 2010:1). Merriam (2009:213) regards validity as in how congruent are the findings with reality. "Validity is a goal rather than a product: it is never something that can be taken for granted" (Maxwell, 2010:105). In qualitative research, trustworthiness is observed as a concept that is formed by credibility, transferability, dependability and conformability. Credibility is an evaluation of whether or not the research findings represent a convincing conceptual interpretation of the data drawn from the participants' original data. Transferability is the degree to which the findings of this inquiry can be applied or transferred beyond the bounds of the project. Dependability is an assessment of the quality of the integrated processes of data collection, data analysis and theory generation. Conformability is a measure of how well the inquiry's findings are supported by collected data (Fenton & Mazulewicz, 2008:1). The researcher ensured that the current study was trustworthy through triangulation which is a strategy that can be used to strengthen the confidence of the research findings, through collecting the data from different sources and by using multiple methods, including semi-structured interviews and document analysis (array of documents were assessed) and field notes taken during semi-structured interviews (Merriam, 2009:210). The aim was to determine whether the curriculum is responsive to the needs of students, industry and society and whether students experience optimal learning in HEIs.

1.5.3.7 Ethical considerations

To ensure that the study adhered to the research ethics requirements, application for ethical clearance was requested from the Ethics Committees of the University of South Africa (UNISA) (see Appendix 5) and as well as from the Ethics Committee of the Tshwane University of Technology (TUT) (see Appendix 5.1). These applications were submitted after the proposal was approved by the Ethics committee of the College of Education at UNISA and before fieldwork was conducted. Issues addressed in the application involve the sensitivity level of the research activities, the research approach, design and methodology, including full detail regarding the participants, voluntary participation, informed consent, confidentially, anonymity and risk.

The participants were invited to take part in the study and were informed about the purpose, the aim and objectives of the study. The information leaflets provided to the participants informed them about their participative roles and that they could withdraw at any stage. After joining the study, the participants signed a letter of informed consent (see Appendix 4). The letter

highlighted the purpose of the study, the procedures to be followed during the investigation, the possible advantages and disadvantages as well as information regarding confidentiality, anonymity and possible risks involved in taking part in the study.

The interviews were audio-taped in order to have a clear and accurate record of all events and verbal communication. It is highly unlikely that any students were physically or psychologically harmed during the research. It is important to notice that a respondent may be considered anonymous when the researcher cannot identify a given response with a respondent (Merriam, 2009). To ensure anonymity and confidentiality the participants were not expected to identify themselves publicly and although their names were known, it was kept confidential at all times. The signed consent forms served as a further guarantee to the participants regarding the anonymity and confidentiality of study. The interviews took place in a private environment. The audio-tapes and field notes of the interviews or document analysis are only available to the researcher.

1.6 Limitations of the study

The researcher confined the study to a University of Technology in the Pretoria area and the information can, therefore, not be generalised to any other higher education institution in South Africa. However, it will possibly make contributions with respect to the effectiveness and impact of a responsive curriculum on the optimising of learning. The study included the Faculty of Information Communication and Technology, the lecturers, heads of department and the students in this particular faculty.

1.7 Clarification of concepts

For the purpose of this research, the concepts below will be clarified.

1.7.1 Curriculum

The Department of Education (1997a) defines the curriculum as everything planned by educators which will help develop the learner and maximise their potential. This can be an extra-mural sporting activity, a debate or even a visit to the library. When the curriculum is being planned, the physical resources, work programmes, assessment criteria and extra-mural programmes should all be taken into account (Maree, 2007:8). Dezure (2010:1) defines curriculum as a "formal academic plan for learning experiences of students". In this research, curriculum means

a document which includes details about the purpose of the module, outcomes, content, teaching and learning strategies and techniques, evaluation, assessment and resources.

1.7.2 Outcomes-based education

Van der Horst and McDonald (2007:7) maintain that "OBE means clearly focusing and organising everything in an educational system around what is essential for all students to be able to do successfully at the end of their learning experience". This involves starting with a clear picture of what is important for students to be able to do, then organising the curriculum, instruction and assessment to make sure this learning ultimately happens (Killen, 2010). The very term outcomes based education suggests purposeful, goal directed education which avoids meaningless rote learning and will meet praiseworthy ideals such as the protection and enhancement of individual freedom and the development of critical thought and scientific literacy (South African Qualifications Authority, 2013).

1.7.3 Educator

The Higher Education Act, no.101 of 1997, states that educator means any person who teaches, educates or trains other persons, who provides professional educational services, including professional therapy and education psychological services at any public school, further education and institution, departmental office or adult basic education centre and who is appointed in a post on any educator establishment under the act. In OBE, an educator is a teacher, who fulfils a role of facilitator or even a mediator (Mothatha, 2005:64). It is someone who assists and guides in taking knowledge and learning forward, without being directly involved in the learning process (Bullock & Trombley, 2003). In this study, an educator is a lecturer who fulfils a role of content specialist, implementer of the curriculum and academic professional.

1.7.4 Optimising learning

Sawyer (2008) defines optimising learning as a profound consequence which shapes individual knowledge, skills, values and discovering life in all its facets, making constructing sense of it all and then uses what it has found to do something creatively new. Human (2004:24) stresses what has been said in the former by defining optimising learning as the process whereby the human being continually exceeds him/herself in every possible way by cultivating the mind, expanding senses, exploring consciousness, deepening relationships and serving others. The following

conclusions can be drawn from the above, that optimising learning can be perceived as a process:

- Whereby individuals can be challenged to exceed themselves;
- Where individuals achieve beyond expectations;
- Whereby individuals focus on fellow human beings in order to strengthen interpersonal relationships.

For the purpose of this study optimising learning will be defined as follows:

- The forming of knowledge, values and competencies;
- The self-discovery of one's own abilities;
- Creative management of one's own personal potential.

1.7.5 Council on Higher Education

The Council on Higher Education (CHE) is an independent statutory body responsible for advising the Minister of Higher Education and Training on all higher education policy issues and for quality assurance in higher education and training (Higher Education Act, no.101 of 1997).

1.7.6 Higher Education

Higher Education (HE) refers to a level of education that is provided at academies, universities, colleges, vocational universities, institutions of technology and certain other collegiate-level institutions, such as vocational schools, trade schools and career colleges, that awards academic degrees or professional certificates (CHE, 2002b; Forest & Kinser, 2002:3) and DHET (2013) define HE as an educational level that follows the completion of a school providing secondary education, such as a high school. Tertiary education is normally taken to include undergraduate and postgraduate education, as well as vocational education and training. HE includes teaching, research, exacting applied work and social services activities of universities (Higher Education Act no.101 of 1997).

1.7.7 Information and Communication Technology

UNESCO (2006), explains that Information and Communication Technology (ICT) allows users to participate in a rapidly changing world in which work and other activities are increasingly

transformed by access to varied and developing technologies, such as e-mails, the internet, data processing and e-learning. For the purpose of this study the concept ICT does not only refer to the world of computing, but also to an academic entity/faculty within a broader institution dealing with computing related issues communicated in the curricula.

1.7.8 Lecturer

The word lecturer is etymologically derived from Medieval Latin "*lectura*" a reader, the one who reads or pronounces lectures; a professor or other instructor who delivers formal discourses for the instruction of others (DHET,2013). Boughey (2009) defines lecturer as a term that denotes an academic rank. It is a position at a university or similar institution, often held by academics in their early career stages, which lead research groups and supervise research students, as well as teach. It could be related to educator. In this research, the preferred concept will be lecturers at a junior level, who teach students in particular disciplines and curricula.

1.7.9 Responsive curriculum

The Saskatchevan's Education Group (2006:1) defines a responsive curriculum as a flexible and adaptive curriculum which responds to the needs of the student and industry. It provides all students with a variety of developmental and learning experiences needed to maximise their human potential. Behrmann (2001:5) advocates that a responsive curriculum is a curriculum which is customised to meet the individual student's preferred approach to learning and unique ability level.

Meyer and Rose (2005:1) define a responsive curriculum as "A curriculum that meets the needs of all students, it focuses on the development of accessible interactive curriculum materials. These materials would engage the student in new and empowering ways that align their unique approaches to learning and ultimately to maximise their human potential."

A responsive curriculum thus promotes the development of the student, intellectually, socially, physically and intellectually. This type of curriculum, instruction and assessment represents a model of learning to support all students in achieving the knowledge, skills and attitudes necessary to succeed in life and to maximise their human potential (Moll, 2011). The knowledge, skills and attitudes referred to includes digital knowledge, applied knowledge, skills

such as learning and innovation skills, digital literacy skills, communication skills and life and career skills. The attitudes are adaptability, initiative and self-direction.

1.7.10 Student

The word student means someone who is studying in order to enter a particular profession. (Department of Education, 1997c). Thus in its widest use, student is used for someone who is learning, studying or receives education. A student is any person who is involved in any formal or non-formal education and training activity (Mothatha, 2005:94).

1.8 Demarcation of the research

Gossman (2008:21) defines the demarcation as the boundary of a specific area, the act of marking or setting of a limit. With the latter in mind, the Tshwane University of Technology, more specific the Faculty of Information and Communication Technology was the focus of this study. Specific attention was given to the third year curricula of the diploma and BTECH curricula, in the Department of Informatics. Local and international perspectives gained through a literature review on the relationship between responsive curricula and optimising learning, contributed to the contextualisation of the study.

1.9 An overview of the study

Chapter one: Orientation to the study

This chapter covers an orientation to the study, the rationale and the background of the study. The problem statement, aims, research design and methodology, concept clarification and demarcation of the study are also set out.

Chapter two: The South African higher educational landscape: Factors shaping and influencing curricula in higher education

In this chapter a review of the South African higher educational legislative landscape is conducted with a specific focus on the HE frameworks and its impact on the curriculum design processes.

Chapter three: A responsive curriculum and its impact on higher education learning opportunities

This chapter will define the anatomy of the concept responsiveness and its impact of optimising learning. Different educational theories will be discussed which underpin a responsive curriculum.

Chapter four: Research design and methodology

In this chapter the research methods and approach will be discussed in more depth.

Chapter five: Findings and discussions of findings

In this chapter the findings and a discussion of the findings will be provided.

Chapter six: Conclusions and recommendations

In this chapter the conclusions are drawn and recommendations made on the basis of analysed and interpreted data.

1.10 Summary

This chapter provides a brief introduction to the study under review. The problem statement, aims, research methods, concept clarification and chapter division were covered. The next chapter will deal with the literature review on what the expectations are for HE curricula and the influence of the OBE philosophy on the HE framework. The South African higher educational landscape and factors which shapes and influences the curricula will also be presented in the next chapter.

CHAPTER TWO
The South African higher educational landscape: Factors shaping and influencing curricula in Higher Education

2.1 Introduction

In South Africa, social inequalities were embedded and reflected in all spheres of social life, as a product of the systemic exclusion of blacks and women under colonialism and apartheid (Badat, 2010). The HE system was no exception (Badat, 2010:2). Social, political and economic discrimination and inequalities of a class, race, gender, institutional and spatial nature profoundly shaped, and continue to shape, South African HE (Council on Higher Education, 2013). The abovementioned actions were the result of apartheid and the consequences were that the South African HE system was divided into two mutually exclusive types of institutions: universities and technikons. Secondly, eight different government departments controlled the institutions in these categories and lastly, under apartheid, HE in South Africa was skewed in ways designed to entrench the power and privilege of the ruling white minority (Odhav, 2009: 33). By 1994 there had been considerable resistance to the apartheid regime in the historically black and in some of the historically white institutions (Badat, 2010:4). The period since 1994 was a time of optimism (Badat, 2010).

The new government came in with an agenda of change and transformation (Pityana, 2009:2). It was reshaping South African society and constructing a new vision, without any doubt the universities were instruments in this agenda for change. Some of the changes in HE have resulted in legislation, enacted by the democratic government elected in 1994 as well as from social and economic shifts within the country itself (Boughey, 2009:1).

The social and economic changes that were introduced after democratisation were, development at the global economic level, which required HE to produce more graduates than ever before (Dede, 2007:4). The historic factory production lines of the 20th century required large numbers of relatively unskilled workers and only a small number of highly trained managers and people were involved in research and development. The 21st century however, requires large numbers of skilled technologists who are able to adapt to an ever-changing set of needs and market pressures (Boughey, 2009). This also resulted in the need of more students to be qualified in the field of science, technology and engineering. Due to the shift from universities playing a role in the economic development of the country, programmes also had to be redesigned to meet specific

economic and industrial needs (Dede, 2007). The South African governments' White paper 3 on HE published in 1997, describes a transformed HE system as one which will provide equal access and equally fair chances of success to all students; develop programmes leading to qualifications that will meet the country's employment needs in respect of highly skilled graduates; promote critical and creative thinking, tolerant and committed to the common good through its teaching and produce research of international standards that, at the same time will be cognisant of an African context (Boughey, 2009).

The latter resulted in an extensive process of investigation and consultation to correct the inequalities of the past with regards to HEIs (Department of Education, 1997c). In view of the above, transformation of the HEIs have to reflect the changes that are taking place in the South African society and have to strengthen the values and practices of the new democracy (Department of Education, 1997c). This version is best captured in the preamble of the constitution which aspires to establish a society based on democratic values and an open society in order to improve the quality of life of all citizens and free the potential of each person (The Constitution of South Africa, 1996).

Mkhonto (2007) concurs with the above mentioned by arguing that the HEIs must be transformed to redress past inequalities to serve a new social order, to meet pressing national needs and respond to new realities and opportunities. To understand the policy thrusts of the South African HE system it must be viewed against the backdrop of its historical context. In the following section a brief overview will be provided to understand the historical context of the higher educational landscape.

2.2 Historical overview of the higher educational landscape in South Africa

All HEI's in South Africa are products of the apartheid segregationist policies and some to such an extent that certain HE institutions experienced a history of disadvantage (Badat, 2010). It is in this specific context that the notion of "separateness" becomes more illuminated by the binary division of HE in the early 1980s, when, in addition to the already existing racially differentiated universities, the National Party (the then the ruling party) instituted "… a new set of institutions to which it gave the new and unique term technikons" (Bunting, 2002:61; Odhav, 2009:35). The term technikon is new and unique as it had no existence in South Africa (SA); in the United Kingdom (UK) these were called polytechnics (Mkhonto, 2007). The National Party's own perception of the essences or properties of the country's HEIs resulted in universities being

designated as centres for science, and technikons as centres for technology: It [the National Party government] used the term science to designate all scholarly activities in which knowledge for the sake of knowledge is studied, and the term technology to designate activities concerned with the applications of knowledge (Jansen, 2001b). It followed from this philosophy of essences that the government at that time believed that universities could not become involved in technology [in the sense of the application of knowledge] and that technikons could not become involved in scholarly activities involving the generation of new knowledge (Bunting, 2002:62). That in itself is a demystification of the blurred boundaries between university education (as the highest level education) and technikon education (as a component of training) (Mkhonto, 2007). The following table underlines and highlights the previous arguments.

Table 2.1 Binary division of higher and further education qualification routes in the early 1980s

University qualification	Equivalent Technikon qualification
Doctorate	Laureates in technology
Master's degree	National Diploma in Technology
Honours degree	National Higher Diploma
Post-graduate diploma	Post-graduate Diploma
Professional first Bachelor's degree	First National Diploma (4 years)
General first Bachelor's degree	First National Diploma (3 years)

Source: Bunting (2002:63)

University qualifications format and duration of degrees were used to determine the format and duration of the qualifications of the technikons, and not vice-versa (Jansen, 2001a). Technikon qualifications had to 'remove' "… abstract thinking and scientific or scholarly approaches to knowledge as their primary functions had to be only that of training students who would be able to apply scientific principles within the context of a specific career or vocation" (Bunting, 2002:63). Implicit in the above principle therefore, is the notion that the primary function of a university was "… to train basic scientists; and basic researchers, and therefore had to be concerned with the development rather than with the application of knowledge … educating students in a range of scientific or scholarly disciplines to enable them to enter high level professions". Whereas the "scientific" view above espouses the academic, knowledge-as-a-process orientation, the technikon framework adopts the practical, knowledge-as-a-product approach (Badat, 2010:2). Emphasised here is that the (former) technikon sector has become the

main post-secondary school 'catchment' pool for career and vocational education (Bunting, 2002). In the instance of technikons merging to form a "university of technology", the curriculum at such an institution could wholly be geared towards the technological application of knowledge in the service of industry (Jansen, 2001b). In the view of this study, the technikon sector acted as a buffer or interface between secondary (general) and HE: between highly specialised academic-professional knowledge and vocational-technological skills, with the latter (due to poor secondary school backgrounds) providing a layer of technical labour, rather than a managerial and technological layer of decision making within the workforce (Mkhonto, 2007; CHE, 2013).

Post-1994, there has been a wide array of transformation-oriented initiatives seeking to effect institutional change. These have included the definition of the purposes and goals of HE; extensive policy research, policy formulation, adoption, and implementation in the areas of governance, funding, academic structure and programmes and quality assurance; the enactment of new laws and regulations; and major restructuring and reconfiguration of the HE institutional landscape and of institutions (Odhav, 2009; Badat, 2010). These initiatives have often tested the capacities and capabilities of the state and HEIs and have affected the pace, nature and outcomes of change. Some of the initiatives to enable change and relevant to this study were the South African Qualifications Authority (SAQA) and the National Qualifications Framework (NQF) (Council on Higher Education, 2013). The establishment of SAQA and the NQF fostered the characteristics of a transformed education system (Council on Higher Education, 2013). SAQA was established through the SAQA Act of 1995 to oversee the development and implementation of the NQF. As part of the process of new qualifications registration, SAQA would register new qualifications on the NQF (Council on Higher Education, 2013). The role of SAQA in transforming education in South Africa is reflected in their mission statement: To ensure the development and implementation of a NQF which contributes to the full development of each learner and to the social and economic development of the nation at large (South African Qualifications Authority, 2000:15).

SAQA has adopted an eight-level framework. The three levels are grouped into three (3) bands, namely the:

- General Education and Training (GET), covering level 1,
- Further Education and Training (FET), covering levels 2 to 4, and
- Higher Education and Training (HET), covering levels 5 to 8.

The following table depicts the abovementioned and is the eight-level framework that was adopted by the South African Qualifications Authority (2000).

Table 2.2 Depiction of the eight levels framework adopted by South African Qualifications Authority

NQF LEVEL	BAND	QUALIFICATION TYPE
8 7 6 5	HIGHER EDUCATION AND TRAINING	POST-DOCTORAL DEGREES DOCTORATE MASTERS DEGREES PROFESSIONAL QUALIFICATIONS NATIONAL FIRST DEGREES NATIONAL DIPLOMAS NATIONAL CERTIFICATES
4 3 2	FURTHER EDUCATION AND TRAINING	GRADE 10-12 NATIONAL SENIOR CERTIFICATE
1	GENERAL EDUCATION AND TRAINING	GRADE 0-9 ABET LEVEL 4

Source: South African Qualifications Authority (2000)

After the SAQA (2000) introduced the NQF level 5 to 8 as the band for Higher Education and Training (HET), changes to the HET band have been published in the Government Gazette of October 2007 (Government Gazette no.30353, 2007). These changes included two new levels, which are levels 9 and 10, in the HET band. In the following table below these changes are displayed in the Higher Education and Training band.

Table 2.3 Representation of the National Qualifications Framework which includes levels 9 and 10 in the HET band

NATIONAL QUALIFICATION FRAMEWORK		
LEVEL	**SUB-FRAMEWORK AND QUALIFICATION TYPES**	
10	DOCTORAL DEGREE DOCTORAL DEGREE (PROFESSIONAL)	•
9	MASTER'S DEGREE MASTER'S DEGREE (PROFESSIONAL)	•
8	BACHELOR'S DEGREE POSTGRADUATE DIPLOMA BACHELOR'S DEGREE	•
7	BACHELOR'S DEGREE ADVANCED DIPLOMA	•
6	DIPLOMA ADVANCED CERTIFICATE	OCCUPATIONAL CERTIFICATE (LEVEL 6)
5	HIGHER CERTIFICATE	OCCUPATIONAL CERTIFICATE (LEVEL 5)
4	NATIONAL CERTIFICATE	OCCUPATIONAL CERTIFICATE (LEVEL 4)
3	INTERMEDIATE CERTIFICATE	OCCUPATIONAL CERTIFICATE (LEVEL 3)
2	ELEMENTARY CERTIFICATE	OCCUPATIONAL CERTIFICATE (LEVEL 2)
1	GENERAL CERTIFICATE	OCCUPATIONAL CERTIFICATE (LEVEL 1)

Source: Council on Higher Education (2013)

With the improvement of the NQF, especially the expansion of the HET band, the key objective of the NQF and its sub-frameworks (General Education and Training, Further Education and Training and Higher Education and Training) was met by enabling the articulation of programmes and the transfer of students between programmes in HEI's and other sub-frameworks. The abovementioned changes are not the only challenges that impacted on the HE landscape. In the following section of this study other challenges are revealed, to institute the pressures that the HE landscape is experiencing.

2.3 Internal and external challenges which influences higher education since 1994

HE has throughout its history had to contend with changes occurring in its internal and external environments (Fehnel, 2002; Council on Higher Education, 2013). In addition to having to reform itself organisationally from within, the extent to which HE sustains its claim to intellectual/academic hegemony and to being society's most excellent centre of learning, will to the greatest extent be determined by its (HE's) adaptation and responsiveness to these powerful forces (Moll, 2011; Deem, 2001; Hill, 1997:5). Consequently, these external challenges are

fundamentally necessitating, shaping and influencing the ways in which HE conducts its "business" (Mkhonto, 2007). HEIs are compelled to take serious cognisance of these external challenges and trends, if they are to fulfil their fundamental knowledge-producing dissemination and validation mandates and socio-economic relevance and responsiveness to their increasingly diverse constituencies (Moll, 2011). This section seeks to explore those internal-external challenges considered to influence the inevitable transformation in HE development in general and its curriculum structuring in particular.

According to Clark (2005:129) the magnitude of internal and external challenges has placed HE in a difficult situation. Radical changes would not only change the conservative face of HE, but would also determine its commitment to maximize the equality of higher learning opportunities and attendant socio-economic benefits, especially for those previously marginalised. Boughey (2009:3), is in agreement with Clark (2005) and mentions the following internal and external challenges which resulted in HE in South-Africa changing drastically. She (Boughey) mentions "Mode 1" knowledge has been replaced by "Mode 2" knowledge in the late 1990's. Mode 1 knowledge is produced within traditional disciplinary boundaries and is 'disinterested' in the sense that it is single-minded, slow to change and structured. Creativity is restricted. Mode 2 knowledge means being intrinsically trans-disciplinary, trans-institutional motivated and heterogeneous and stands in direct contrast to Mode 1 knowledge which means to produce knowledge within traditional disciplinary boundaries and is 'disinterested' in the sense that it is produced out of interest as explained by Kraak (2000) and Kim (2011). This move from Mode 1 to Mode 2 type of knowledge also had an influence on the sort of research required of a HE system. This resulted in universities playing a role in the economic development of the country rather than just a producer of scientific knowledge (external challenge) (Kim, 2011).

Challenges at the global economic level required HE to produce more graduates than ever before (Blasi, 1999). Due to the shift from universities playing a role in the economic development of the country, programmes also had to be redesigned to meet specific economic and industry needs. This normally reflects in institutional mission statements (internal challenges) (Deem, 2001). Pressure is also put on academics to comply with quality assurance procedures, e.g. student opinion surveys on the quality of teaching and course design (internal and external challenges). Quality of HE must be assured in the same way as the quality of other products must be guaranteed. Traditionally, scholars have always assured the quality of their teaching and research through a system of external examining and peer review (Mkhonto, 2007).

Manifestation of this phenomenon is reflecting in debates around "valued addedness" or "fitness for purpose" (internal and external challenge) (Clark, 2005). Since 1994 most academics had to cope with a student population which was not only increasingly diverse in terms of their linguistic and cultural backgrounds, but also in terms of the level of "preparedness" students bring to HE study (internal challenge) (Mkhonto, 2007).

The Department of Higher Education and Training (2012); Karajagi (2011); Bache (2010) and OECD (2008:25) agree with the abovementioned challenges and add the following internal and external challenges. These challenges according to the mentioned sources can be categorised into: internationalisation, diversification of provision, the heterogeneous student body, ever-changing technology, international collaboration and networking between institutions and inclusivity. Each of these challenges will be explained in the following sections. Internationalisation can be defined as the variety of policies and programs that universities and governments implement to respond to globalisation. Diversification of provision means multiplication of educational offerings within institutions, introductions of new mode of deliveries, and that HE responds innovatively to the increasingly diverse needs of the labour market, as a way to educate a larger proportion of students at a lower cost, through the introduction of short programs (DHET, 2012). The heterogeneous student body means diverse students with regards to age, gender, qualifications, cultures and expectations. These students have different learning needs, which mean new curricular and pedagogical requirements, but also the need to provide a different learning environment, which must take into account the different perspective these students bring to their educational experience (OECD, 2008). The ever-changing technology such as social media, cell phones, ICT and electronic media would change the face of higher education. The students can have access to the best curricula and instruction methods available at universities outside the country through the internet (Karajagi, 2011). Students can interact with peers and experts in a particular field, in the rest of the world, by sitting in their drawing rooms. The teaching methodology in the institutions will have to take cognisance of the abovementioned challenges and will have to adopt them to remain relevant. International collaboration and networking between institutions in different areas of teaching and research is also a significant factor in the organisation of tertiary education in many countries (Karajagi, 2011). Inclusivity in its broadest and all-encompassing meaning, inclusive education, as an approach, seeks to address the learning needs of all youth and adults with a specific focus on those who are vulnerable to marginalisation and exclusion (Bache, 2010).

An analysis of the internal and external challenges in HE reveals that not only will the HE landscape have to change, but most likely that curriculum development activities of HEIs should be revisited (DHET, 2012). These internal and external challenges place a tremendous demand on the curricula of HEI's and also the approaches to the development of its curricula. It cannot be business as usual at HEI's. It is advisable that these demands should be met in order for the curricula to be responsive to needs of students, society and industry (OECD, 2008). There are a few things likely to happen and according to the researcher the impact by these challenges might be that:

- HE needs to become student-centred. The approaches to teaching and learning need to more likely change to accommodate the needs of the students.
- HE needs to become needs based. Instead of fitting the students into the frame of a prepared curriculum, the frame of the curriculum need to be designed that suits students' needs.
- HE needs to become inclusive. HEIs need to likely have to cater for students with disabilities and also students who will enter from a vocational educational background.
- HE needs not remain a prerogative of a selected few. HE is seen by many as a vehicle where to improve the quality of their lives and be successful individuals.

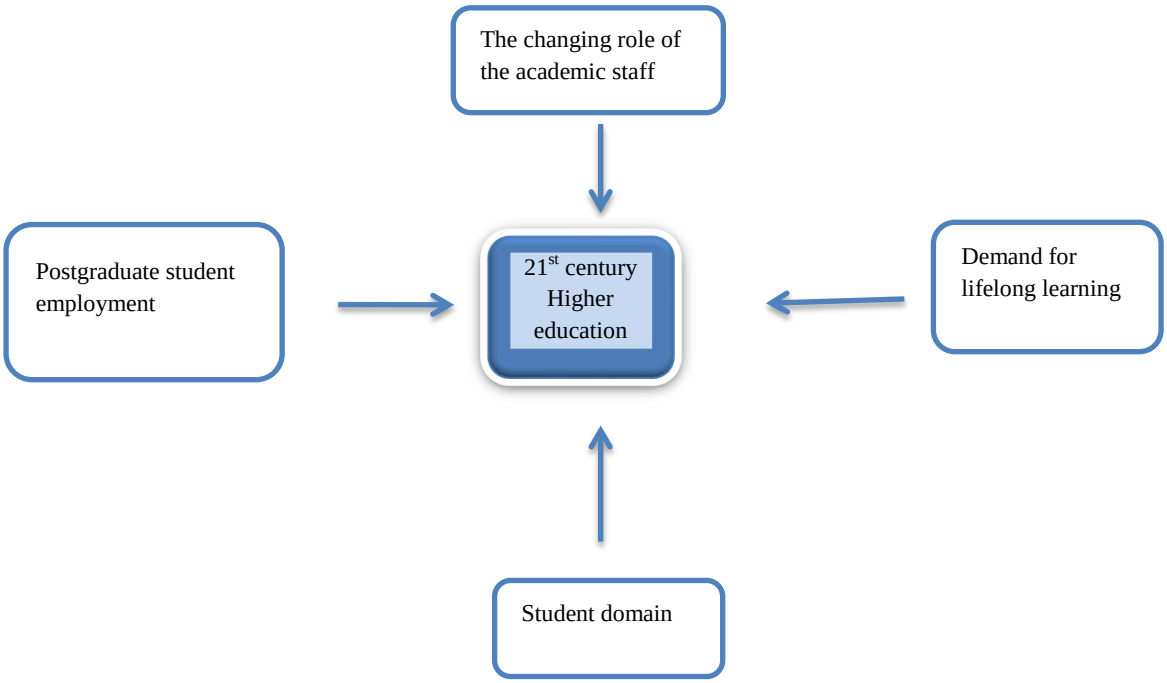
To highlight the abovementioned, Pasternack (2011) mentions the following relevant information which is important for universities to consider if they want to respond to these external and internal challenges. Universities need to consider expansion, by changing employment structures, increasing expectations of educational participation by the citizenry at large and the academisation of a growing number of professions. Universities should consider the re-curriculation of qualifications by introducing study programmes to allow for higher participation rate and also to multiply the different study options (in particular through modularisation), as well as to make studies more flexible (e.g. part time studies), and to provide a certain extent of "virtualised" teaching, as well as other new forms of teaching and learning such as e-learning, interactive learning and blended learning and teaching strategies (Pasternack, 2011:13). OECD (2008) is in agreement with Pasternack (2011) and responds that greater flexibility, the disappearance of traditional professional patterns and growing individualisation call for a multiplication of study options. Individual combinations of studies should be allowed and students should acquire self-organisation and self-upgrading skills (OECD, 2008).

In the following section of the research, the focus is placed on factors shaping and influencing HE curricula.

2.4 Factors shaping and influencing higher educational curricula

Four sets of factors as stated below, simultaneously confronted the South African HE transformation agenda (Mkhonto, 2007). The agenda for change is to redress inequalities of the past and to adapt to international changes, such as responsiveness to the postgraduate employment, demands of lifelong learning, student domain, relevance and innovation of the curriculum content and the changing role of academic staff (DHET, 2012:11). The following presentation derived from Mkhonto's (2007) work**,** depicts the critical factors as mentioned above which impact on the internal and external pressures in which HE is functioning and developing in the modern era. Some of these forces for change, together with their ramifications on HE curriculum organisation and management, are discussed in varying degrees throughout this chapter. Here follows a diagrammatic depiction of the factors that influences and shapes HEIs curricula.

Figure 2.1 A depiction of factors shaping and influencing higher education curricula



Source: Derived from the work of Mkhonto (2007)

Here follows the explanation of the diagram, in order to establish the importance of these factors influencing HEI curricula in South Africa.

2.4.1 The changing role of university academic staff

The academic profession, if it is to play a meaningful role in the rapidly changing global context, requires bold and visionary institutional and systemic leadership; the kind of leadership that will elevate the quality of education in respect of research, teaching and social responsibility. The changing role of academic staff and the development of a new generation of staff, to adapt to external challenges, are some of the most fundamental areas in which HEIs need to express their capacity (or lack thereof) to become a huge component of the broader socio-economic, cultural, political, and other forms of transformation taking place in the 21st century (Fehnel, 2002; CHE, 2013).

The changing role of academic staff in the millennium is largely technology-induced and has profound effects on the traditional teacher-centred pedagogical frameworks which have been canonised for ages (Pacheo, 2015). Multimedia course delivery instruments (for both on-site and distance-teaching purposes), including e-learning and an array of computer-based technologies, have ushered in an era where the traditional role of the academic staff is becoming less a *sine qua non* (crucial) for education to occur (Mkhonto, 2007; Pacheco, 2015:5). According to Pacheo (2015:6) performance audits have become one of the ways in which academic staff is 'tested' to determine the extent to which they are complying with institutional and other factors. These factors, extant in this environment are identified by Pacheo (2015) as:

- The impact of globalisation on universities - more open ways of knowledge production, dissemination, and application have been ushered in.
- Declining state funding of HE.
- Conflictual values and academically cherished values (such as collegiality) are being outmoded by those of the corporate world.
- The responsiveness of HE curriculum.
- Students' involvement in the context of teaching and learning.

The preceding paragraphs highlighted the importance of, and influences to teaching as one of the dynamics of HEI's. By continuously revamping their pedagogical methodologies to reflect both changing knowledge dynamics, as well as adapting these methodologies to become student-centred and competent lecturers, they are carving a role for themselves as change agents (DHET, 2012).

2.4.2 The student domain

Student demands for HE has a bearing on the extent to which they, as paying customers, expect value from the educational programmes offered by HEI's. Their demand for HE, challenges HEIs capacity to reciprocate their expectations (CHE, 2013). In meeting these new student demands, therefore, HEIs are confronted with the challenge of having to move away from closed and disciplinary academic cultures, beliefs, values and knowledge, which constitute the shared bases of social action to open trans-disciplinary ones (Kim, 2011). The latter also implies that programme offerings be tailored to the students' needs. In other words, students' different backgrounds, needs and expectations are of paramount importance in terms of the variables of, among others, their age and whether they are full-/part-time. (Mkhonto, 2007). Linked to the significance and role of students in the context of transformation occurring within HE institutions, are an array of very profound issues. These issues include the cost of HE provision and demands for quality and maintenance of standards, the readiness of the education system to service the labour market needs in conjunction with the different backgrounds and expectations of students (Wolf, 2007).

2.4.3 The increasing demand for lifelong learning

The traditional university students, young and just graduated from high school, have been the important cohorts for many years; they are resident on campus until their chosen point of exit (Mkhonto, 2007; Council on Higher Education, 2013). The changing HE environment ushered in democratisation, globalisation, ICT and adult working students. Their first 'route' to formal education may have been disrupted by personal or other reasons - hence the need for recognition and incorporation of their previous semi-formal, informal or non-formal learning experiences into the mainstream curriculum. They require formal training, knowledge and skills that are pertinent for their occupational and/or personal needs (Mkhonto, 2007; Department of Higher Education and Training, 2012). These are former graduates whose (part-time or full-time) studies are paid for by their employers, because they require specialised knowledge and high skills. The recurrence of their learning is another avenue for socio-economic development. It is in the light of the above that HE confronts the challenge of catering for the different needs of the different categories of students. Lifelong (continuous) education becomes an essential part of HE programme offerings, which requires institutional initiatives in determining asynchronous ways of offering programmes in the context of the above-mentioned student variables and dynamics (Clark, 2005). Duderstadt (1999:41) states that in conforming to the changing societal

and economic needs, HE can respond to the needs of different types of learners by offering programmes in one or more of the following three formats:

- 'just-in-case' education: "in which we expect students to complete degree programs at the undergraduate or professional level long before they actually need the knowledge." This would be the case for students who entered HE straight from high school and completed it (HE) uninterrupted by work, domestic, or some other commitment;
- 'just-in-time' education: "through non-degree programs when a person needs it." This would apply to learners for instance, who already have the knowledge, skills and experience, but seek accredited certification for self-employment (entrepreneurship), sub-contracting, and;
- 'just-for-you' education: "in which educational programs are carefully tailored to meet the specific lifelong learning requirements of particular students." This latter kind of programme offering would suit working adults who require formal HE to acquire knowledge and obtain skills that are work-related (Duderstadt, 1999:41).

Lifelong education encompasses the seamlessness of learning throughout life (DHET, 2012). This implies that the organisation of a country's entire education system, from elementary to HE, be integrated such that continuity/seamlessness of purpose is established (Mkhonto, 2007). For a lifelong learning continuum to prevail within HE, "[A] system of education [also has to blend] undergraduate, graduate, and professional education; apprenticeships and internship; on-the-job training and continuing education" (Duderstadt 1999:49). For an institution, lifelong learning implies that learning programmes are transformed, epistemologically and otherwise; the context for teaching approaches and learning changes; diverse patterns of entry and exit are accommodated; and success, rather than failure, is encouraged (Pitjane, 2009).

That there is a relationship between work and HE is no longer in dispute; what is in dispute is whether such a relationship has to exist (Department of Higher Education and Training, 2012:12). In other words, there is the contentious issue of whether HE should be subservient to the economy, or put its service to the community above all else. In his analysis of the relationship between work and knowledge/curriculum, Muller (2000:13) comments "that the rise of the professional and intellectual classes, themselves allied to the ruling and capitalist classes as exhibited by the (direct or indirect) shareholding instruments at their disposal, and exercising power or control over knowledge (or what counts as "knowledge") has become one of the bases of the credentialing (through certificates) and legitimation of the nature of the range of skill

domains necessary for economic currency". In other words, the production and credentialing of certain types of skills determine the orientation of the curriculum in respect of the national economy and its core human resources requirements or the professional intellectual classes whose interests will also be best served by an educated and highly skilled workforce (DHET, 2012). The problem arises when supply-demand imbalances occur. The world of work demands a supply of educated and competent workers from HE students. In the world of work, employers basically look for a skills repertoire that includes a combination of 'know what' and 'know how'; as well as social skills that include "... relationship building ... self-management ... business orientation ... and foreign language competence ..." (Kearney, 2008: 132).

2.4.4 Postgraduate students and employment

An inventory of skills (communication skills, reporting skills, life skills, research skills and presentation skills) needed by employers indicates that HEIs still have a lot to do in ensuring that there is a balance and complementarity of expectations between themselves and the world of work (Kim, 2011). It is clear that employers expect knowledge, skills, business sense, being global, a clean digital footprint (trail of data created while using the internet) and social development to be the fundamental currency of employment in the labour market (Mail & Guardian, 2012:1; Kearney, 2008:131-133). Experience is the one contentious and interstitial area in which both HE and the private sector have to collaborate (Pityana, 2009).

In the current post-industrial economic era, educated and knowledgeable people will be pivotal in determining how the economy should work. This is clearly a departure from the 'cog in the wheel' mould into which the industrial economy had been cast. In an era where innovation is the common denominator for change and growth, the role of postgraduate education is pivotal (Kearney, 2008: 131). Postgraduates have cited HEI's inability to prepare them adequately for the application of their research-acquired skills to the world of work (Kearney, 2008). One of the 'solutions' to assist postgraduate students in acquiring research skills might be to draw research topics from real-life situations, rather than from those that simply satisfy the researcher's curiosity.

Duderstadt (2000b: 90), Pityana (2009) and the DHET (2012) further suggest that the highly specialised nature of graduate studies might in itself be an indirect cause of unemployment, as it militates against the construction of knowledge in-the-context-of-application. As the most important supplier of knowledge and skills necessary for the economy and society, HE's

collaborative enterprise with government, industry and commerce is strongly urged. Job market trends and the worldwide volatile economic scene are the explicit terrains and indicators of how postgraduate education could be effectively improved (and changed if necessary) to address the dynamics of employer expectations and the supply-demand imbalances.

It has become apparent, from the body of evidence on this subject, that in addressing the problem of unemployment as a whole, and that of postgraduate unemployment in particular, no single stakeholder could (and should not) attempt to resolve the issue by themselves (Mkhonto, 2007:64; CHE, 2013). Government, HE, labour and industry need to function collaboratively in developing curricula, placement of students and in averting what could possibly lead to a permanently irreversible trend of a 'brain drain' (emigration of qualified individuals from a particular country) (Jansen, 2001b; DHET, 2012). Kearney (2008:128) states that if work is to be understood as a means of poverty eradication and uplifting the human resources capacity of society at large, then other important spheres need to be explored as well. These would include sound economic policies (to encourage investments) that are open to the world economy for broad-based sustainable growth. The implication here is that the reconfiguration of HE curriculum towards interdisciplinary skills development should be done in tandem with government, the private sector and the Department of Higher Education and Training (DHET, 2012).

This applies not only to South Africa, but any other country that strives to alleviate poverty, improve its human resources development, and open its economy to more foreign investment (Kim, 2011). Taking into account the abovementioned challenges in HE and how it impacts on the HE landscape, the concern is how can these challenges be addressed and how can its effect be minimalised. The discussion of the single framework for change might provide some clarity to the previous concern.

2.5 A single framework for change: higher educational qualifications sub-framework (HEQSF)

To address the mentioned challenges and factors and its effect on the HE landscape and curriculum development, the Department of Education (1997c:15) advocated for a HE quality assurance mechanism that would be a clear departure from the pre-merger scenario of institutions, which was characterised by "separate and parallel qualification structures for universities, technikons and colleges which have hindered articulation and transfer between

institutions and programmes". In 2007 the Department of Education introduced in the Higher Education Qualifications Sub-Framework (HEQSF) document. The mentioned framework has been designed to meet demanding challenges facing the HE system in the 21st century and to guide HEIs in the development of programmes and qualifications that provide graduates with intellectual capabilities and skills (DHET, 2013). It is construed here that the framework draw its thrust from previous policy documents (such as National Development Plan, 2013, DHET, 2013; CHE, 2004a; DOE, 1997c) and that the new HE landscape and its thrust on quality and flexibility is still in a state of evolvement.

The latter was recognised by the implementation of the HEQSF in 2013 which had a huge impact on the re-curriculation of the programmes that are currently offered in HEIs and also at TUT, as a University of Technology (CHE, 2013). Although the HEQSF was implemented, HE curricula were still confronted with uncertainties. These uncertainties included the replacement of policy documents such as the former Policy for Technikon Instructional Programmes (NATED Report 150, 97/01), formal Technikon Instructional Programmes in RSA (NATED Report 151, 99/01) and a qualification structure for Universities in South Africa (NATED Report 116, 99/02) by the HEQSF (Government Gazette no. 30353, 2007: 5). Furthermore a new qualification design approach, called the nested approach, where criteria are related to another, was introduced (DHET, 2013). This qualification design is a process whereby the NQF level descriptor serves as the starting point for the design of a qualification and the qualification descriptor (for example a bachelor's degree) follows after the qualification designation (CHE, 2013). The mentioned uncertainties of the HEQSF compelled all HEIs and in particular universities of technologies (UOTs) to revisit and redesign all qualifications and programmes (Van Koller, 2011). The impact of the HEQSF have on HEIs, especially UoTs like TUT, is best described by Communiqué 1 and Communiqué 4 of the CHE, which states as follows "[The] result is that many UoTs are still battling to fully grasp the implications of the HEQF and curricula" (CHE, 2013).

A witness to the abovementioned is that at TUT, many faculties are still in the process of coming to terms with the exact implication of the HEQSF on their curricula and qualifications. The mentioned Faculty (ICT) in this study are in the process in re-aligning their qualifications and programmes in order to comply with the requirements of the HEQSF. According to the HEQSF Implementation Handbook (2011), if there is a 50% change in content it impacts on the qualification. In the Faculty of ICT, name changes took place in the departments; by implication

this impacts on the curriculum and learning programmes, subjects and ultimately on the qualification, because with name changes comes new content, new exit level outcomes and graduate attributes (CHE, 2013).

In view of the above and relevance to the study, it is clear that the HEQSF as a single framework faces multiple challenges. To understand the HEQSF (2013) it is important to explain the philosophy upon which the framework is build. Here follows a review of OBE as the philosophy upon which the framework is built.

2.6 Outcomes-based education as a higher educational philosophy

In a world with a variety of philosophies on education and theories of learning, South African education, training and development has been directed towards an outcomes-based philosophy to accommodate different imperatives including massification and globalisation (Gossmann, 2008:9). The 'origins' of OBE in South Africa is attributed to five factors (De Clercq, 2001; Jansen, 1999; Muller, 2000; Killen, 2010; Badat, 2010). The first factor is the extra-parliamentary social democratic movement which provided an academic framework for democratic curriculum change. The National Educational Policy Initiative (NEPI) became the home of divergent intellectual thinking regarding 'equity' and 'development' in a future democratic educational dispensation (Muller, 2000: 123-124). This marks the first time in South African educational history that curriculum discourse became shaped within academic frameworks rather than political contexts. OBE thus becomes one of the curriculum features by which economic development is 'measured' (Badat, 2010).

The second factor is the private sector input through the Private Sector Educational Council (PRISEC). PRISEC staked its claim in the 'curriculum industry' by propositioning that national economic development would best be served not by formal academic training alone, but combining vocational and entrepreneurial education as well (Jansen, 1999: 5; DHET, 2012). The significance here lies in the observation that economic productivity was not isolated from concomitant curriculum reconfiguration. For instance, De Clercq (2001): 156) cites that: "The education system [in post-apartheid South Africa] has therefore to shift from a system that differentiates and socializes students from the rigid hierarchical division of labour of modem industrial societies, to a system producing high ability – high quality products with the ability to solve problems, think critically and apply new skills and techniques to different situations".

The third factor is attributed to the roles played by the non-governmental and foreign donor sectors (Jansen, 1999:5; Badat, 2010). The United States Agency for International Development (USAID) and the Independent Examinations Board (IEB) respectively evince the magnitude of interaction between the afore-said sectors. Although such interaction did not have a sizable impact then (early 1990s) in articulating a coherent approach to OBE as an alternative curriculum option, these sectors were remarkably supportive of curriculum reform initiatives.

The fourth factor is the Education Renewal Strategy (ERS) which became the policy framework for a New Curriculum Model for South Africa (CUMSA). CUMSA stipulated the development of economy-directed learning areas and curricula that will respond to the needs of industry (Badat, 2010).

The fifth factor is the 'high ability-high quality product' integrative approach, manifested by the 1995 White Paper on Education and Training. The previous mentioned document marks a post-1994 era, characterised by attempts to transform and restructure all levels of the education system in a manner befitting democracy (De Clercq, 2001:155; Badat, 2010). The aim of which was "... to restructure the existing divided and fragmented education system, known for its poor access progression, low participation and separate systems of poor provision, curricula, examination and certification structures" (De Clercq, 2001: 55-56).

OBE's emergence in the late 1996 was 'afflicted' more by controversy, confusion and continuous debate than the post-1994 euphoria (feeling of great happiness) and liberation (De Clercq, 2001:157-158; Jansen, 1999:7-10; Van der Horst & McDonald, 2007). The rationale for its 'importation' from the industrially and technologically advanced countries of the world is rooted in the need for understanding the workings of the global economy (Muller, 2000:96; South African Qualifications Authority, 2009). In reinforcing equality of opportunities, OBE is also viewed by the above authors as achieving the development of generic and flexible skills that are regularly updated; and thus boost the national economy's capacity to participate in the 'high skill-high ability' requirements of the economy (De Clercq, 2001:156; SAQA, 2009). Furthermore, "...changes in the global post-modem informational economy require the education and training system to promote highly qualified individuals which are highly skilled to give countries a leading competitive edge in the global economy" (SAQA, 2009). Highly skilled and highly qualified means that individuals will be able to respond to the demands of the economy and world of work and also function on higher cognitive levels. OBE address the latter by

relying on a learning approach where equivalence, articulation, flexibility, progression across different learning institutions and contexts is facilitated (Davis, 2010).

The introduction of OBE, according to Boughey (2009:8) is closely linked to the establishment of the NQF. Without a common guiding principle, the description of qualifications on the framework is likely to be both haphazard and highly confusing (Boughey, 2009). Therefore, OBE is necessary, in terms of its capacity to transform the learning required by the country, and to act as the philosophy of a functional qualifications framework in every educational sector (HE, basic education and the occupational sector). The CHE (2004b:36) supports the use of learning outcomes although a 'weaker' form of the OBE approach is used in the curriculum design process, which seems to be more appropriate in the HE context.

As an educational philosophy, OBE has been severely criticised as accentuating non-cognitive skills and competences (training) at the expense of critical and cognitive skills (Killen, 2010:12). In indicating a devaluation of OBE's purported goals, Van der Horst and McDonald (2007) points out that OBE's 'success for all' notion "... reduces education, teaching, and learning to forms of human engineering and quasi-scientific planning procedures that amounts to moulding students through behaviour modification". What the 'success for all' notion asserts is that:

- All students can learn and succeed at their own pace;
- Success at school breeds even more success in life, and
- Conditions for success are determined and controlled.

In view of the above, OBE as a philosophy in South Africa has sparked much controversy and debate (Jansen, 1999:3). Killen (2010) elaborates that, "This single most important curriculum controversy in the history of South African education [has generated debate] not only on the modalities of change implied by OBE, but on the very philosophical vision and political claims upon which this model of education is based". CHE (2013:34) makes the following declaration in articulating the vision for an appropriately South African OBE model: "In an outcomes-and programmes-based approach to curriculum design the traditional approach to the higher education curriculum, namely apprenticeship in a single discipline, is not assumed. Instead, disciplinary knowledge and skills are to be selected to serve the purpose of the programme and to provide the knowledge and skills required for the development of applied competence (SAQA's ideal output which integrates education and training) and/or of an institution's particular definition of 'graduateness' (well-rounded students)".

It is noteworthy that CHE (2002b) through its New Academic Policy 2000, vividly makes the point that: "The New Academic Policy [for Programmes and Qualifications in Higher Education] is based on the assumption that, for the time being at least, SAQA's 5 Model of outcomes-based education means that curriculum design, planning, teaching, assessment and writing are developed around the outcomes, is the dominant paradigm of curriculum development in South Africa. If one adopts an outcomes-based approach to assessment (as required by SAQA's format for the registration of qualifications), then one is obliged to state quite explicitly to all stakeholders concerned what knowledge and skills (learning outcomes) one is assessing " (CHE, 2002b:112).

The aforesaid statements outline a curriculum design policy framework in which applied competence is pivotal to the formulation of learning outcomes. The curriculum content is therefore tilted towards performativity. Even if an institution adopts the process model, the product component is still required for NQF/SAQA compliance, which is directed at amongst others, facilitating lifelong learning (Mkhonto, 2007:67; SAQA, 2009).

'Outcomes' provide the foundation for the formal equivalence of certifications. The South African policy experts decided to define outcomes broadly in a non-behaviouristic way, in terms of key generic skills and knowledge, such as the ability to understand a task theoretically, apply skills and knowledge to it and transfer them to another context (Van der Horst & McDonald, 2007). Outcomes become then, an integral component of learning by complementing curricular content and learning methods. This integration of content, skills and competencies/outcomes in each course/diploma makes portability and articulation between learning contexts and institutions more meaningful and realistic. Existing academic and vocational courses and educational practices in South Africa could benefit from such changes as they have suffered in the past from curricula which have been mainly content-oriented with examinations having detrimental backwash (undesirable condition that continues long after the event which caused it) effects on the whole school academic or vocational curriculum (Spreen & Valley, 2012). OBE encourages courses, diplomas or degrees to combine theoretical and practical knowledge and competencies. It challenges the polarisation between different orders of learning (low order learning to higher order learning) and knowledge, between theory and practice, between the ability to think abstractly and through concrete applications (De Clercq, 2001:156; Spreen & Valley, 2012). SAQA (2013:96) concurs with this integrative approach to the extent that it empowers students to master their own destiny, and to the extent of systematising all levels and

forms of learning; from general education to further education and to higher education, and its infusion into the NQF. SAQA (2013) cautions however, on the basis of such student empowerment that: "Critics may well leap to the conclusion that the NQF is a scheme to empower students by reducing skills for required job".

The truism is that teachers were disenfranchised from the conceptualisation and implementation process (Van der Horst & McDonald, 2007). The teachers were not consulted in conceptualisation of OBE, which lacked a South African context, and hence the distinction between traditional, transitional and transformational OBE variants (Jansen, 2001b:7). The methodological articulation was complicated by an unprecedented body of new terminology. The nomenclature in South African OBE is so intricate and redundant that it has possibly generated the most extensive vocabulary to accompany a curriculum reform initiative in the twentieth century (Spreen & Valley, 2012). Most teachers were therefore not only incapacitated by poor preparation, they were also intimidated by the formidable verbal arsenal envisaged to become the very tools of OBE's implementation (Jansen, 1999:9; Van der Horst & McDonald, 2007).

From this study's viewpoint, such criticism is unfortunate. Despite the array of OBE-specific criticism, it is the view of this study that the OBE 'movement' has to be credited for its proactive approach of enhancing diversity, the recognition that all learning is, and all students are capable of optimising their potential. In that regard, OBE is construed here as contributing effectively to the diverse HEIs and to the ways of learning and teaching. Against the mentioned background it becomes important for this study to discuss the roots of OBE. It is important for the researcher to show that HEI's teaching and learning are influenced by educational philosophies such as OBE.

Malan (2000) analysed past educational reforms such as Tyler's educational objectives, Bloom's Mastery Learning and Competency Based Education, which influenced OBE. Here follows the explanations of the mentioned educational reforms.

Tyler's educational objectives. In 1949 Tyler identified fundamental issues that are important when developing and planning instruction, including purpose, content, organisation and evaluation. He believed objectives were essential for systematic planning and identifying the required student behaviour post instruction as well as the content and context to apply it within. In his curriculum design approach the basic philosophy for outcomes based design is rooted in

the setting of the objectives and the achievement thereof (Malan, 2000). In Tyler's linear objectives model, these fundamental issues with regards to curriculum design are discussed. This curriculum model is further discussed in Chapter 3.

Bloom's Mastery Learning. Bloom's taxonomies for educational objectives emerged in the 1950s and helped determine whether students had attained an acceptable standard of learning through sufficient opportunities and support from an appropriate learning environment. Other characteristics of mastery learning include:

- Ascertaining prerequisite knowledge or skills to attain goals (outcomes).
- A flexible timeframe to attain goals (outcomes).
- Using different media and materials to create enriched teaching / learning formative evaluation to provide feedback for both teaching and learning improvement (Malan, 2000).

Competency Based Education. Malan (2000) summarises the following components from the competency based literature, noting their prominence in OBE. They are:

- Explicit learning outcomes are set with respect to the required skills and standards of assessment.
- A flexible timeframe to master skills.
- A variety of instructional activities to facilitate learning.
- Criterion referenced testing of required outcomes.
- Certification based on demonstrated learning outcomes.
- Adaptable programmes to ensure optimum student guidance.

Components such as criterion referenced testing of required outcomes and variety of instructional activities to facilitate learning are incorporates in the outcomes-based integrative model that will be further discussed in Chapter 3.

Based on the abovementioned information the view is that OBE is not only about curriculum change (content, outcomes and assessment criteria), but also about changing the nature of how the education system works (approaches with regards to teaching and learning strategies to be student-centred) (SAQA, 2009). The guiding vision is a set of principles and guidelines that frame the education and training activities that take place within a system (SAQA, 2009:1). If one accepts that OBE is about systematic change, then there is likely to be a dimension that

challenges current practices of curriculum development and delivery. Within the NQF paradigm the successful planning and learning programme is only possible when the desired learning outcomes are clear. Within the outcomes-based system, the choices within the learning and programme design need to be governed by the extent to which a particular decision contributes ultimately to the achievement of desired outcomes (SAQA, 2009:2). SAQA (2009) mentions that any education system exists on a number of levels. SAQA is very specific and refers to three levels. The first level is principles governing the system organisation i.e. value drivers in a system. The second level is principles of pedagogy that drives programme design, delivery and assessment. The third level is the specific learning programme delivery-pedagogy in the classroom (SAQA, 2009).

Some would argue that (2) should precede (1) but in the South African context however, in 1994 the democratic government faced substantial problems in education and training at a systematic level. These problems were so deep-rooted and wide-spread in the system that in order to address the fundamental problems in the South African educational system, the decision was taken to establish a qualifications framework i.e. a set of principles and guidelines by which records, student achievements are registered to enable recognition of acquired skills and knowledge; these records reflect the required outcomes of the learning process. Hence at the system organisational level, the NQF determines that a system organised around the notion of learning outcomes will drive education and training in South Africa (SAQA, 2013). In this system driven by learning outcomes the following are important: levels, level descriptors, purpose of level descriptors, and use of level descriptors and the reading of level descriptors. These are discussed below.

- **Levels**

  Moon (2002:23) and the CHE (2013) define a level as an indication of the standard of difficulty of the work that a student will need to be able to undertake in order to be considered to have achieved the credit for the learning. A level, according to Gosling and Moon (2001), is an indicator of relative demand; complexity; depth of study and learner autonomy. Levels are, according to Moon (2002:23), arranged in a hierarchy, so that a higher level is seen as more complex in terms of learning than a lower level, and there is an assumption that levels higher in the hierarchy subsume the learning from lower levels. Thus, someone entering a programme at Master's level would be expected to have attained learning described below a Master's level.

- **Level descriptors**

Progression is a key principle underlying the NQF. This is achieved through the use of level descriptors. Level descriptors, according to the SAQA (2009), describe an increasing complexity in learning outcomes (including skills and personal development). Gosling and Moon (2001) define level descriptors as generic statements describing the characteristics and context of learning expected at each level against which learning outcomes and assessment criteria can be reviewed in order to develop modules and assign credit at the appropriate level.

- **Purpose of level descriptors**

According to SAQA (2009), the purpose of the level descriptors for the 5 to 10 level HEQF is to ensure coherence across learning in the allocation of qualifications and standards to particular levels, and to facilitate the assessment of the international comparability of standards and qualifications.

- **Use of level descriptors**

Moon (2002:35) states that the use of level descriptors is an endeavour to make HE more transparent. Level descriptors may be used as a tool to demonstrate that the expectations of achievements of students on one programme are less than, more than or similar to those on another programme. SAQA(2009) states the following regarding the use of level descriptors:

- Level descriptors are not learning outcomes or assessment criteria. They provide a broad frame from which outcomes and assessment criteria for a particular programme can be derived.
- Level descriptors are descriptive, and not prescriptive statements, i.e. the competencies listed at a particular level in the framework broadly describe the learning achieved at that level, but an individual learning programme may not necessarily meet each and every criterion listed.
- Level descriptors do not describe years of study, e.g. the 360 credits of a Diploma are spread over levels 5, 6 and 7. Levels 6 and 7 can for example be taught in the same year.

- **Reading the level descriptors**

When reading the level descriptors the philosophical underpinning and the applied competence of the NQF is noticed. Applied competence has three constituent elements

namely, foundational, practical and reflexive competences. The SAQA (2009) defines foundational, practical, and reflexive competences as follows:

- Foundational competence embraces the intellectual/academic skills of knowledge together with analysis, synthesis and evaluation (information processing and problem solving).
- Practical competence includes the concept of operational context.
- Reflexive competence incorporates learning autonomy.

Levels should be allocated to modules based on the level of difficulty of the module reflected in the outcomes and not according to the academic year level of the student. The use of level descriptors with outcomes puts the focus on learning. The focus is no longer on a concern with the complexity of input (teaching), but it is on the complexity of output (what students can do as a result of a study at a particular level). In the table below the relationship between the Critical Crossfield Outcomes (CCFO's) and the level descriptors are shown. For this study it is important to mention that the level descriptors and CCFO's provide the tools and criteria to develop a responsive curriculum and also allow students to experience optimal learning (SAQA, 2009).

Table 2.4 Relationship between critical cross-field outcomes and level descriptors

Critical cross-field outcomes	Level descriptors
• Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made. • Work effectively with others as a member of a team, group, organisation, community. • Organise and manage oneself and one's activities responsibly and effectively. • Collect, analyse, organise and critically evaluate information. • Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion. • Use science and technology effectively and critically, showing responsibility towards the environment and health of others. • Demonstrate an understanding of the world as a set of related systems by recognizing that problem-solving contexts do not exist in isolation. • Reflecting and exploring a variety of strategies to learn more effectively	• Scope of knowledge • Knowledge literacy • Method and procedures • Problem solving • Ethics and professional practice • Assessing, processing and managing information • Producing and communicating information • Context and systems • Management of learning • Accountability

Source: South African Qualifications Authority (2009:29-36)

OBE was implemented to accommodate different imperatives, such as globalisation, massification and student mobility (SAQA, 2009). It is the opinion of this study that the shift in education, to focus more on the needs of students and their learning approaches, will enable the students to experience optimal learning through a responsive curriculum. The performance is shifted from teaching to active, collaborative and deep learning, enhances the principles of optimisation of learning (see Par. 3.4). Students are expected to take ownership for learning while academics act as facilitators to guide them in constructing further knowledge (Gossman, 2008:10). Flowing from the aforesaid, it seems that there are many positive aspects to OBE, particularly from a transformational viewpoint. OBE, supports a rational approach to education as a means rather than an end in itself and supports cooperative (working together) versus competitive (individualistic) learning (Butler, 2010:11). OBE, demands that teachers plan, manage and account for what happens during learning, teaching and the attainment of desired

outcomes, as to the completion of the curriculum content and achievement of grades (Van der Horst & McDonald, 2007; Butler, 2010). Learning is no longer time and teacher dependent. Students, educators and others who support learning have to become more attuned to creating the conditions that supports learning and attainment of desired outcomes (Butler, 2010:12). As noted by Spady (1994), OBE demands a "commitment to continuous growth and improvement is crucial to success" (Van der Horst & McDonald, 2007).

A student-centred approach that is propagated by OBE means that the design of curricula will have to be different (Jordaan, 2012). In the following section the curricula of the subjects Business Analysis III and Business IV in the Department of Informatics at the TUT will be discussed, to elaborate on the idea of a different curricula design as mentioned by Jordaan (2012) as well as a responsive curriculum.

2.7 Curricula in the Department of Informatics in the Faculty of ICT at the Tshwane University of Technology

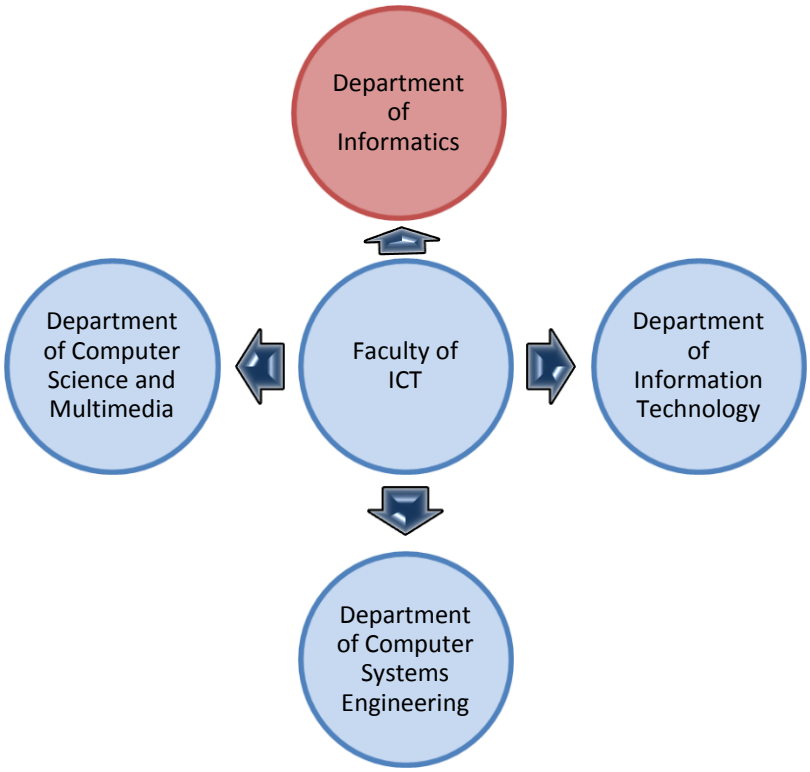
In HE, curricula are the responsibility of individual institutions (DHET, 2012). It is important for this study to review a curriculum in practice and whether it can be regarded as a responsive curriculum. The curricula of Business Analysis III and IV, in the Department of Informatics, were the focus of this study. The mentioned curricula are based on the philosophy of outcomes-based education. It is a philosophy that focuses on the ability of students to demonstrate that they know and are able to perform some stated learning outcomes. Akinmusuru (2011:5) is of the opinion that outcomes shape the curriculum and help in the curriculum design process. Materu (2007:8) concurs and recommends the following process for a curriculum to run effectively:

- Find out the needs of industry and other societal stakeholders.
- Determine what the outcomes of the education of graduates of the program should be in order to meet these industrial and societal needs.
- Determine what it would take to enable the education of students from when they enroll in the program to when they graduate to meet these outcomes of the training.
- Put in place assessment tools to continuously measure student learning throughout the program in order to achieve the above goal.
- Create an encouraging environment that would ensure optimum learning experiences for the students.
- Continuously interact with industry and other stakeholders.

- Undertake periodic reviews of the curriculum in order that updated outcomes meet the needs of industry and society and iteratively adjust curriculum content as needed.

Bearing in mind that the re-curriculation process applies to all the departments in the Faculty of ICT, it is important in this study to focus on the department relevant to this particular study. The following organogram illustrates the different departments of the Faculty of ICT.

Figure 2.2 Departments of the Faculty of Information and Communication Technology



Source: Human-Hendricks (2014)

In order to understand the curriculum used in the Department of Informatics it is important to comprehend it in the broader context of the faculty in which it functions and to place the Faculty of ICT in relation to the HEQSF. In a discussion document dated July 2013 compiled by an appointed task team of the Faculty of ICT, the implications of the HEQSF on the Faculty of ICT's curricula were discussed. The task team consisted of the dean, the associate dean, two heads of department, one sectional head and the curriculum development practitioner for the Faculty of ICT. Here follows the decisions of the task team namely to reduce the number of programs, articulation routes, fundamental learning subjects, re-curriculation and phasing in of new curricula.

- **To reduce the number of programs**

It was decided that specialisations should be revisited to avoid duplication of qualifications. The current Programme Qualification Mix (PQM) makes provision for an array of qualifications; some of them which do not have any students in the program (see Table 2.5 for the list of qualifications). It is now proposed that ICT reduces its qualifications by registering the Diploma of Software Engineering and Web Computing under the qualification in Computer Science. What is also evident from Table 2.5 below is that only one department (Computer Science) will offer a Bachelor and Bachelor Honours degrees. The other departments such as Informatics, Computer System Engineering, and Multimedia and Information Technology will also offer the Advance and Postgraduate Diplomas as articulation routes from the diplomas. This is in line with the curriculum designs in other faculties such as Engineering and the Sciences.

Table 2.5 Current and proposed qualifications of the Faculty of Information and Communication Technology

Completed list of qualifications currently on offer	Proposed qualifications (reduction of qualifications)
National Diploma in Business Applications National Diploma in Engineering in Computer Systems National Diploma in IT in Software Development National Diploma in Industrial Intelligence Systems National Diploma in Multimedia National Diploma in Web and Application Development National Diploma in Communication Networks National Diploma in Support Services	Diploma in Informatics Diploma in Computer Science Diploma in Information Technology Diploma in Multimedia Computing Diploma in Computer Systems Engineering Bachelor of Computer Science
BTECH Software Development BTECH Technical applications BTECH Computer studies BTECH Multimedia BTECH Knowledge Management BTECH Computer Systems BTECH Industrial Intelligence Systems	Advanced Diploma in Informatics Advanced Diploma in Computer Science Advanced Diploma in Information Technology Advanced Diploma in Multimedia Computing Advanced Diploma in Computer Systems Engineering
	Postgraduate Diploma in Informatics Bachelor of Honours in Computer Science Postgraduate Diploma in Information Technology Postgraduate Diploma in Multimedia Computing Postgraduate Diploma in Computer Systems Engineering Postgraduate Diploma in Computer Science
MTECH Software Development MTECH Computer Systems MTECH Business Information Systems MTECH Business Applications MTECH Web and Applications Development MTECH Multimedia MTECH Industrial Intelligence Systems MTECH Computer Studies	Masters of Computing
DTECH Software Development DTECH Computer Systems DTECH Business Information Systems DTECH Business Applications DTECH Web and Applications Development DTECH Multimedia DTECH Industrial Intelligence Systems DTECH Computer Studies	Doctor of Computing

Source: Human-Hendricks (2014)

- **Articulation routes**

In order to simplify the articulation process and to attract more students to post-graduate studies, it is proposed that the intended articulation from diploma into degree be relinquished in favor of an articulation route after completion of the diploma as follows. Students who study the Bachelor Degree can continue to the B Hons program, then the Master's and Doctorate programs. Students, who study the Diploma program, can continue with the Advanced Diploma, Post-graduate diploma in the same specialisation area, and then continue into the Master's and

Doctorate programs. The Advanced Diploma will therefore be used to develop the diploma students on level with the Bachelor students. This also implies that not all specialisations require a Bachelor degree intake. The faculty will nevertheless need to re-curriculate all the specialisation options for each qualification and place them on the PQM, but resources/demand may determine the offering thereof. Below is a depiction of the articulation routes mentioned in the previous section.

Table 2.6 Depiction of progression routes in the Faculty of Information and Communication Technology

	FACULTY OF ICT PROGRESSION ROUTES	
NQF LEVEL		
10	360 CREDITS DOCTORAL OF COMPUTING	
9	180 CREDITS MASTERS OF COMPUTING	
8	120 CREDITS POST-GRADUATE DIPLOMA: INFORMATICS COMPUTER SCIENCE, COMPUTER SYSTEMS ENGINEERING INFORMATION TECHNOLOGY MULTIMEDIA	120 CREDITS BACHELOR HONORS DEGREE: COMPUTER SCIENCE
7	120 CREDITS ADVANCED DIPLOMA: INFORMATICS COMPUTER SCIENCE, COMPUTER SYSTEMS ENGINEERING INFORMATION TECHNOLOGY MULTIMEDIA	360 CREDITS BACHELORS DEGREE: COMPUTER SCIENCE
6	360 CREDITS DIPLOMA: INFORMATICS COMPUTER SCIENCE, COMPUTER SYSTEMS ENGINEERING INFORMATION TECHNOLOGY MULTIMEDIA	

Source: Human-Hendricks (2014)

- **Fundamental learning subject**s

The mission of the TUT is to "produce well rounded graduates who are attuned to the needs of the economy" (Mission statement of TUT 2011). For TUT to fulfil this mission, it is an imperative to empower its students with the ability to function successfully in the future work life, by adequately preparing them to be able to fit their specialisation knowledge and skills into the larger social, cultural, political, and economic context of the local and global economy. They should also be empowered to be able to articulate a professional view point from any of these perspectives. It is proposed that a number of credits of coursework be assigned to fundamental learning subjects in the following areas: disciplinary perspectives, national and international perspectives, communication and reasoning competencies, and relevant language competencies. As a faculty the need is to identify such subject areas, decide what number of credits will be allocated to these subjects, as well as on which level these subjects should be offered. Such subjects could be offered to all the students in large groups and could also be service subjects from other faculties. This will impact on the curriculation of the generic first year and the subsequent specialisation subjects. Since 2011, the university is investigating a graduate attributes program, where a committee is considering proposals and credit allocation with regards to the graduate attributes program.

- **Re-curriculation**

In order to be aligned to the HEQSF and international curricula, all qualifications are re-curriculated. Departments were urged to investigate the possibility of developing the Advanced Diploma and Postgraduate Diploma for each specialisation and also to exploit synergies among disciplines.

- **Phasing in of new curricula**

The faculty executive proposed to the institutional regulatory bodies (TUT senate) to phase in the new generic first year content within the structure of the existing Report 151 qualification. This will require a Report 151 deviation approval, but will enable the faculty to offer the new content without having to wait until the final approval of the new diploma.

Once the new first year content is offered in 2019, it will impact on the existing second and third year content. It was decided that departments can simultaneously start offering the newly curriculated content for the second and third year specialisations during 2020 and 2021

respectively. This may also require Senate approvals, depending on the scope of the changes. With the latter in mind, the focus of the Faculty will be to make all the programs and curricula responsive to the needs of society, the economy and the world of work. Curricula will also have to respond to national and international demands and trends.

2.8 Summary

In this chapter, particular issues with regards to the higher educational landscape and in particular the influence on the HE curriculum was discussed. The researcher focused on relevant issues, such as a historical overview of the South African higher educational environment; the changing South African HE environment; the influence of the HEQSF as a single-framework. Furthermore, the challenges brought about by the instability of the HEQSF and HEI's articulation pathways with regards to their qualifications, curriculums and programmes was explained as part of the changes impacting on HEIs. The challenges are not only external but also internal. These challenges focused on the changing academic staff, the student domain, demand on lifelong learning, relevance and innovation of HE curriculum content and postgraduate student employment. The latter places tremendous stress on the HE landscape in South Africa and also the curricula to become responsive to the trends and influences of the international world. A detailed explanation of the re-curriculation process in the Faculty of ICT was provided and as well as how it impacted on the curricula of the Department of Informatics to become responsive to the needs of industry, society and the students.

Furthermore, the impact of the knowledge types and how students learn was briefly mentioned and not discussed in depth. Here the work of Kraak (2000), Boughey (2009), and Gibbons (2007) were discussed and used to underline the shift from Mode 1 knowledge and Mode 2 knowledge. This impact on how students learn, how they are being taught and how the curriculum needs to be structured to incorporate these particular forms of knowledge. It was also discovered in this chapter that the place of learning is no longer confined to the lecture hall but learning can take place in any environment. HE academic staff are becoming animators, facilitators, coaches and consultants to students which are an indication of the importance student-centeredness in the teaching and learning enterprise. The student-centeredness to teaching and learning, in the form of OBE, as an educational philosophy was additionally discussed. In the discussion about OBE it became apparent that there are major differences between the traditional way of teaching and learning and outcomes-based learning. Within the philosophy of OBE the main aim are the competencies students should achieve, through

mastering of outcomes. It is also clear that in OBE, students are at the centre of the learning and that the curriculum development will have to enhance a student-centred approach.

The curricula of the Department of Informatics were briefly discussed in this chapter. The intent and purpose was to provide the background of the re-curriculation processes that is taking place in the department and to establish the impact of the HEQSF on the curricula in this department. Furthermore, whether the mentioned curricula in this chapter is found to be a responsive curriculum and whether it plays a role in the optimisation of learning.

In Chapter 3 the researcher will discuss a responsive curriculum and its impact on HE learning opportunities.

CHAPTER THREE
A responsive curriculum and its impact on higher education learning opportunities

3.1 Introduction

The South African higher educational landscape has changed dramatically in recent decades. Old demarcations (such as the binary divide in HE, mentioned in Chapter 2) have been broken down between traditional universities and other post-secondary education institutions' programmes (Department of Higher Education and Training, 2012; Luckett, 2011; Brint, 2002; Gibbons, 1994).

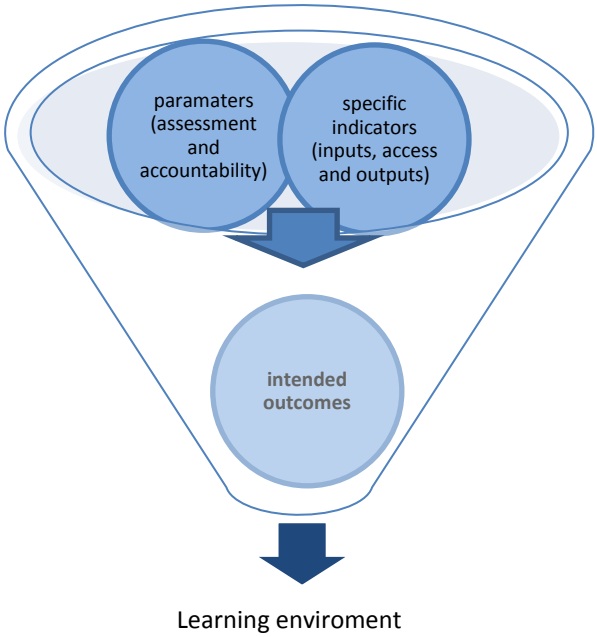
Twenty one years after the change into a democratic government in South Africa it is the accurate time to review what has been achieved in HE as a result of the direct and indirect influence of new policies put in place to transform the HE system in South Africa and to make the system more responsive to the needs of society (CHE, 2013). The Department of Education released the Education White Paper 3, 2007; the Higher Education Act of 1997 was approved and a National Development Plan 2013 was developed. All these documents contributed towards ensuring that HE plays its role in the reconstruction and development of South African society (Human-Hendricks, 2014).

The previous chapter provided an overview of HE challenges, internal and external challenges influencing HEI's curriculum reform in particular. Following on the influences of the internal and external challenges on the curriculum reform, this chapter's approach will be to explain what a responsive curriculum is (building on curriculum reform) and its impact on HE learning opportunities. The latter is important as it will provide clear definitions with regards to the curriculum, responsiveness or a responsive curriculum and the optimisation of learning.

Du Preez and Simmonds (2014:1) and Karseth (2006) argue that a curriculum as a field of study has not yet played a central role in the research literature on HE. In contrast, academics traditionally regarded the curriculum in HE as internal or even a private matter. Azzi, Chika and Haynes (2007) regard the curriculum as more than the aims and the syllabus of education and pedagogy and include the paradigm of teaching and learning. This educational paradigm (see Fig.3.1) is all about considering the total learning experience of the student (Azzi et al, 2007:36). Azzi et al (2007) and Asmal (2003) mention that specific indicators (inputs, access and outputs) and parameters (assessment and accountability) need to be put in place to ensure that the

intended learning outcomes are achieved. These indicators and parameters are evaluated and the results embedded in improvements to the learning environment of current and future students. The following diagram illustrates the abovementioned.

Figure 3.1 Educational paradigm on the total learning experience of students



Source: Azzi et al (2007)

In addition to the abovementioned, El-Khawas (2007:241-248) argues that the learning environment of a student is also shaped by curricular influences (course taken, major fields), formal instructional experiences (type and quality of instruction, interaction with faculty in class), out-of-class experiences (peer-relations, informal interaction faculty) and characteristics of the institution (mission, size, selectivity, culture). Programs need to be responsive and adaptive to these factors (Azzi et al, 2007). HE curricula are further faced with some very practical as well as philosophically grounded questions as to what selection of knowledge should be represented in the university and how that should be constructed epistemologically and from the perspective of the students (Haldane, 2004:14).

The following contemporary competing epistemological pressures such as deconstruction of the module, flexible patterns of study and the incorporation of the five Critical Crossfield Outcomes (CCFO's) on the HE curriculum are considered by Bridges (2000:41) and the CHE (2013). The deconstruction of the module (modularisation of the curriculum) means that the creation of small

units of knowledge and almost infinite number of ways in which they can be assembled encourages analysis of the scope and nature of knowledge. However, once knowledge has been deconstructed the essential quality of the qualification becomes apparent. More flexible patterns of study allows students to accumulate credit for courses successfully completed over a period of time which suited their personal circumstances and by extension to assemble credits for modules taken at different institutions (Bridges, 2000). The incorporation of the first five CCFO's as developed for the context of the South African NQF into the refined descriptors (see Chapter 2, table 2.4) is another epistemological pressure. It is expected that the CCFO's be contextualised and demonstrated in the qualification outcomes developed from these generic descriptors (CHE, 2013).

These pressures for change disturbed the traditional HE curriculum in several different ways. The ways in which the curriculum is disturbed is that the curriculum appears to offer a different philosophical orientation (Pityana, 2009). What is meant by the latter is that it is suggested that the rationale of the curriculum is derived significantly from the needs of the national economy as defined by employers rather than from some ideal of a liberal education or as an expression of a set of scholarly values constructed independently of any notion of economic functionality. The Committee of Vice Chancellors and Principals (1999:39) in a paper on HE in the 21st century, established that there are a few possible features to be observed with regards to the pressures on the curricula in HE. The first feature of the HEIs curricula to be observed is that HEIs have been given a mandate to aid economic competitiveness and promote social inclusion (Pityana, 2009). How far these principles of economic competitiveness and liberal education are really in opposition to each other (and whether indeed the curriculum of HEIs has ever stood so entirely independent of the employment requirements of the upper middle classes) are matters for interesting and important debate (Pityana, 2009).

The second feature of the HEIs curricula, relates to the teaching of essential skills and the employability of graduates (Pityana, 2009). HEIs are faced with choices as to whether they see some or all of these skills (skills such as computer skills, research skills, communication skills, critical thinking skills, and team work) been effectively taught in their faculties or developed as part of an integrated module programme or as something apart from the subject teaching in specialised essential skills programmes (DHET, 2012). The implication of teaching these skills could have different resource implications. For instance, if a HEI decides that the abovementioned skills should be taught outside subject departments, then resources will shift

from those departments and a new type of university teacher will emerge more akin to those who operate in the field of skills training than to traditional research-based teaching (DHET, 2012). If they are to be taught inside the departments, then this will require the development of new capacities among traditional teaching staff and new approaches to their teaching (National Development Plan, 2013). The third feature of the HEIs curricula relates to a different kind of knowledge, it shifts the balance from understanding to skill, from knowing that to knowing how and more particularly to the application of knowledge in a social context and in so doing raises of course complex questions about its assessment (DHET, 2012; Mkhonto, 2007). The last feature to be observed is that the focus and mandate of curricula at HEIs will have to change to accommodate the development of experiential learning, including workplace learning as part of the HEI's curricula (CHE, 2013). The latter challenges the role of academics as the constructors and guardians of a specialised form of articulated knowledge, not derived from a book but from experience. The DHET (2012) concurs with the latter and mentions that HEIs recognise and acknowledge that knowledge derived from outside the academy threaten their own privileged position of authority in its construction of the curriculum. Thus as the language of competence, skills development and capability enters the HE frame, it is important to focus on what the nature of the curriculum should be.

In the following section and against the background of needed change to the curricula of HEIs, it is necessary to introduce the notion of a responsive curriculum, the theoretical frameworks for a responsive curriculum design, approaches to learning and optimisation of learning which might assist in addressing the abovementioned demands.

3.2 Defining a responsive curriculum

In the aftermath of apartheid and apartheid education, South African HEIs are exploring ways in which they can make their curricula more responsive to the needs of under prepared students (Shalem & Slonimsky, 2006:3). In 1996 the National Commission on Higher Education (NCHE) explicitly spelled out a requirement for "heightened responsiveness within HEIs to societal interests and needs", which were conceived as arising from "social, cultural, political and economic changes". Therefore, the NCHE (1996) describes a responsive curriculum as "incorporation of the multiple voices of an increasingly diverse student body, industry and society into governance structures, research and teaching priorities of universities".

Moll (2011:3) writes that the immediate appeal of the concept "curriculum responsiveness is that it promises some positively formulated benchmarks against which we might be able to judge whether our education programmes are meeting the needs of transforming society. One is aware of this in relation to recent policy research in South Africa, where it has been used frequently in debates on further education and training (FET) and on HE". According to Ekong and Cloete (1997), responsive curriculum was employed initially in 1997 as one of the changes to a national and global environment in an African context. It was also articulated systematically for the first time by Dowling and Seepe (2004) in relation to the "need to ensure that the African experience is at the core of the curricula" and by Gamble (2003) in her work on the transformation of the FET colleges. At an epistemological level, increased responsiveness entails a shift from closed knowledge systems (controlled and driven by canonical norms of traditional disciplines) to more open knowledge systems in dynamic interaction with external social interests, consumer or client demand and other processes of knowledge (NCHE, 1996:4).

Other studies, as well as more informal accounts from a wide spectrum of lecturers point to a common pattern in the ways that students who were under-prepared for university studies by their schooling tend to approach texts and epistemic practices when they first engage in university study (Butler, 2010). With students not prepared for university, it becomes important to understand how the curriculum can be employed so that the students can respond to it and be successful in their learning (Bertram, 2006). Before the latter can be addressed there needs to be a clear understanding of what is meant by a responsive curriculum. Although some academics have been working towards developing a responsive curriculum for decades, equity and social justice goals have received new impetus and higher educational management sanction because of the push towards globalisation (Manathunga, 2011:1). In the following paragraphs a responsive curriculum will be defined and the characteristics of responsiveness will also be included.

Manathunga (2011:1) defines a responsive curriculum as a reflective approach to teacher education, where students and the teaching team would be encouraged to "reopen their own backgrounds". According to Moll (2011:3) literature suggests a number of ways that the concept of a responsive curriculum can be interpreted. The ways of interpreting a responsive curriculum according to Moll (2011) is to consider the economic responsiveness, the cultural responsiveness, disciplinary responsiveness and learning responsiveness of the curriculum. Curriculum responsiveness denotes the ability of teaching and learning in HEI to meet the changing needs of employers and hence to provide them with personnel who will be able to

increase their economic competitiveness. The notion of cultural responsiveness has a dual purpose: it relates both to the students and the work of academics and in the way they articulate and research their own knowledge disciplines (Moll, 2011).

The responsiveness of the curriculum to its knowledge discipline in a university context simply sanction that a good university teacher or researcher keeps abreast of developments in his/her discipline (NCHE, 1996). Responsiveness of the curriculum to the student or the responsiveness of teaching entailed in the curriculum to address the needs of the student articulates the notion of "teaching responsively" in order to ensure the maximisation of learning opportunities for students (Moll, 2011). In doing so, he (Moll) contends that academics should adjust their instructional strategies to "the rhythms of learning" and "the tensions and emotions of learning". He pursues the notion of learning responsiveness to students by exploring and offering advice on such things as lecturing, creatively preparing, facilitating, discussions, helpful evaluations and overcoming resistance to learning and building trust with students so in this sense, it is clear that the curriculum is responsive to the learning needs of the students by teaching them in terms that are accessible to them and assessing them in ways that they understand (Moll, 2011).

There is, of course, a much broader, wide-ranging literature that employs various concepts of educational responsiveness, such as parental responsiveness, care worker responsiveness and health system responsiveness in relation to human development issues (Moll, 2011:3). All this literature has a bearing on the way curriculum responsiveness might be formulated. But for this study the sentence-frame discussed below, by Moll (2011), to explain a responsive curriculum will be used. If someone or something is responsive, he, she or it is responsive to some state of affairs by doing something: **X** is responsive to **Y** by doing **Z**. Here follows the explanation of the above mentioned according to Moll (2011). In this discussion**, X** is the university curriculum, and the other two terms in the sentence-frame can be seen in the debates as the curriculum responsiveness concept. Moll (2011) mentions that the curriculum responsiveness concept can firstly be the economic responsiveness of the curriculum. In contemporary debates, this boils down to the issue of whether or not HEI's are effectively training sufficient numbers of qualified personnel in each key sector of the economy. Curriculum responsiveness denotes the ability of teaching and learning in the HEIs to meet the changing needs of employers, and hence to provide them with personnel who will be able to increase their economic competitiveness (Boughey, 2009).

Secondly, cultural responsiveness of the curriculum can also be regarded as a concept. The concept of cultural responsiveness has generated an extensive literature in educational studies, particularly in the United States (Wlodkowski & Ginsberg 1995; Delpit 1996; Gay, 2002; Hayes & Juárev, 2012: 4). In terms of the relevant sentence-frame, cultural responsiveness entails that the curriculum is responsive to the cultural diversity of students and society and constitute various alternative learning pathways for students (Moll, 2011:5). Thirdly, Moll (2011:6) reflects on the responsiveness of the curriculum to its knowledge discipline. In the university context, this notion of responsiveness is particularly significant. Unlike in other institutions that deliver curricula, a university curriculum is bound up with a community of scholars motivated by research, that is, the production of new knowledge according to specified problematic and evidential procedures (DHET, 2012). In terms of the sentence-frame that is being engaged, disciplinary responsiveness can mean that the curriculum is responsive to the nature of its underlying knowledge discipline by ensuring a close coupling between the way in which knowledge is produced and the way students are educated and trained in the discipline area (Hayes & Juárev, 2012).

Lastly, learning responsiveness of the curriculum can also be regarded as a concept to be employed in the sentence-frame to illustrate a responsive curriculum (Moll, 2011). At large increased learning responsiveness on the part of academics includes more applied research relating to classroom and schoolyard activities, than emphasis on contexts of productive and deep learning (Sarason, 2009).

Moll (2011:23) summarised the importance of the above mentioned as follows: "The most important imperative of curriculum responsiveness is to retain all these levels, bearing in mind the development of an excellent curricula at the HEIs is for the good of South Africa and all South Africans". To fully understand the concept responsive curriculum and its purpose in this study, the explanation of the characteristics of a responsive curriculum should be seen as an important part of this study. Villegas and Lucas (2002) encourage academics to critically examine their programs and systematically interweave the following characteristics, throughout the coursework, learning experiences and fieldwork to be responsive to the needs of the students. Below is a brief description of these characteristics:

- Positive attitude toward students from culturally diverse backgrounds. By respecting cultural differences and by being inclusive in their educational approach.

- Commitment and skills to act as agents of change. Such a curriculum enables the academics to confront barriers and obstacles to change and develop skills for collaboration and dealing with chaos.
- Constructivist views of learning-content that all students are capable of learning and teachers must provide scaffolds between what students already know through their experience and what they need to learn. Constructivist teaching promotes critical thinking, problem solving, collaboration and the recognition of multiple perspectives.
- Culturally responsive teaching strategies support the constructivist view of knowledge in teaching and learning. As academics assist students to construct knowledge, build on their personal and cultural strengths, students will be able to interact and respond on basic questions and answers and other didactic methods.

According to the Alaska Native Knowledge Networks (2005) the characteristics of a responsive curriculum are the following:

- Recognise the validity and integrity of the traditional knowledge system.
- Utilise multiple teaching methods.
- Provide opportunities and time for students to learn in settings where local cultural knowledge and skills are naturally relevant.
- Provide opportunities for students to learn through observation and hands-on demonstration of cultural knowledge and skills.
- Adhere to the cultural and intellectual property rights that pertain to all aspects of the local knowledge they are addressing.
- Engaging students in appropriate projects and experiential learning activities in the surrounding environment.

According to the Wits School of Education (2009), a responsive curriculum is characterized by the following:

- Special academic programmes for access should be developed.
- Emancipator (liberal) programmes as part of the curriculum should be developed.
- Discipline responsiveness, highly systematised forms of enquiry should form part of the curriculum.
- Applies both to classical disciplines and interdisciplinary studies.

- Learning responsiveness to provide access to the epistemic context of the institution and skillful teaching.

The Higher Education Strategic Plan (2009-2014) mentions that a responsive curriculum displays the following characteristics.

- Include a flexible mode of delivery.
- Support employability, social inclusion and lifelong learning.
- Identify training needs by meeting the needs and extensive delivery in the workplace.
- International offer to ensure sustainability by meeting the needs of the international marketplace.

Taking the abovementioned definitions and characteristics into consideration the researcher thus defines a responsive curriculum as a curriculum which keeps abreast of the information explosion and knowledge boundaries which enables new learning and thinking abilities and the pedagogies that will address the needs of society, the students and the changing workplace. A curriculum that will ensure that students are employable after completing a qualification or curriculum which is locally relevant, and internationally recognised or a curriculum that ensures that students are holistically developed, to function as an independent and responsible individuals in society. Before any curriculum can be responsive it is important to examine the frameworks which a curriculum design is constructed upon. For the purpose of this study important theoretical frameworks of curriculum design will be explained.

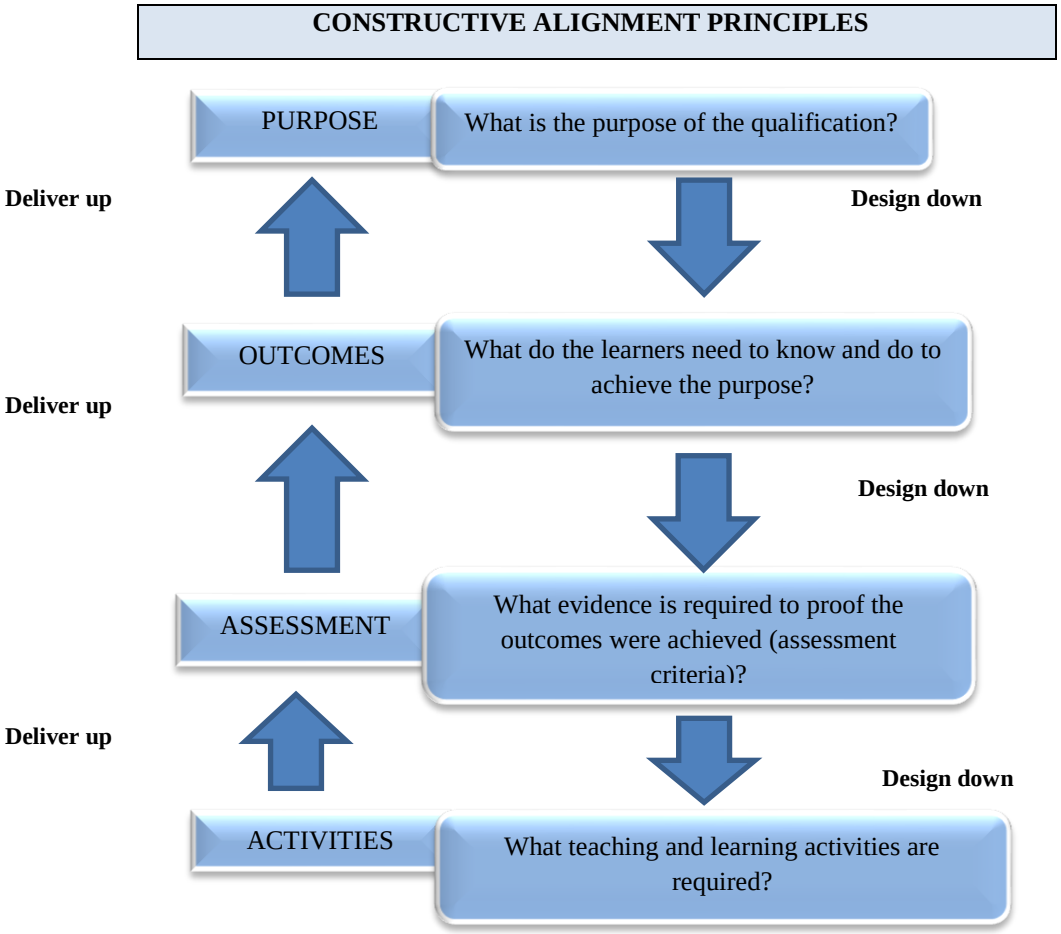
3.3 Theoretical frameworks for a responsive curriculum design

In this section the major educational frameworks that have influenced the curriculum design relevant to this study will be discussed. Philosophical issues always have an impact on HEI's curricula and society. There is a special urgency from industry that dictates continuous appraisal and reappraisal of the curricula of HEI and also for the philosophical framework of these curricula (Ornstein & Hunkins, 2009: 1). Ornstein and Hunkins (2009:2) provide the following reasons that can assist in the understanding for sound philosophical frameworks with regards to the curricula in HEIs. A philosophical framework gives direction to academics about what to teach and what outcomes they want to reach; it adds value to how students learn. A philosophical framework likewise provides academics with a basis for making such decisions as

to what workbooks, textbooks or other cognitive and non-cognitive activities to utilise, how to assess students and how to use assessment criteria in a course (Ornstein & Hunkins, 2009).

In order for academics to make the abovementioned decisions, they should have an understanding of the constructive alignment principle. The following diagram is a depiction of the constructive alignment principle.

Diagram 3.1 Constructive alignment principles with regards to curriculum design



Sources: South African Qualifications Authority (2005; 2009)

The constructive alignment principle also known as the design down and deliver up principle, according to SAQA, is a philosophical approach which provides insight into how to construct the outcomes, assessment criteria and learning activities in a course (SAQA, 2009). The design down and deliver up actions in the diagram is essential when formulating and justifying educational purposes, selecting and organising knowledge, formulating basic procedures and activities and dealing with the curriculum (SAQA, 2009). In addition to the abovementioned,

the following eight major educational approaches, which influenced curriculum design over the years was considered. Different approaches to resolving fundamental educational issues and curriculum development, have given rise to different schools of thought. In this study the schools of thought which will be addressed are Essentialism, Progressivism, Perennialism, Extentialism, Behaviourism, Reconstructionalism, Cognitivism and Constructivism. Taken together these schools of thought do not exhaust the list of possible educational approaches, but they certainly present strong frameworks for curriculum development. In order to have an understanding what these educational approaches entail, they will be discussed below.

The concept *Essentialism* refers to the "traditional" or "back to the basics" approach in education. It is so named because it strives to instill students with the "essentials" of academic knowledge and character development. The underlying philosophical bases of Essentialism are grounded in a conservative philosophy that accepts the social, political and economic structure of any society. It contends that schools should not try to radically reshape society. Rather the Essentialists argue that schools should transmit the traditional moral values and intellectual knowledge that students need to become model citizens. Essentialists believe that educators should instill such traditional virtues as respect for authority, perseverance, fidelity to duty, consideration for others and practicality. Reflecting its conservative philosophy, essentialism tends to accept the philosophical views associated with the traditional conservative elements of society (Cohen, 2007:1; Diehl 2006:4).

The *Progressivism* approach encouraged HE to broaden their curricula making education more relevant to the needs and interests of students. The progressivists regarded the physical universe as real and fundamental and thought that people are social animals who learn well through active interplay with others and that learning increases when people are engaged in activities that have meaning for them. Fundamental to the latter is the notion that knowledge is acquired and expanded as people apply their previous experiences in new ways. Education to the progressivists is a reconstruction of experiences, an opportunity to apply previous experiences in new ways (Posner, 2004). Progressivists emphasise in their curriculum the study of the natural and social sciences. Educators expose students to many new scientific, technological and social developments reflecting the progressivist notion that progress and change are fundamental. Students are exposed to a more socially responsive curriculum. In addition students solve problems in lecturer-halls similar to those they will encounter outside of the university; they learn to be flexible problem solvers. Progressivists' believe that education should be a

perpetually enriching process of ongoing growth, not merely a preparation for adult lives. They [Progressivists] also deny the Essentialist belief that the study of traditional subject matter is appropriate for all students, regardless of interest and personal experience (Posner, 2004). By including instruction in industrial arts and home economics, progressivists strive to make schooling both interesting and useful. Ideally the home, workplace, school and university blend together to generate a continuous, fulfilling learning experience in life (Education.com 2013; Cohen 2007; Diehl 2006).

The concept *Perennialism* means everlasting. Espousing the notion that some ideas have lasted over centuries and are as relevant today as when they were first conceived. Perennialism urges that these ideas should be the focus of education and that ideas that are everlasting should be taught to students. The cultivation of intellect is the highest priority in an education (Leonard, 2014). The Perennialists, belief when students are immersed in the study of profound and enduring ideas, they will appreciate learning for its own sake and become true intellectuals. Perennialism is not rooted in a particular time and space. That is why it is important for the Perennialist to teach ideas that are everlasting. The curriculum for Perennialism should focus on meaningful concepts such as philosophy, art, literature and principles of science (Diehl, 2006:5). The roots of Perennialism lie in the philosophy of Plato and Aristotle as well as that of St. Thomas Aquinas. Perennialism displays some similarities to Essentialism. They are:

- aims to rigorously develop all students intellectually.
- both advocate the classroom centered around the teachers in order to accomplish these goals.
- the teachers do not allow the students' interests or experiences to substantially dictate what they teach.
- tried and tested methods are believed to be most conducive to disciplining students' minds.
- accept little flexibility in the curriculum (Cohen, 1999; Posner, 2004; Education.com, 2013).

Although these two approaches display similarities they also have these differences:

- unlike Essentialism, Perennialism is not rooted in any particular time or place.
- unlike Essentialism, Perennialists seek to help students discover those ideas most insightful and timeless in understanding the human condition.
- unlike Essentialism, the study of philosophy is crucial to the Perennialism curriculum.

- Perennialist urge schools and universities to spend more time on teaching about concepts and explaining how these concepts are meaningful to students.
- Perennialists lament the change in universities over the centuries from places where students (and educators) pursued truth for its own sake to mere glorified training grounds for students' careers (Cohen, 1999; Posner, 2004).

Existentialism bounced from a strong rejection of traditional philosophy. Educational existentialism rejects the existence of any source of objective, authoritative truth about metaphysics, epistemology and ethics. Instead individuals are responsible for determining for themselves what is "true" or "false", "right" or "wrong". For the Existentialist, there exists no universal form of human nature: individuals have the free will to develop as they see fit. In the Existentialist classroom, subject matter takes second place to helping the students understand and appreciate themselves as unique individuals who accept complete responsibility for their thoughts, feelings and actions (Posner, 2004). The role of the educator is to help students define their essence by exposing them to various paths they may take in life and creating an environment in which they may freely choose their own preferred way. The Existentialists demand the education of the whole person, not just the mind and afford students great latitude in their choice of subject matter. In the Existentialist curriculum, students are given a wide variety of options from which to choose. To the extent that staff, rather than students, influences the curriculum, humanities are commonly given tremendous emphasis. The educators are explored as a means of providing students with vicarious experiences that will help unleash their own creativity and self-expression (Leonard, 2014). The Existentialist methods focus on the individual. Learning is self-paced, self-directed and includes a great deal of individual contact with the teacher, who relates to each student openly and honestly (Education.com, 2013; Cohen, 2007; Diehl, 2006).

Behaviorism is a psychological and educational approach that holds that one's behaviour is determined by environment rather than heredity, and states that human behaviour can be explained as responses to external stimuli (Cohen, 2007). Behaviourists are unique amongst psychologists in believing that it is unnecessary to speculate about internal mental processes when explaining behaviour: it is enough to know which stimuli elicit which responses. Behaviourists also believe that people are born with only a handful of innate reflexes (stimulus-response units that do not need to be learned) and that all of a person's complex behaviours are the result of learning through interaction with the environment (Gruwell, 2007:9). They also

assume that the processes of learning are common to all species and so humans learn in the same way as animals (Cohen, 2007:6).

The Behaviourist approach is deterministic: people's behaviour is assumed to be entirely controlled by their environment and their prior learning, so they do not play any part in choosing their own actions. The approach takes the nurture side of the nature-nurture debate, believing that apart from a few innate reflexes and the capacity for learning, all complex behaviour is learned from the environment. Their insistence that all learning can be accounted for in terms of law-governed processes like classical and operant conditioning, reflects a nomological (relating to) approach to studying human behaviour (although behaviourists never ignore individual differences, since every person's history of learning is unique). The Behaviourists' view that all behaviour, no matter how complex, can be broken down into the fundamental processes of conditioning makes it a highly reductionist approach to psychology (Johnson, Dupuis, Musial, Hall & Golick, 2008:5). While educational existentialism is based on the notion that individuals possess free will to shape our innermost nature, behaviorism is derived from the belief that free will is an illusion. According to a pure behaviorist human beings are shaped entirely by their external environment. Alter a person's environment and you will alter his or her thoughts, feelings and behavior. Behaviorisms assert that the only reality is the physical world that is discerned through careful, scientific observation (Cohen, 2007; Howe, 2014:2).

Reconstructionism is an approach that emphasises the addressing of social questions and the quest to create a better society and worldwide democracy (Howe, 2014). Reconstructionist educators focus on a curriculum that highlights social reform as the aim of education. For the Reconstructionist the curriculum focuses on students' experiences and taking social action on real problems, such as violence, hunger, international terrorism, inflation and inequality. Strategies for dealing with controversial issues are inquiry, dialogue and multiple perspectives are the focus. Community-based learning and bringing the world into the classroom are the educational imperatives (Posner, 2004; Education.com 2013; Howe, 2014).

Cognitivism is an approach which emphasises the human cognition or intelligence as a special endowment enabling humans to form hypotheses (assumption) and develop intelligence, known as cognitive development (Education.com, 2013:1; Howe, 2014). Cognitivism involves examining learning, memory, problem-solving skills and intelligence. Cognitivism is seen from different viewpoints, for example: Wilhelm Wundt believed in the development of introspection

(self-evaluation) as a means of studying the mind. Jean Piaget on the other hand believed that the human mind is embedded with specific ways of doing things. Lev Vygotsky believed learning was passed down from generation to generation; that learning was a result of guided social interactions in which children worked with their peers and a mentor to solve problems and that cognitive development could only be understood if you take the social and cultural context into consideration (Leonard, 2014:65).

Constructivism is an approach that posits that learning is an active and constructive process. People actively construct or create their own subjective representations of an objective reality (Education.com, 2013). The constructivist view of learning is particularly compatible with the notion of self-direction, since it emphasises the combined characteristics of active inquiry, independence and individuality in a learning task. Unlike approaches such as the Behaviorist, the Constructivist states that learning is an active, contextualised process of constructing knowledge, negotiation, involving the construction and exchange of personally relevant and viable meanings; rather than acquiring about it (Leonard, 2014:66). Each person has a different interpretation of the knowledge process.

For the purpose of this study, the underpinning educational philosophies of preference will be Progressivism and Constructivism. Progressivism encourages a responsive curriculum to the needs of students, industry and society. Constructivism encourages student participants in learning by constructing their own meaning to learning and also by providing their own interpretation to the learning process. Within these educational philosophies the curriculum focus will be responsive to culture and society (Progressivism) in order to improve problem solving and constructing meaning through knowledge (Constructivism). These two educational philosophies were used in developing a responsive curriculum model, displayed and discussed as a recommendation in Chapter 6.

Akinmusuru (2011:1) mentions that educational philosophies are of paramount importance for the development and delivery of a responsive curriculum. He continues by arguing that it has a direct impact on the optimisation of learning. In support of the latter, Akinmusuru (2011:1) mentions that the ultimate purpose of the curricula is to prepare competent individuals, who would solve the pressing needs of society with the knowledge and skills acquired through education and to implement the demands of the academic programs and to get future graduates ready to meet societal needs. Although most lecturers have typically had advanced training in specific disciplines, they usually do not have the training in the methodology of classroom

delivery necessary to achieve maximum learning by the students. According to Ewell (2008:201) most institutions' progress and upward mobility through the various academic units is measured almost exclusively in terms of scholarly research outputs, often with very little consideration for the importance of teaching effectiveness. Akinmusuru (2011:7) concurs with the latter by writing: "Unfortunately when institutional policies are not geared to making student learning a priority, knowledge is not effectively imparted to students and those graduated from these programs soon go into the workforce inadequately prepared to help society". Felder and Brent (2009:3) concur with the latter and propagate that the objectives of each academic program should be at achieving synergy with societal needs, in an on-going and continuous way. The curriculum is the vehicle by which this can be achieved (Akinmusuru, 2011:8).

3.4 Definition of learning and approaches to learning

For the sake of consistency and relevance, it is important to focus on issues such as definitions of learning, the alignment of the curriculum and learning, and the effect of a responsive curriculum on the optimisation of learning. Different learning approaches and also theories to understanding optimisation of learning or deep learning will be explained and discussed. Marton and Tsui (2004) define learning as bringing about a more fundamental change, altering as a person positively. Entwistle and Peterson (2004:411) concur with the latter and define learning as a process of making sense of ideas and relating it to previous knowledge and experiences. Beaten, Kyndt, Struyven and Dochy (2013:15) define learning as a student who can adopt one approach in a certain context and another approach in another context, depending on the characteristics of that context and students' interpretation thereof. Based on the given definition it can be concluded that learning is an activity or process of gaining knowledge or skill by studying, practicing or experiencing something in a certain context.

In understanding students' learning, approaches to learning have often been used as a measure of learning, because an approach is both student and context-dependent (Ewell, 2008). Approach to learning refers to how students are influenced by teachers, the specific learning environment and teaching material, positively or negatively (Khan, 2011:493).

For several decades now, the concept of approaches to learning has been a firmly established concept in educational research literature. Approach to learning originated in the phenomenographic research approach of Marton and Säljö (1997). Matron and Säljö (1997) originally distinguished between a deep and a surface approach to learning. A deep approach is

associated with an intention to understand and an intrinsic interest in the content to be taught (Beaten et al, 2013). Although it has general pedagogical significance, deep learning is particularly crucial in the case of sustainability education, where holistic insight and an ability to organise and structure disparate types of information into a coherent whole are central to the whole exercise. Deep learning involves paying attention to underlying meaning (Khan, 2011). It is associated with the use of analytic skills, cross-referencing, imaginative reconstruction and independent thinking (Beaten et al, 2013:15). To reach this goal the students use deep learning processes, like relating ideas, using evidence of research and seeking for meaning of topics. Most importantly, deep learning is dependent on a student's level of engagement with the topic (Ramsden, 1997; Khan, 2011). Deep learning means to be internally motivated and is associated with an intention to understand, rather than to simply pass an assessment task (Marton & Såljo, 1997). Thus, a priority for teachers must be to provide an environment where students develop a strong personal interest in sustainability issues (Biggs, 1987). Ensuring that learning is made relevant and that the content and teaching styles are varied. Significantly, it is not possible to induce students to adopt a deep learning approach merely by telling them that it is required (Marton & Såljo, 1997; Beaten et al 2013).

In contrast, the intention behind a surface approach in learning processes are limited to rote memorisation and a narrow syllabus-bound attitude and simple description (Biggs, Kember & Leung, 2001). Surface level learning tends to be associated with those students who concentrate on memorising what the teacher said and low level cognitive activities tend to be involved (Marton & Såljo, 1997). It may mean that the student selects and prioritises what they need to learn (Biggs, Kember & Leung, 2001). Surface learning (as its name implies) involves simply 'scraping the surface' of the material being studied, without carrying out any deep processing of the material (Biggs et al, 2001). Students who adopt such a surface approach tend to work according to the following general pattern:

- concentrating purely on assessment requirements
- accepting information and ideas passively
- memorising facts and procedures routinely
- ignoring guiding principles or patterns
- failing to reflect on underlying purpose or strategy (Marton and Såljo, 1997).

Flowing from the work that was done on deep and surface approach to learning, a third approach was defined, i.e. the strategic approach (Entwistle & Ramsden in Beaten et al, 2013:15). Whereas the deep and surface approach describes ways in which students handle a learning task, the strategic approach indicates how students organise their learning (e.g. when, where and how long they learn) (Biggs, et al 2001). Strategic learning is characterised by competitiveness and attempts to maximise academic achievement with minimum effort (Entwistle & Ramsden in Beaten et al, 2013:15). On the positive side, it has been shown that if academic departments that provide good teaching, study support and a choice of content and study methods, are more likely to induce students to adopt a deep learning approach (Ramsden, 1997; Beaten et al, 2013:15). In many instances the educational milieu is still dominated by traditional discipline-based courses and surface approaches to learning are common (Kim, 2011). Traditional conservative university curricula tend to encourage conformity and a narrow intellectual focus (Khan, 2011). While the long-term aim might be to reconfigure entire curricula with education for sustainability in mind, a logical first step will be to introduce relevant material into existing courses (Khan, 2011). After interrogating the different approaches to learning, it is important to establish to which of these approaches can be related to the optimisation of learning.

3.5 Optimisation of learning

Before the optimisation of learning can be established, it is important to first investigate the concept optimisation of learning. One of the challenges academics face when designing pedagogies and curricula is how best to articulate/align the curriculum to optimise student learning and also articulate their own positions regarding the different theories or models of learning, which informs both the process and the design as well as the product (Khan, 2011). The approach that will be followed in this study is to provide a theoretical viewpoint to optimising learning. The following approach was taken from the work of Marton and Såljo (in Khan, 2011), which refers to the student's perspective in approaching his/her studies prior to the outcome of learning and this is known as the phenomenographic or phenomenological theory. The students' motive for learning, affects the way they approach the curriculum, their choice of strategy and this is observed in the interaction between the students, the context and the content of the module (Phan & Deo, 2007).

Biggs (2003) extended the above notion by including the motivations achieved by the teacher and the teaching methodologies employed within the classroom (Biggs 1987; Biggs et al, 2001; Biggs 2003; Phan & Deo, 2007). According to Biggs', (2003) constructivism and students'

approach to learning (see Par.3.3.8), are two strategies that are vital to ensure that successful engagement of content (curriculum) occurs, including that of students motivation and teachers action. The constructivist nature of students' learning thus involves construction of the student's goals and strategies from available information (extended influences) in addition to their own knowledge (internal nature), i.e. the students learn from their experiences (Biggs, 1987; Dewey, 1933; Biggs, 2001). Within this constructivist paradigm students are active in their own learning, but the teacher's role as guide and mediator in the classroom will facilitate improved learning (Biggs, 1987; Biggs 2001). The constructivist student learning approach alludes to the fact that there should be a relationship between the individuals in the class and an all-inclusive approach to learning (McKinney, 2009).

It can be concluded from the above then that the optimisation of learning refers to meaningful engagement of the curriculum and the need to comprehend and understand in comparison to the surface approach which alludes to the less challenging rote learning and memorisation of facts by unmotivated students (Biggs, 2003). Optimisation of learning is best described as activities that encourages students to think critically, analyse, question and at the same time obtain factual knowledge (Biggs, 2003). Optimisation of learning is derived from the assumptions that learning is by nature an active process and that different people learn differently (Phan & Deo, 2007; McKinney, 2009). Based on these assumptions the researcher regards the optimisation of learning as engaging students beyond listening and reading. Promoting learning by encouraging interaction between students and teachers. Developing higher-order thinking skills and to endorse active learning, through collaboration and guidance. It is also important that in order for optimisation of learning to take place the educator has a definitive role to play. Camahalan (2006) in her research alludes to the responsibility of the teacher not only to teach just the context and imparting knowledge but rather to teach students the methodology of engaging with knowledge for better understanding and ultimately for better performance. A significant goal for students is to become self-directed, thoughtful and independent learners, while teachers make teaching and learning more prolific. Efficiency and throughput are often subtly intertwined with reform efforts that look to optimise learning (Khan, 2011). In order to optimise learning Abell (2006) and McKinney (2009) introduces the following actions, namely:

- To provide clear direction that reduces confusion among students.
- Clarifies purpose by helping students understand why they are doing the work and why it is important.

- Keeps students on task by providing structure and pathways to learning.
- Clarifies expectations and incorporates assessment and feedback using models of exemplary work, rubrics and superior work samples.
- Points students to worthy sources that reduces confusion, frustration and
- Reduces uncertainty, surprise and disappointment by offering multiple routes to success.

Felder and Brent (2009) are in agreement with Abell (2006) and McKinney (2009) with the abovementioned actions and introduce what they call activities to optimise learning. These activities include actions such as how to guide students to organise themselves into groups (think-pair-share). The latter means to pose the problem and have students work on it individually for a short time then have them form pairs and reconcile and improve their solutions. Implement actions on how students can answer multiple questions. By asking multiple questions about a course related concept to students, with distractors (incorrect responses) that reflect common student response using personal response systems ("clickers") and display a histogram of the responses. The thinking aloud pair problem-solving (TAPPS) is a powerful technique for helping students work through and understand a problem solution, case analysis, or text interpretation or translation. Debate protocols come in many forms and there does not appear to be one procedure which best suites all classroom venues (Felder & Brent, 2009). According to Firmin, Vaugh and Dye (2007:19) a traditional debate format typically contains first affirmative, first negative, second affirmative and second negative speeches. The utilisation of debate as a classroom technique enjoys a relatively broad range of instructional fields where its application has shown success (Firmin, et al, 2007:19).

Lovell (2012:1) continues the discussion on how to encourage students to optimise their learning. Inspiration to optimise learning by Lovell (2012) means to:

Step 1: Plan, align and prioritise. In this step, it is important to ensure all learning is aligned to stated outcomes, objectives or goals and also that learning design and curriculum are aligned.
Step 2: Performance, instruction feeding into the planning step. In this step it is important to articulate the expected benefit of learning against the outcomes in the planning step. Ensure instruction/teaching is focused with reasonable expectation that it will impact successfully on learning.
Step 3: Design for efficiency and effectiveness. It is important to design solutions which embody best practices in that subject area, select the most appropriate method or methods of delivery

learning. This includes formal and informal, directed and self-directed learning, making full use of technology (e-learning, remote communications tools and social media).

Step 4: Optimise the delivery. What is important in this step is to balance the experience of tried and tested methods with the evidence of latest ideas and practices, to make informed choices about curriculum design.

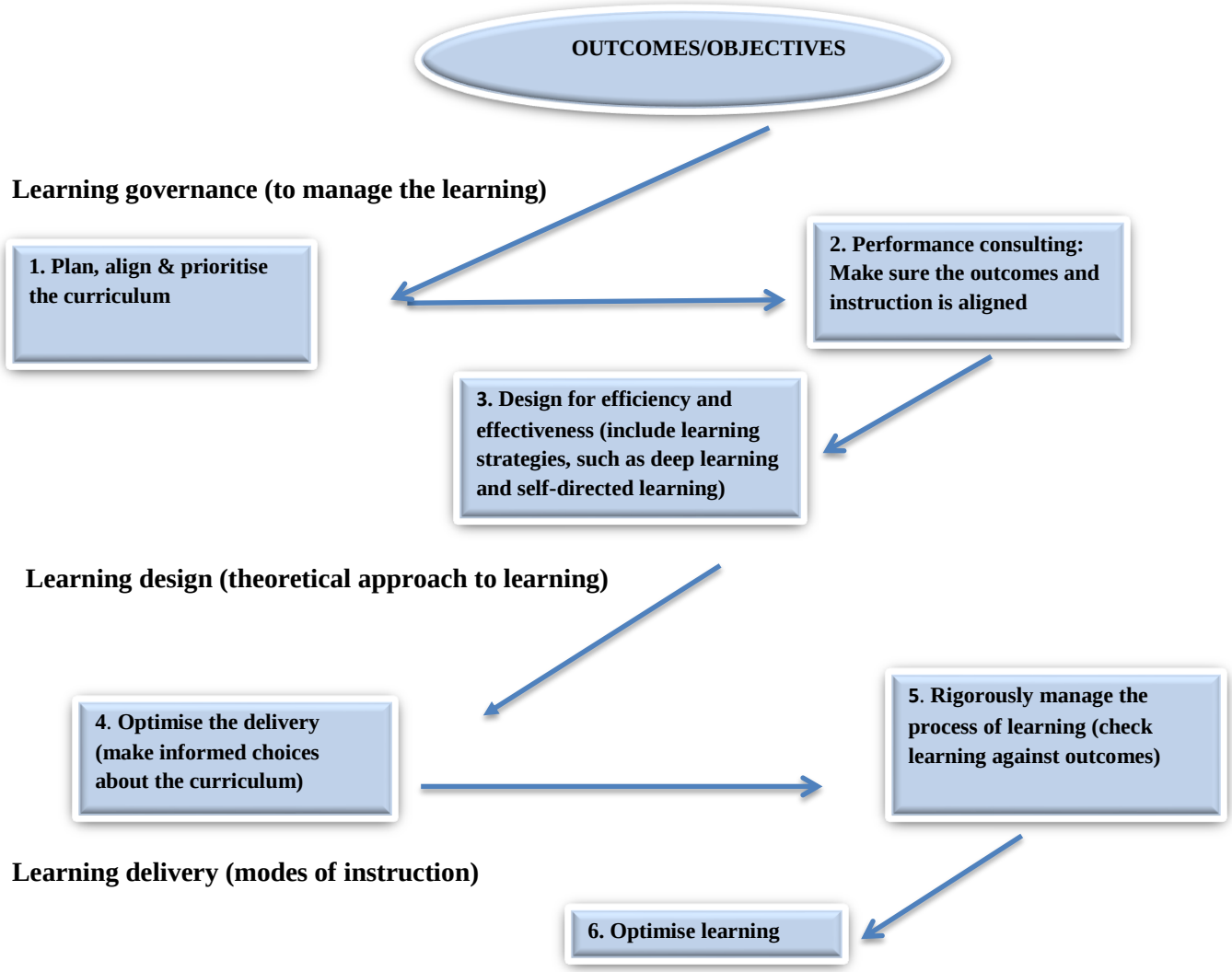
Step 5: Rigorously manage the learning process. Here it is important to constantly check the process of learning against set outcomes and put interventions into place.

Step 6: Embed the learning. Optimise learning means not just making sure the learning is tightly aligned to the needs of the student and the curriculum; it is also about making sure that each learner makes maximum use of what they have learned.

To enhance the abovementioned steps and to optimise learning, Lovell (2012:6) recommends that the following should happen. Discussions between the student and the teacher should take place before the learning event starts. The outcomes for learning should be clear and the expected results should be communicated and recorded. After the learning, supporting/reinforcing materials at set intervals should be issued to learners. Accountability should be improved for the optimisation of learning. Teachers should monitor the achievement of learning outcomes and ensure the learner has a chance to fully use what they have learned. Teachers should encourage collaborative learning and the exchange of experiences across communities of learners.

The following figure 3.2 encapsulates the above information. The figure was depicted from the work of Lovell (2012:4) but for the purpose of this study the researcher adjusted it to the needs of the study.

Figure 3.2: Steps to optimise learning



Source: Adapted from the work of Lovell (2012)

Flowing from the abovementioned information on what optimisation of learning is and how it can be achieved, the researcher deemed it important to explain optimisation of learning in table format. Table 3.1 describes not only the actions of students but the actions of the teachers in the optimisation of learning.

Table 3.1 Actions of students and teachers in optimising learning

Aspects	Teachers' (actions)	Students' (actions)
Learning material	Setting stimulating tasks, encouraging investigations.	Process of engaging with the learning material. Responding positively to the learning material/ curriculum. Understanding and functioning at higher cognitive levels.
Problem-solving	Posing problems.	Dialogue, questioning, reason effectively. Make judgments.
Approach to learning	Introduce students to different learning approaches.	Identify an approach that will optimise learning. Taking ownership for one's own learning. Identifying your own learning style.
Collaboration	Engage team work and communication amongst students.	Work creatively with others. Communicate clearly.

Source: Adapted from the work of Lovell (2012)

Concluding from the abovementioned table it is clear that in order to optimise learning, certain actions are expected from teachers and students. As stakeholders in the learning process both the teacher and student should work together and effectively to ensure that students optimise their own learning. In the table the aspects of engagement with the learning material, the approaches to learning and collaboration are deemed important and relevant in the optimisation of learning.

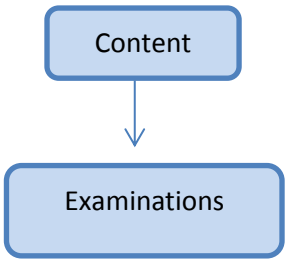
For the purpose of this study and to further the discussion on the role of a responsive curriculum on the optimisation of learning, different curriculum development models will be investigated. The approach of this section is to investigate older curriculum development models, then advance to newer curriculum models and ultimately the researcher displays her own developed model for a responsive curriculum. This model will serve as a recommendation (see Chapter 6, Figure 6.1).

3.6. Models of curriculum development

In this exercise the researcher tried to display the progression that took place as the issue of curriculum development became a contentious topic amongst HE teachers. Ornstein and Hunkins (2009:15) contend that curriculum development encompasses how a curriculum is planned, implemented and evaluated. According to Ornstein et al (2009:15) curriculum models support curriculum developers and designers to systematically and transparently map out the

rationale for the use of the particular teaching, learning and assessment approaches (O'Neill, 2010:1). The most common picture of the curriculum model traditionally used in education merely consists of facts which have to be examined (see Figure 3.3) (Hall, 2010:63).

Figure 3.3 A popular picture for most academics of a curriculum model



Source: Hall (2010)

The figure above is based upon the following three assumptions:

- The assumption that the ability to pass examination is the best criterion for student selection and for judging professional promise.
- Evaluation is education and education is evaluation.
- Knowledge is the accumulation of content and information (Hall, 2010:63).

But although all three assumptions of Figure 3.3 are summarised in the abovementioned, this model permits the asking of two fundamental questions by curriculum designers:

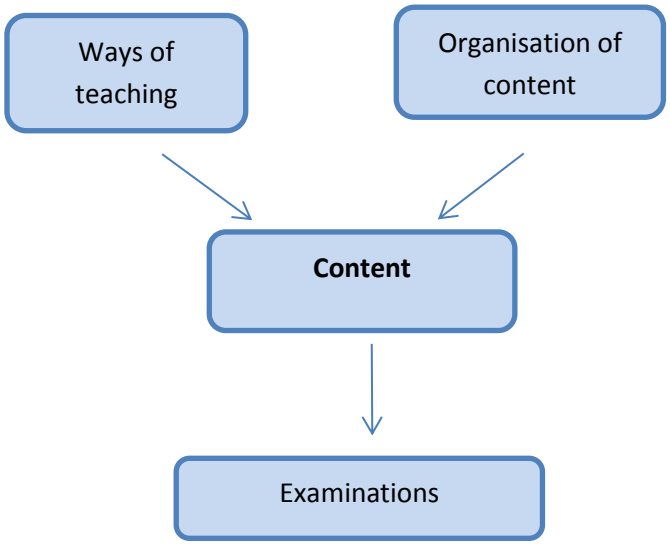
- Why is it necessary to teach this particular content?
- How will the educator know whether they have been successful?

Hall (2010:64) remarks that in order to answer the abovementioned questions it is important to consider the validity and significance of what is being taught, the possible need for balance of breadth and depth, relevance and interest to students of the content. Hall (2010) continues by mentioning that Figure 3.3 ignores the possible way in which learning can take place, the sequencing of subject matter and the hierarchical nature of some knowledge. These important aspects according to O'Neill (2010:2) will not be ignored if questions like the following are considered:

- Why is it necessary to teach this in a particular way?
- How should the content of the subject be organised?

If the abovementioned questions are to be answered the focus can then fall on the improved curriculum model of O'Neill (2010) (see Figure 3.4).

Figure 3.4 An improved curriculum model



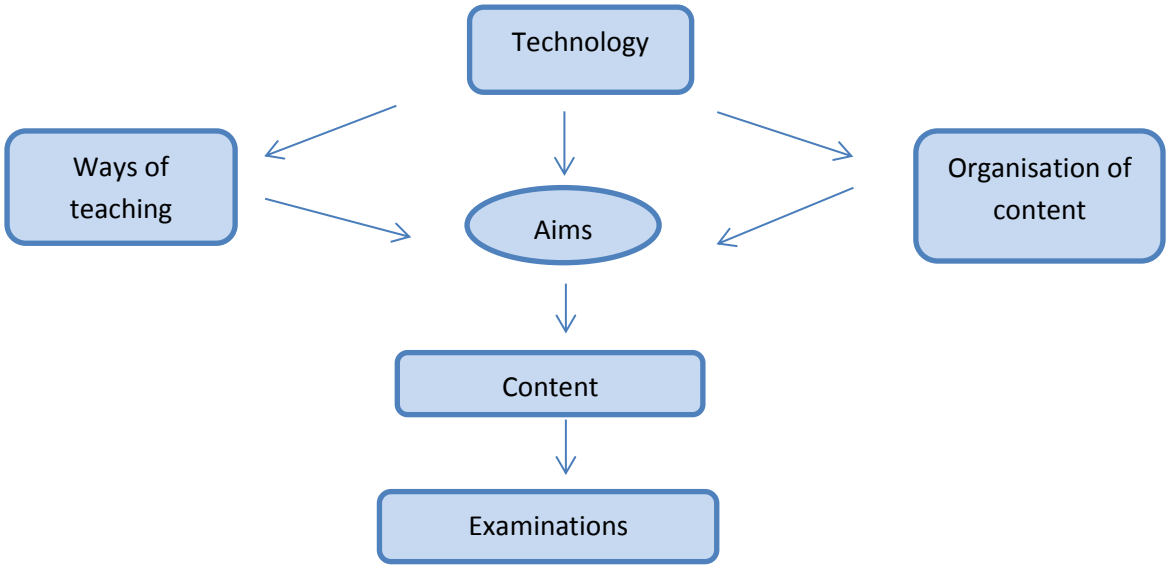
Source: O'Neill (2010)

Although Figure 3.4 is an improvement on Figure 3.3, Figure 3.4 also neglects to ask further important questions like:

- What type of resources will be used?
- Which audio-visual equipment would be helpful?
- What should students be able to do, believe or achieve as a result of this subject?

Figure 3.5 is a further improvement by Hall (2010) to the existing curriculum model of O'Neill (Figure 3.4). This further improvement can be depicted as follows.

Figure 3.5 A further improvement to O'Neill's curriculum model



Source: Hall (2010)

This model shows that teaching, subject content (and its organisation) and examinations all rely on clearly formulated aims (Hall, 2010:66). Gradual changes in tertiary teaching over the last few years have led towards more flexible modes of delivery which incorporates information and communication technologies (Moran, Tinkler, Lepani & Mitchell, 1995). Teachers are looking for a model for flexible delivery, which will provide a template for their curriculum design and how to incorporate more flexibility into the existing curriculum and to provide better access to that curriculum for a wider range of students (Hall, 2010). The curriculum design models for a more flexible delivery as mentioned by Hall (2010), that will be discussed here are: the outcomes-based integrative model; Tyler's model, Wheeler's model, Kerr's model and the process, product and praxis model.

3.6.1 Outcomes-based integrative model

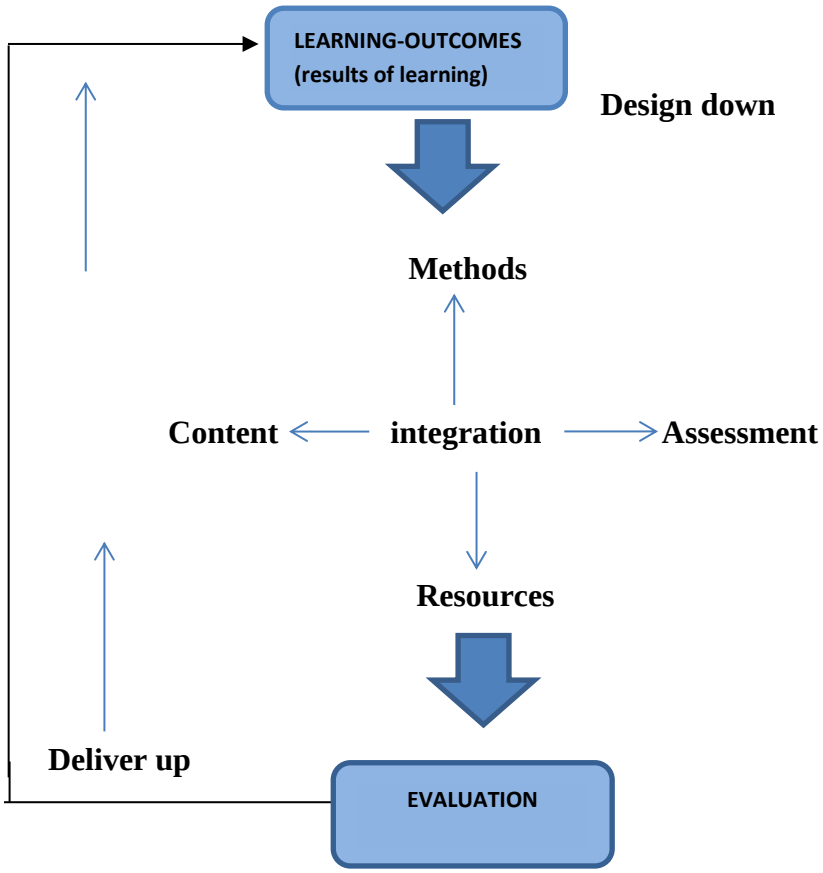
In the outcomes-based integrative model the key words are outcomes-based and integrative (Bell & Lafoe, 1998). It starts with outcomes-based because the designer begins by defining desired learning outcomes in response to the question, "What will the students know and be able to do when they have completed the subject?" Integrative is used because the next step is to integrate the four major elements of the curriculum design: content, teaching and learning method, resources and assessment (Bell & Lafoe, 1998:66). These are developed so that each influences the other and that the design evaluation processes and instruments takes place after all the elements are designed (Sarason, 2009). The elements of importance here are the graduate

attributes (type of qualities students should possess), availability of resources and understanding students learning styles (Sarason, 2009). Outcomes-based education is a student-centred approach and the results oriented design premised on the belief that all individuals can learn (Van der Horst & McDonald, 2007). The strategy of outcomes-based integrative model implies the following:

- What students are to learn is clearly identified.
- Each student's progress is based on demonstrated achievement.
- Each student's learning needs are addressed through multiple instructional strategies and assessment tools.
- Each student is provided time and assistance to realise his/her potential (Bell & Lefoe, 1998).

It can be concluded that in the outcomes-based integrative model the focus is on results of learning (see Figure 3.6). This implies that learning outcomes are expressed and known to all. Expectations are clear and public. Curriculum and instruction maintains a clear focus on culminating outcomes and performances students must demonstrate to graduate. These are significant performances critical for success in life and work (Hall, 2010). The design down from the performances expected of graduates will result into delivering of the outcomes. Courses and learning experiences are focused and built to help students achieve the learning outcomes (Sarason, 2009). Learning experiences are activity-based and allow learners to apply and practise what they learn. There can be multiple paths to the achievement of the learning outcomes. Assessment is standards-referenced and matches the learning outcomes. Students show that they can perform the learning outcome. Student’s progress is based in a demonstration of the achievement of learning outcomes (Sarason, 2009; Hall, 2010).

Figure 3.6 Outcomes-based integrative model



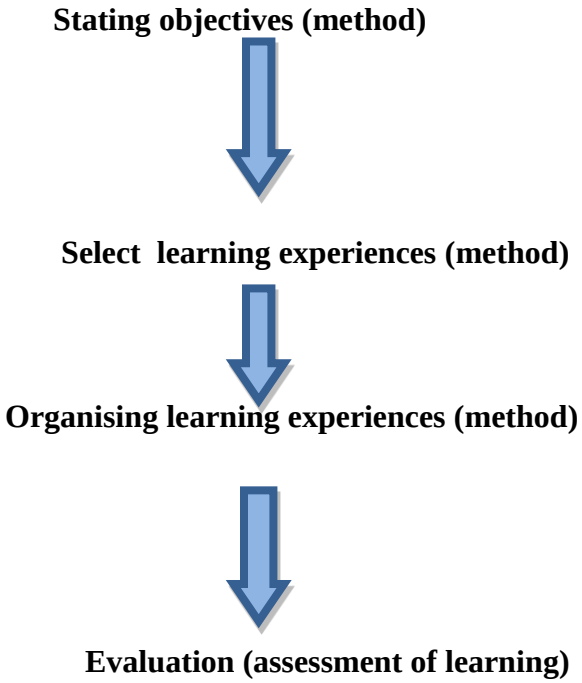
Source: Sarason (2009)

3.6.2 Tyler's curriculum model (Linear objectives model)

Tyler's original curriculum design model of 1949 (Tyler, 1949; Brady, 1995; Bell & Lafoe, 1998; O'Neill, 2010) is often referred to as a 'Linear Objectives' model, (see Figure 3.7 Tyler's linear objectives model). This model is linear in that learning outcomes are specified first followed by the clarification of selected and organised learning experiences. The previous step is also referred to as the method (O'Neill, 2010). This method implies that in the teaching, learning and evaluation of the course, assessment should be included. This model for curriculum development is based on the following questions:

- What educational purposes should higher education seek to attain?
- What educational experiences can be provided that is likely to attain these purposes?
- How can these educational experiences be effectively organised?
- How can there be determined whether these purposes are being attained? (Pandey, 2015:132).

Figure 3.7 Tyler's curriculum model (Linear objectives model)



Sources: Tyler (1949)

3.6.3 Wheeler's curriculum model

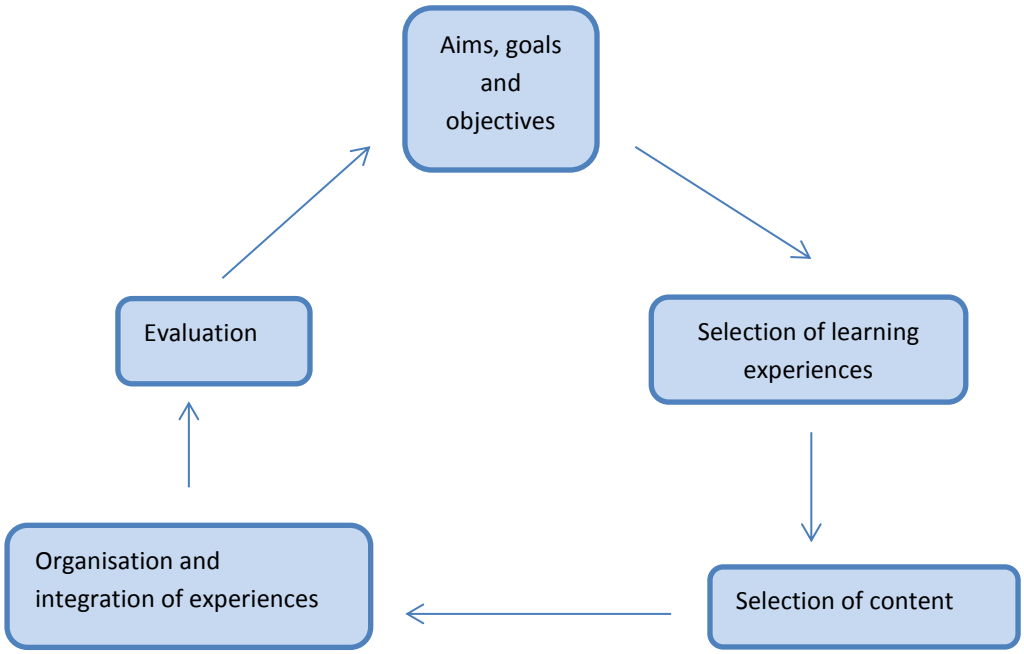
Wheeler's model (1967) for curriculum development is an improvement upon Tyler's model. Instead of a linear model, Wheeler developed a cyclical model. Evaluation in Wheeler's model is not final, but findings from the evaluation are fed back into the objectives and the goals, which influence other stages (Wheeler, 1967; Pandey, 2015:132). Wheeler contends that aims should be discussed, as behaviours refer to the end product of learning which yields the ultimate goals. One can think of these ultimate goals as outcomes (Education.com, 2013). The curriculum design model is based on the following questions:

- What are the role of the aims and goals in the curriculum process?
- How will the aims be formulated?
- How will the content be identified in the curriculum process?

Wheeler concluded in his model that aims are formulated from general to specific in the curriculum planning. This result in the formulation of objectives at both an enabling and

terminal level and the content is distinguished from the learning experiences (Pandey, 2015:132).

Figure 3.8 Wheeler's curriculum model



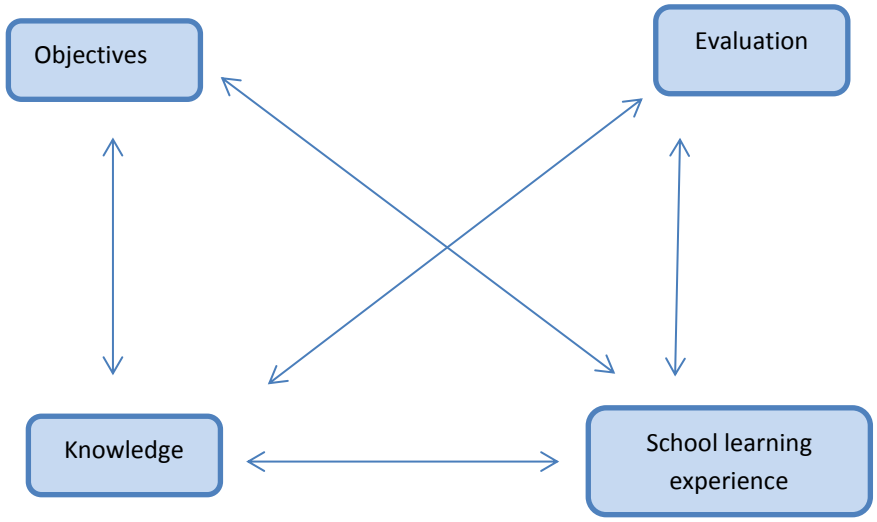
Source: Wheeler (1967)

3.6.4 Kerr's curriculum model

Most of the features in Kerr's model (1968) resemble those in Wheeler's and Tyler's models. However Kerr divided the domains into four areas, namely objectives, knowledge, evaluation and school learning experiences. What should be noted about this model is that the four domains are interrelated directly or indirectly and that the objectives are derived from the school learning experiences and knowledge (Kerr, 1968; Education.com, 2013; Pandey, 2015). In Kerr's model, the objectives are divided into three groups: affective, cognitive and psychomotor. The model further indicates that knowledge should be organised, integrated, sequenced and reinforced. This model is based on the following questions:

- What is the purpose of the curriculum?
- How should the knowledge be structured?
- At which levels should the aims function?
- What are the roles of the educators and students in the curriculum process? (Pandey, 2015:133)

Figure 3.9 Kerr's curriculum model (1968)



Source: Kerr (1968)

3.6.5 The product, process and praxis model

In the product, process and praxis model curriculum development is done on the basis of an individual's values and assumptions about the nature of knowledge, the nature of learning and the nature of teaching. According to Fraser and Bosanquet (2006:279) these values and assumptions are based on the following three orientations: curriculum as product, curriculum as process and curriculum as praxis.

Curriculum as product

In this orientation, the curriculum is approached from a technical interest. In these terms, the function of the curriculum is to define and control student learning (Fraser & Bosanquet, 2006:279). The focus is on setting outcomes, drawing up a plan, applying it and then measuring the outcomes (the product) (Glatthorn, Boschee & Whitehead, 2000:92). Teachers sharing this orientation are more concerned with how the end product and the learning outcomes are achieved than how the curriculum is taught (Fraser & Bosanquet, 2006). The focus is often more on needs assessment, training, implementation, and evaluation with an emphasis on students' producing tangible results that reflect their potential. Pandey (2015) describes the steps in this curriculum process as:

- Diagnosis of need
- Formulation of objectives
- Selection of content

- Organisation of content
- Selection of learning experiences
- Organisation of learning experiences and
- Determination of what to evaluate and of the ways and means of doing it

The useful aspect of the curriculum as product is that it helps to carefully formulate and define the learning outcomes when designing a programme (Fraser & Bosanquet, 2006; Glatthorn et al, 2000). A rigid relationship of power also operates in this learning environment: the one with power constructs the learning outcomes and plans how it will be achieved and evidenced (Fraser & Bosanquet, 2006:280). Once the curriculum has been designed, it becomes external to the designer, with an authority of its own, and it can be taught by anyone who is sufficiently skilled (Fraser & Bosanquet, 2006:280).

Curriculum as process

Viewing the curriculum as a process places the emphasis on the interaction among lecturer, student, and knowledge rather than on a syllabus and/or on an end product (Glatthorn et al, 2000:93). The focus is on considering who the lecturer is, who the students are, what the subject matter is and what the learning environment is, e.g. the articulation gap of students will be considered in the planning process of the curriculum. The emphasis is on developing understanding through thinking about planning, justification of procedures, and actual interventions, as well as providing feedback on changes during the curriculum process (Fraser & Bosanquet, 2006:280). Grundy (1987) sees students as an important part of the curriculum. They [students] are the subject of the curriculum, not its object. Learning and not teaching is the central concern of the lecturer and the critical thinking, reflection, listening, and communication processes of students are important components of a process curriculum (Fraser & Bosanquet, 2006:280).

Curriculum as praxis

The praxis model is making an explicit commitment to emancipation and empowerment (a critical orientation). Grundy (1987:105) states this process goes beyond situating the learning experience within the experience of the student: it is a process which takes the experiences of both the student and the teacher and, through dialogue and negotiation, recognizes them both as problematic. The curriculum is developed through the dynamic interaction of action and

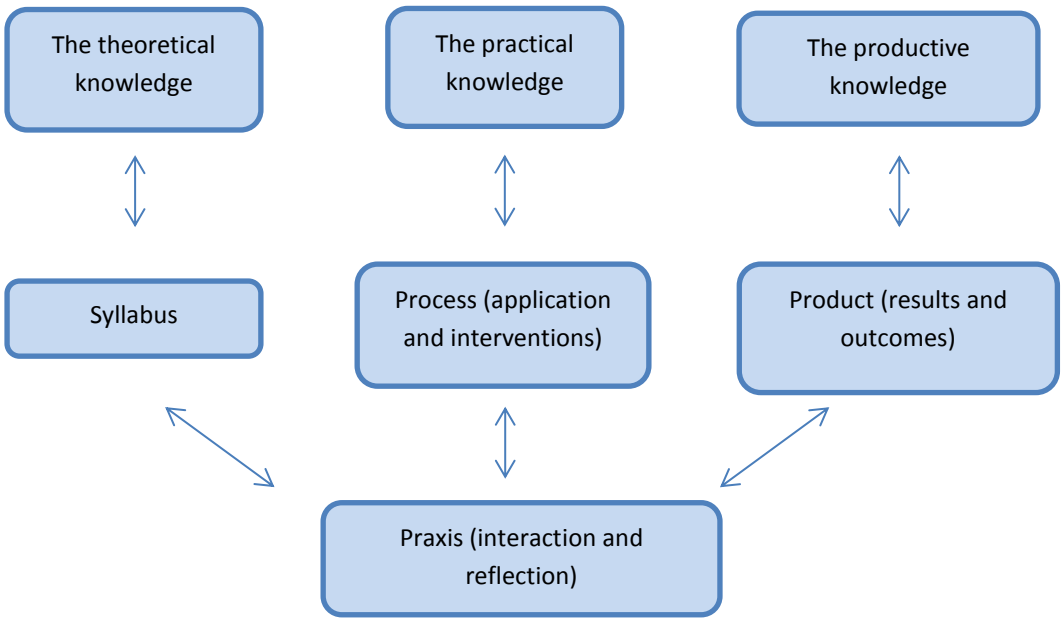
reflection (Fraser & Bosanquet, 2006:280). The curriculum is not simply a set of plans to be implemented, but is rather created through an active process in which planning, acting and evaluating are all an integrated part of the process. Grundy (1987:99) describes curriculum praxis in terms of three principles that serve as the basis:

- Students should be active participants in the learning programme.
- The learning experience should be meaningful to the student.
- Learning should have a critical focus.

The abovementioned model is based on the following questions:

- Has the lecturer taken account of the preparedness, needs and interests of students?
- What is the view of the lecturer about teaching? (This can be influenced by the discipline)
- Who are the students? (responsiveness of students)
- What is the lecturers' interpretation of institutional curriculum goals?
- What do students need to be empowered and emancipated for?
- Whose interests are served by the curriculum?
- What sort of curriculum would promote greater responsiveness, equity, emancipation and social justice?
- What is the nature of power-relations in the teacher-learning context?
- How can power be shared more equitably?
- How can the curriculum take reflection and reworking of conceptual knowledge in consideration?

Figure 3.10 The process, product and praxis model



Source: Fraser & Bosanquet (2006)

In this approach, both students and teachers are encouraged to confront the real problems of their existence and relationships. Only through confronting the real problems of their existence will they be able to face their own oppression (Pandey, 2015:136; Glatthorn et al, 2000; Grundy, 1987). Knowledge created here should be understood as being socially constructed (Education.com, 2013). In this research the preference for curriculum development gravitates towards the process, product and praxis model. This model provides the opportunity for students and educators to engage with one another and also with the learning material. The dynamic interaction between learning and reflection accentuates the researcher's preference for this learning model. Furthermore, the stated questions asked during this curriculum development process, provides the researcher an idea on how to align the teaching and learning strategies, how to address the interplay between the needs of industry and the institution and ultimately develop a responsive curriculum to optimise learning in HE

3.7 Summary

In this chapter the researcher attempted to explain concepts which support the role of a responsive curriculum in optimising learning in HE. In order to achieve the latter, the researcher recognised that the approach should be to discuss issues such as:

- The anatomy (structure) of the concept of responsiveness.

- The approaches and explanation on what responsiveness means in relation to the curriculum.

The work of Moll (2011), Boughey (2009) and Shalem and Slonimsky (2006) were used to explain the phenomenon of a responsive curriculum. Many others in conjunction with the above were also consulted. The latter resulted in a broader understanding of what curriculum responsiveness means and why it is so important for HE to respond to this trend with regards to their curriculums, syllabus and teaching and learning materials. The discernment that in order for a curriculum to be responsive, a theoretical framework should underpin the curriculum design processes. In this chapter the educational approaches such as, Essentialism, Existentialism, Behaviourism, Progressivism, Perrenialism, Reconstructivism, Cognitivism and Constructivism was mentioned. The similarities and differences to the approaches guided the discussions. Learning and the optimisation of learning as important concepts to this study was also mentioned. Deep learning, surface learning and strategic learning as learning approaches were discussed to bring a better understanding of what the concept optimisation of learning means and what its characteristics are. In explaining the characteristics the researcher attempted to highlight the role that a responsive curriculum has on the optimisation of learning.

The approaches to learning and the work completed on it were incorporated in the chapter. The aim was to give a broad understanding of the concept of deep learning. Curriculum design models such as O'Neill's curriculum model, outcomes-based integrative model, Tyler's linear objective model, Wheeler's curriculum model, Kerr's curriculum model and The product, process and praxis curriculum model was unpacked and explained. By doing this the researcher highlighted that in developing a responsive curriculum one should be cognisant of different processes and stages in the curriculum design process.

In chapter 4 the research methodology will be discussed in more depth.

CHAPTER FOUR
Research design and methodology

4.1 Introduction

As discussed in Chapter One, the research study aimed at investigating the role of a responsive curriculum in optimising learning in HE. This chapter describes the research paradigm for the study, its design, followed by process of inquiry, including the research methodology and design. Ethical procedures followed throughout the research are also discussed. In order for a discussion to take place, the research questions that were formulated in Chapter One are revisited. The research questions were as follows:

- Which factors shape and influence the curricula of the South African higher educational landscape?
- What are the characteristics of a responsive curriculum in HE and how can the concept learning be defined?
- How may the curriculum at a selected South African HEI be considered as a responsive curriculum in optimising learning in higher education?
- How can a responsive curriculum model for HEIs be proposed to optimise learning?

4.2 Research paradigm

Paradigms are defined as "a set of assumptions or beliefs about fundamental aspects of reality which give rise to a particular world-view" (Nieuwenhuis, 2007:47) and influence the researcher's choice of approach when answering a research question (Botma et al, 2010). In order to provide a detailed discussion of the research paradigm for this particular study, one needs to understand the philosophical position. The chosen research paradigm is descriptive and interpretative and is grounded alongside these three dimensions: ontology, epistemology and methodology (Creswell, 2014). Ontology refers to the nature and form of reality, which will have various definitions depending on the research methodology and approach to research. According to the qualitative research paradigm, however, reality is socially constructed through subjective experiences (Creswell, 2014). That is, how people's mental ideas and concepts are understood, as well as the deeper meaning attached to social actions (Botma et al, 2010; Nieuwenhuis, 2007). Therefore, Merriam (2009:6) is of the opinion that as reality is socially constructed there can be no "single, observable reality. Rather, there are multiple realities or

interpretation, of a single event". This, in turn, has implications for the epistemological dimensions within the interpretative paradigm, as these multiple realities need to become accessible to the researcher (Kingwill, 2016).

Epistemology is defined as the process in which reality can become known and assumes a "relationship between the knower and the known" (Nieuwenhuis, 2007:55). In order to explore the subjective experiences of others, the researcher interacted with the participants through asking questions about their reality and the meaning they have attributed to the experiences (Henning et al, 2011). As such, the methodology required to facilitate such interaction relies on specific methods (Kingwill, 2016).

The methodology used in qualitative research differs from the more precise, systematic quantitative methods, as qualitative researchers argue that all situations and contexts are unique and different meanings are ascribed to the same event (Nieuwenhuis, 2007; Creswell, 2014). Therefore qualitative methods such as interviews and observations allow for patterns and themes to emerge from the research process (Kingwill, 2016). The emphasis is placed on the participants "views of knowledge, which arise through interaction between researcher and the participant" (Nieuwenhuis, 2007). From the above the researcher chose to use the interpretative and descriptive paradigm as a framework, as the participants' subjective realities and the experiences of the realities were of interest.

4.3 Research design

A qualitative research design was followed in this study. According Taylor (2008) the research design should provide the plan for action. Nieuwenhuis (2007: 70) is of the opinion that a research design is the plan or strategy which moves from the underlying philosophical assumptions and the research to the implementation of the research. It is an essential element of the research study, which consists of various dimensions, including the purpose of the study, the theoretical paradigm and the research methods employed (Creswell, 2009). This study is essentially qualitative in nature. In qualitative research, the numbers and types of approaches have also become more clearly according to Creswell (2014). Creswell (2014:19) mentions that the coverage of research designs is limited to frequently used forms such as surveys and experiments in quantitative research and narrative research, phenomenology, grounded theory, ethnography and case studies in qualitative research; and convergent, explanatory sequential, and exploratory sequential designs in mixed methods research. As a study design, case study is

defined by interest in individual cases rather than the methods of inquiry used (Creswell, 2014). The selection of methods is informed by researcher and case intuition and makes use of naturally occurring sources of knowledge, such as people or observations of interactions that occur in the physical space (Stake, 1998). A case study as mode of inquiry was employed in this study. As this type of inquiry focuses on an in-depth understanding of the experiences of the lecturers and students with regards to a responsive curriculum and the role it plays in the optimisation of learning in higher education. Detailed in-depth data collection methods such as interviews, documents, observations and archival records can be used for exploration and description of the case (Blum, 2010:1). For this study interviews and documents where used as a form of exploration and description of the case. Within this broad research design is phenomenology, a strategy in which the "researcher identifies the essence of human experiences about a phenomenon" (Botma et al, 2010:90). Making use of this strategy has implications for the research methodology, which will be described in more detail below.

4.4 Research methodology

Many scholars (Henning et al, 2011; Denzin & Lincoln, 2003; Richardson, 2002) argue that human learning is best researched by using qualitative data. In selecting a research methodology, Henning et al (2011) suggests that "it's proper to select that paradigm whose assumptions are best met by the phenomenon being investigated". The study is about human learning and the use of a responsive curriculum in facilitating it. The purpose of the study is to investigate without manipulation the role of a responsive curriculum on the optimisation of learning in HE. The focus of the study was on participants multiple perceptions, meanings and processes of the curriculum and its impact on learning. The essential processes in this study included semi-structured interviews of lecturers and students within the department of Informatics in the Faculty of ICT at the Tshwane University of Technology. Document analysis of the study guides and learning material of the subjects Business Analysis III and IV were also done as part of the investigation process. The processes that influenced these experiences and the analysis of the resulting descriptive data were all undertaken by the researcher as a participant in the study. This approach allowed for "narrative descriptions" of the phenomena under study and gave the researcher the opportunity to take into account the views of the participants and multiple interpretations in the group's natural environment. The researcher found a qualitative description of their experiences and an inductive analysis of data as most appropriate for the purpose of this research. Furthermore, constructed knowledge is not truth that remains stable and generalisable

across contexts, rather, it exists within specific contexts and perspectives-knowledge that may profess to be the truth for one context may not be the truth for other contexts (Barnard, 2011:20). However, it has to be noted that the resulting outcomes do not support extensive generalisations; rather, they present the contextual findings that help develop knowledge and understanding in the HE context.

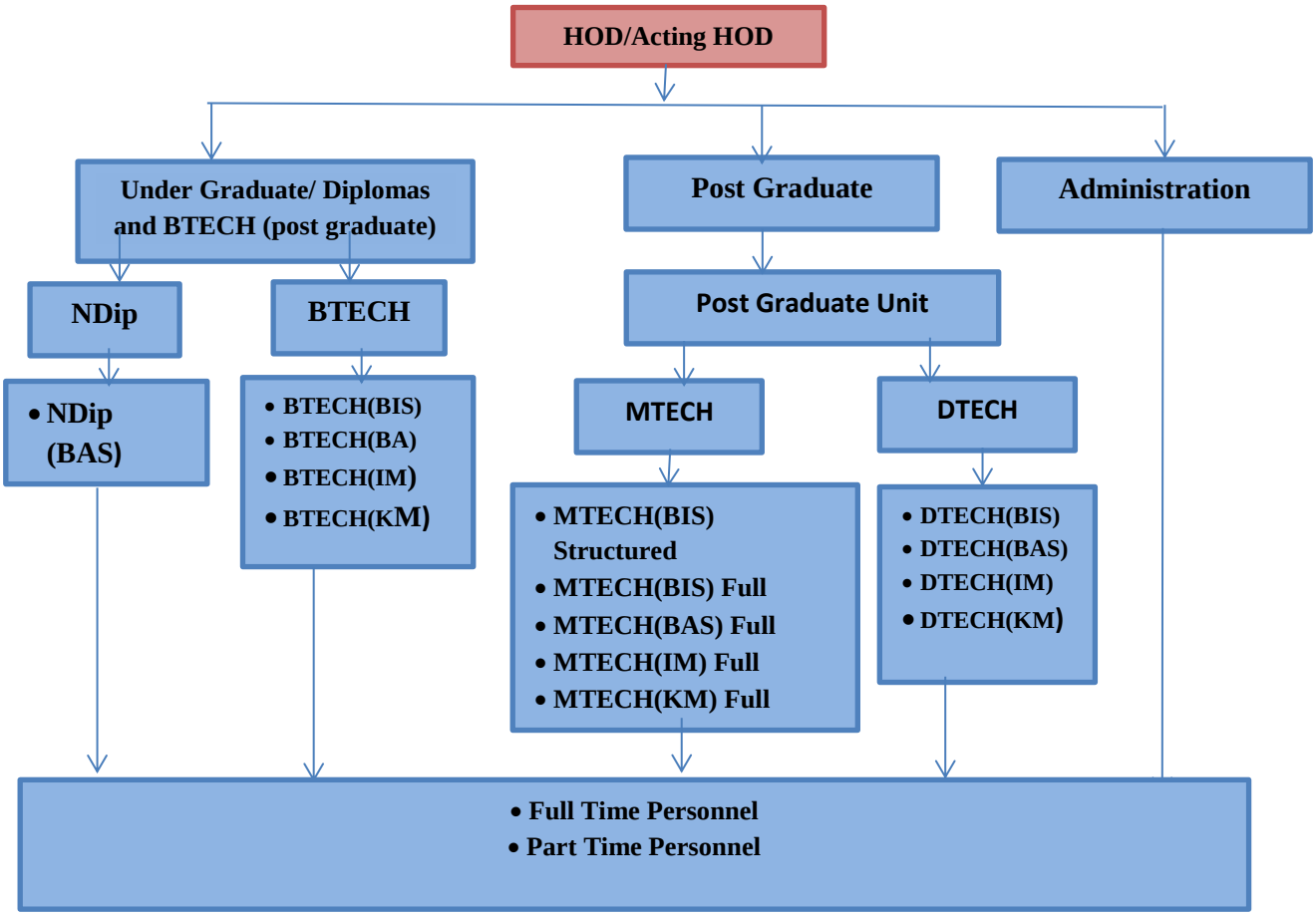
It is also generally recognised that qualitative researchers are concerned with processes rather than simply the outcomes or products. As stated in Chapter One, the research design here relates to the broader 'plan' of how the study was to be executed in order to achieve the desired outcomes. According to Creswell (2010:5) research can be classified under two broader categories, namely qualitative or quantitative design. With this study a qualitative approach is employed that is premised on the assumption that reality subsists in knowledge constructed in a social context by people and that this knowledge is decisive for human interaction, whether individually or socially (Babbie & Mouton, 2008:54). Babbie and Mouton (2008:53) notes that two ontological principles are applied in classifying knowledge of social matters. The first includes concepts, structures or relationships that exist naturally or objectively (objectivism) while the second subsumes concepts, names and labels that are abstractions (i.e. they exist subjectively); hence the principle is described as subjectivism. Objectivism (typically employed with quantitative studies) proceeds from the assumption that social phenomena are intrinsically linked to people in whom the phenomena are expressed. By contrast, subjectivism (typically employed with qualitative studies) proceeds from the opposite view that people are inseparable from the social phenomena in which they are actively involved (Leonard, 2005). Seen from a social constructivist world view, dialogue of experiences can serve to unveil the subjective meanings that people ascribe to the world they live and work in (Creswell, 2010:6).

As in the present instance, a constructivist worldview enables the researcher to interpret the findings of this study in the context of interviews in which the participants relate their experiences with regards to the subject matter (Babbie & Mouton, 2008:272-273; Creswell, 2010:8). The object of the interviews and later the analysis of documents uncover the deeper meaning of subjects (lecturers and students) perceptions of the role of a responsive curriculum in the optimisation of learning.

4.4.1 Context of the research

Botma et al (2010) state that qualitative studies are contextual in nature and cannot be generalised due to the data being valid only for a specific context. The researcher is focused on a specific, single phenomena and the way in which it is socially constructed. The research study is, therefore, contextual, focusing on the role of a responsive curriculum in optimisation of learning in HE. The context of the research is the department of Informatics at the Tshwane University of Technology. The department of Informatics is part of the Faculty of Information Technology and Communications at the Tshwane University of Technology (see Par. 2.7). The department offers a variety of qualifications - from Diplomas to D Tech qualifications. The purpose of the qualifications is to produce individuals who will be able to provide the needed knowledge and skills to function as a junior business/system analyst within any organisation, as all organisations use technology to further themselves (Prospectus of the Faculty of ICT at the Tshwane University of Technology, 2015). This includes the research, identification, analysis, design, development, testing, maintenance and implementation of organisational IT systems to aid innovation, and for betterment of organisational responsiveness, effectiveness and/or efficiency, which improves the social and economic stance of the country. The qualifications are an introduction to the creation of integrated IT solutions to organisational problems and management of those systems by using project management and business analysis methodologies. The following diagram depicts the organogram of the Department of Informatics (Prospectus of the Faculty of ICT at the Tshwane University of Technology, 2015).

Diagram 4.1 Organogram of the Department of Informatics



Source: Human-Hendricks (2014)

Table 4.1 Number of students in Business Analysis III and IV for 2016

Subject Code	Subject Name	Number of students
BUA30AT	Business Analysis IIIA	62 diploma students
BUA30BT	Business Analysis IIB	33 diploma students
BUA401T	Business Analysis IV	106 BTECH students

Source: Human-Hendricks (2014)

Flowing from table 4.1 is that the Department of Informatics offers different qualifications, with different subject codes. The qualifications displayed here are still structured according to the NATED Report 151 for Technikons and not according to the HEQSF. In the previous chapter (chapter 3) the researcher continually referred to the HEQSF and the re-curriculation process which is currently taking place in HEIs in South Africa. The researcher in this study focused on the BTECH and Diploma qualifications, which was purposefully selected (see explanation

below). According to table 4.1 there are 95 diploma students in the subject Business Analysis III and 106 students within the BTECH, Business Analysis IV. Twenty participants from these two qualifications (Diploma and BTECH) were identified, but only 6 BTECH students and 6 Diploma students participated in the study. Reasons why the other students did not participate is explained in the limitations of the study.

4.5 The research methods

The research methods used for this study were selected according to the qualitative research design and research questions. These methods included a pilot study, purposeful sampling techniques and data collection methods (semi-structured interviews and review of documents) and qualitative thematic analysis. Each of the methods will be discussed in further detail.

4.5.1 Pilot study

Leon, Davis and Kraemer (2012:1) explain that a pilot study represents a fundamental phase of the research process and could also be called a 'feasibility' study. It can also be a specific pre-testing of research instruments, including questionnaires or interview schedules (Pilot & Baker, 2002:33-44; Van Teijlingen & Hundley, 2001:1). The researcher compiled semi-structured interview questions based on discussions during workshops with different departments, Heads of Department and programme team work sessions. The main focus of these encounters was with regards to the responsiveness of the curricula and its impact on learning in HE. Also document analysis (study guides and learning material) were used. The pilot study of the current research can therefore be defined as both a feasibility study as well as a pre-testing of interviews and pre-evaluation of documents. During the pilot study the researcher realised that some of the participants was not familiar with the concepts responsive curriculum and its role on the optimisation of learning. After the researcher discovered the latter, she explained the concepts to the participants and continued with the research questions pertaining to these issues, because the research questions formed an integral part of the research.

4.5.2 Sampling

As noted by McMillian and Schumacher (2010:348), the researcher following a qualitative programme seeks to understand a phenomenon as it occurs in a natural setting where the habitual behaviour of participants can be studied without constraint. The participants in this research are third year students (undergraduate students) and BTECH students (post-graduate students) in the

subjects Business Analysis III and IV. The motivation behind selecting the third year diploma and BTECH students was based on the following facts. The six third year Diploma students are in the final year of their studies and have six months of industry exposure, which provides them with insight of the expectations of industry. The six BTECH students are mostly adult learners already in industry. The latter gave these participants an advantage above the Diploma students, because they were in a position to ascertain whether the curricula responded to the needs of industry, society and what they needed to be successful in live. The twelve participants and three lecturers of this study are from the Department of Informatics in the Faculty of ICT at the Tshwane University of Technology. This is purposeful sampling (see Par.1.5.2.3). Purposeful sampling is based on a sample of information-rich cases that is studied in depth. Wiersma (1991:284) maintains that purposeful sampling is based on the assumption that the investigation wants to discover, understand and gain insight and therefore must select a sample from which the most can be learned. To gain insight the researcher decided to investigate the type of curriculum the Department of Informatics offers. The aim of the research is to establish whether the curriculum is responsive to the needs of the students, industry, and society and whether students experience optimal learning. The selected sample comprised of the Department of Informatics; curricula of the subjects Business Analysis III and IV in the Diploma and BTECH qualifications.

Table 4.2 Criteria justifying inclusion and exclusion in the sample

CRITERIA	INCLUSION	EXCLUSION
	• Lecturers in the Department of Informatics at Tshwane University of Technology. • Lecturers teaching subjects Business Analysis III and IV. • Students studying towards qualifications Diploma (Third year) and BTECH with subjects Business Analysis III and IV.	• Lecturers and students from other departments such as Information Technology or Computer Science, as they do not do Business Analysis III and IV as subjects. • Foundation and extended programme students- the year levels which were purposefully selected are third year students and BTECH students. • First and second year students in subjects Business Analysis.

Source: Human- Hendricks (2014)

The purpose of table 4.2 is to illustrate the demarcation of the study and also the criteria for participants to be part of the study. As a Curriculum Development Practitioner, the researcher engages with different curricula and qualifications in the Faculty of ICT.

4.5.3 Data collection

4.5.3.1 Semi- structured interviews

Silverman (2010:87) explains that an interview can be seen as a two-way conversation aimed at discovering what the participant's views, beliefs, ideas and opinions is regarding a certain phenomenon. Interviews are methods of gathering information through oral questions using a set of pre-planned core questions. According to Myers (2002:2) interviews in qualitative research are usually wide ranging probing issues in detail. He goes further by saying that interviews are a verbal process by which individuals describe their experiences of the phenomenon. Silverman (2010:167) concurs with Myers (2002) by arguing that interviewing is a process of finding out what others feel and think about their worlds. Depending on the need and design, interviews can be structured, unstructured and semi-structured with individuals, or may be focus-group interviews (Henning et al, 2011:50).

In this study semi-structured interviews are used, therefore only an explanation of what a semi-structured interview is will be provided. Henning et al (2011) provides an explanation of what a semi-structured interview is. A semi-structured interview is a method which features both structured and unstructured interviews and is therefore both open and closed questions. As a result, it has the advantage of both methods of interview. In order to be consistent with all participants, the interviewer has a set of pre-planned core questions for guidance. As the interview progresses, the interviewee is given opportunity to elaborate or provide more relevant information if he/ she opts to do so.

In this study, participants were interviewed by using a semi-structured interview (participants were interviewed separately) approach to appraise the pedagogical design of the model. Three rounds of interviews were conducted, because of the availability of the participants and also because they were three different interest groups. Three lecturers and 12 (out of 20 that were identified) students were interviewed. The *first round* of interviews was conducted with 6 (out of 10) students that were identified-third year students studying to complete the National Diploma in Business Management and a *second round* of interviews were conducted with 6 (out of 10 students that were initially identified) students studying to complete the BTECH qualification in Business Management. The *third round* of interviews was conducted with the lecturers who were lecturing the subjects Business Analysis III and IV. A list of questions was developed in advance to explore the experience of the participants with the curriculum and its impact on

learning (see Appendix 6). The sole intent of the questions was to explore whether the participants have an understanding of what a responsive curriculum is and how does it impact on the learning. Most of the questions asked were open-ended questions. The questions were formulated based on various sources, including the methodology and models of a responsive curriculum, study guides and material. All the interviews took place within the participant's environment namely at the Tshwane University of Technology and lasted between 40-60 minutes. To recall and remember the interviews all conversations were recorded with the permission of each participant. Also, hand-written notes of the interviewees' responses were documented throughout the interviews. The researcher assured all interviewees about the confidentiality of the information given. The participants were also thanked for their participation and informed about the report with research results that can be obtained from their HOD. All interviews were transcribed, analysed and are discussed in the next chapters (see Appendix 6.1). Table 4.3 provides an elucidation of the character of the interviews.

Table 4.3 Elucidation of character of interviews

	PURPOSE OF THE INTERVIEWS To gain insight into the participants' understanding of what a responsive curriculum is and its role on the optimisation of learning.
INTERVIEW 1: Diploma students INTERVIEW 2: BTECH students Students in Business Analysis III and IV (12 respondents)	**EXAMPLE OF THE INTERVIEW QUESTIONS** **Taking your encounter with the curriculum in consideration, please answer the following questions:** What are your main impressions of the curriculum? Do you understand the purpose and the intent of the curriculum? Do you regard the curriculum as structured and developmental (here think about the alignment of the learning and teaching material, the pre-scribed text books and study guides)? Do you experience the curriculum responsive to your needs, the need of the society and industry? Are the outcomes clearly structured within the curriculum? Is the curriculum emotionally and intellectually stimulating? Does the curriculum identify essential skills and competencies to help you in optimising your potential and to be relevant in industry? Would you regard the curriculum as relevant? Is there any other thing you would like to mention with regards to your experience with the curriculum?

INTERVIEW 3 3 Lecturers in subjects Business Analysis III and IV	**EXAMPLE OF INTERVIEW QUESTIONS** **Taking your context into consideration, please answer the following questions:** What is the purpose of a curriculum? What is your involvement in the designing of the curriculum (development of study guides, learning and teaching material and content of courses)? Who is involved in designing the curriculum? Do you think it is important for the support structures to be involved in the development and design of the curriculum? Why? Do you regard the curriculum as responsive to the needs of industry, society, culture and the students? How involved is industry, society and students in the development of the curriculum? Would you regard the curriculum as developmental and inclusive? Does the curriculum provide the opportunity for the students to optimise their learning potential? How frequently is the curriculum qualities assured and are you involved in this process? Do you think curriculum development procedures are more emphasised than the lecturer's own initiatives? Is there anything you would like to mention with regards to the purpose of the curriculum?

Source: Human-Hendricks (2014)

4.5.3.2 Document analysis

Babbie and Mouton (2008:300) explain that personal documents can be seen as an instrument through which a person gets to know the respondent and his or her beliefs and views on the relevant topic. Document analysis is a systematic procedure or reviewing or evaluating documents, both printed and electronic (computer-based and internet-transmitted) material. Like other analytical methods in qualitative research, document analysis requires that data be examined and interpreted in order to elicit meaning, gain understanding and develop empirical knowledge (Corbin & Strauss, 2008; Rapley, 2007).

Documents contain text (words) and images that have been recorded without a researcher's intervention. To emphasise the latter, Silverman (2010:160) writes that the aim of document analysis is to understand the participants' realities. A document is any substance that gives information about the investigated phenomenon and exists independently of the researcher's actions. It is normally produced for specific purposes other than those of research, but it can be used by the researcher for cognitive purposes, e.g. letters, newspapers, diaries and websites (Corbetta, 2003). Corbetta also identified a number of advantages of the documents over other research methods, firstly, it is a non-reactive technique where the information given in a document is not subject to a possible distortion as a result of the interaction between the

researcher and the respondent; secondly, it helps the researcher to study the past; thirdly, it is a cost-effective method as information has already been produced.

Document analysis is often used in combination with other qualitative research methods as a means of triangulation 'the combination of methodologies in the study of the same phenomenon' (Denzin & Lincoln, 1998: 291). Documents can serve a variety of purposes as part of a research undertaking. Documentary materials according to Bowen (2013:29) have these five functions:

- It provides data on the context within which research participants operate.
- Information contained in documents can suggest some questions that need to be asked and situations that need to be observed as part of research.
- Documents provide supplementary research data. Information and insights derived from documents can be valuable additions to a knowledge base.
- Documents provide a means of tracking change and development.
- Documents can be analysed as a way to verify findings or corroborate evidence from other sources.

However, documents may have some limitations in terms of accuracy and completeness of the data (Bowen, 2013:30). Below is a table to explain the advantages and limitations of document analysis.

Table 4.4 Advantages and limitations of document analysis

Advantages	Limitations
Efficient method	Insufficient detail
Availability	Designed for another purpose other than research
Cost-effectiveness	Low retrievability
Lack of obtrusiveness and reactivity	Biased selectivity

Source: Bowen (2013)

Taking the information in table 4.4 into consideration, the following documents were critically analysed:

- Study guides of Business Analysis III and Business Analysis IV of the Department of Informatics

- Examination papers and memoranda of the abovementioned subjects
- Teaching and learning material (presentations of lessons and lecturer notes) of the abovementioned subjects.

The data gathered from the document analysis were used to corroborate the findings of the interviews. These documents were of great value to this study, because it enriched the researcher's understanding of the role of a responsive curriculum in the optimisation of learning in HE.

4.6 Data analysis

Qualitative data analysis can be seen as an inductive process whereby a set of information is broken up into smaller parts in order to produce a claim or principle from an observed occasion (McMillian & Schumacher, 2010:367). Babbie and Mouton (2008:308) defines qualitative data analysis as the "non-numerical examination and observation for the purpose of discovering underlying meanings and patterns of relationships". The aim is not to measure but to interpret and make sense of the information gathered (Nieuwenhuis, 2009:100). This could only be achieved by collecting textually rich data in the form of documents, transcripts and the like (Nieuwenhuis, 2009:101). According to Cohen et al (2001:147), data analysis involves organising, accounting for, and explaining the data; in short, making sense of the data noting patterns, themes, categories and regularities. They further suggest that early analysis will reduce the problem of data overload as huge volumes of data rapidly accumulate in qualitative research. Henning et al (2011) agree to this practice as they believe continuous analysis of data keeps control of the project and reflects on the approach and design of the project as well as informing the next data gathering process. To analyse interviews as qualitative data, one has to realise it is more of a reflexive, reactive interaction between the researcher and the de-contextualised data that are already interpretations of a social encounter (Cohen et al, 2001:282; Henning et al, 2011).

McMillian and Schumacher (2010:461) argue that data analysis is primarily an inductive process of organising data into categories and identifying patterns (relationships) among them. Richards (2006:84) sees data analysis as a process of coding the data, for recording of exploratory categories, and for management and exploration of category systems as well as coding for credibility exploration. He continues by writing that data analysis is a process whereby the researcher should allow him/herself time for writing, rewriting, revisiting the data and verifying

conclusions. Merriam (2009:181) writes that the researcher must first read the field notes, interview scripts and collect the documents while the information is categorised.

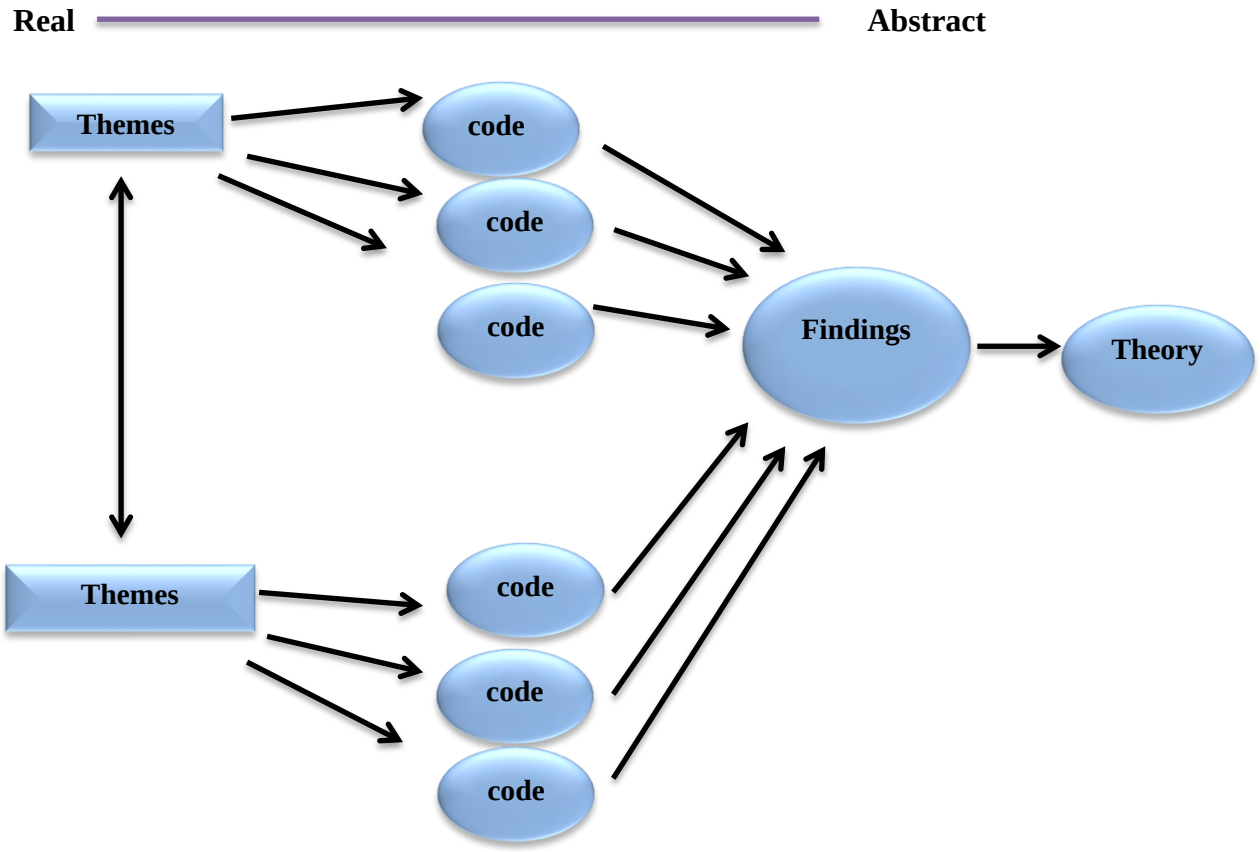
Collected data was analysed by using the interpretative and descriptive methods as opposed to a statistical analysis method. This will involve examining and organising notes from semi-structured interviews and document analysis and reducing the information into smaller segments from which the researcher can see patterns and trends. In addition, the researcher will interpret the meanings of these patterns and trends.

The following questions guided the analysis process:

- Which factors shape and influence the curricula of the South African Higher educational landscape?
- What are the characteristics of a responsive curriculum in HE and how can the concept learning be defined?
- Can the curriculum at a selected South African HEI be considered to be a responsive curriculum?
- How can a responsive curriculum model for HEI be proposed to optimise learning?

In addition to the abovementioned questions guiding the data analysis process, the researcher also implemented a method of thematic analysis. The latter was guided by the streamlined inquiry approach from the work of Salanha and O'Brien (2014). The streamlined inquiry process means some categories may contain clusters of coded data that merit refinement into subcategories. Here follows an illustration of the mentioned practice.

Figure 4.2 A streamlined codes-to-theory model for qualitative inquiry



Source: Salanha & O'Brien (2014)

The purpose with this type of approach was to contribute meaning to collected data, to reflect on the collected data and to construct theories about how the themes relate to literature. In order to influence the correct outcome, Henning et al (2011) suggests different coding techniques in qualitative research, namely, descriptive, topical and analytical coding. In the table below follows a detailed explanation of the coding techniques.

Table 4.5 Explanation of coding techniques

Techniques	Explanation
Descriptive coding	Rough codes are assigned of a research question before being refined and shaped into firmly grounded codes. It involves storing information, about cases being studied.
Topical coding	Is labelling the text according to its subject. Putting the data where it belongs. This type of coding can be used early in the research because it requires relatively little understanding of the situation.
Analytical coding	Analytical coding is the interpretation of the topical and descriptive coding. It reflects on the data and gives meaning to the collected data. It is central to qualitative inquiry. This is the coding that leads to theory and theory affirmation.

Source: Henning et al (2011)

In this study the researcher decided to use all three coding techniques and decided to categorise them as follows.

- **Descriptive coding** refers to the gender, age, experience and jobs of the participants. The participants in the study according to the latter were grouped as follows.

Table 4.6 Clustering of the participants

Activity interviews)	Participants (groups)	Description
Round 1	Lecturers (3)	2 Females 1 Male Working experience ranges from 3-20 years
Round 2	Diploma students in Business analysis III (5)	3 Male students 3 Female students Full time students in the final year of their diploma studies
Round 3	BTECH students (6)	2 Male students 4 Female students Part-time students These students have an array of jobs and are currently completing their honours qualification to become Business Analysts

- **Topical coding.** The following topics were identified during the research process. These topics might change or be clustered together as the interpretation and analysis process proceeds. They are:

Theme: Responsiveness of the curriculum

Code: Intent and purpose of the curriculum is clear

Code: Curriculum is inclusive and developmental (only for the lecturers)

Code: Curriculum is responsive to the needs of industry, society and student needs

Code: Impression of the curriculum (only for the students)

Code: Relevance of the curriculum (only for the students)

Theme: Impact (optimisation) on learning potential

Code: Curriculum provides opportunities for students to optimise their learning (only for the lecturers)

Code: Curriculum procedures versus lecturer creativity (only for the lecturers)

Code: Essential skills and competencies are acquired (only for the students)

Code: Curriculum is intellectually and emotionally stimulating (only for the students)

Code: Curriculum is structured and developmental (only for the students)

Code: Outcomes are clearly structured (only for the students)

Theme: Standard of curriculum

Code: Improvements to be made to the curriculum

Code: Challenges of the curriculum

Code: Quality assurance is done (only for the lecturers)

Code: Involvement in the developing the curriculum (only for the lecturers)

Code: Role of the support staff (only for the lecturers)

- **Analytical coding**. This refers to coding that comes from interpretation and reflection on meaning. According to Creswell (2009) and Salanha and O'Brien (2014) this type of coding is the hardest and also the most rewarding type of coding. They argue that rather than to just store the information or name the topic of the text, categories are created and new ideas are expressed about the data. In this study analytical coding was done by interpretation of the transcription of the semi-structured interviews and the documents (study guides, learning material) provided by the participants.

Once the researcher had completed the abovementioned processes the final themes and codes were used as the basis for the study, from which the conclusions were drawn.

4.7 Data verification

According to Henning et al (2011:10), two domains need to be considered when developing a qualitative research design: the criteria of trustworthiness and demonstrating that the proposed work would be useful to the conceptual framework and the initial research questions. The criteria for trustworthiness of qualitative research are related to, but defined very differently from those in the research tradition (Leonard, 2005:146). Denzin and Lincoln (1998), Babbie and Mouton (2008:276) and Henning et al (2011:3) describe four main criteria for trustworthiness, i.e. credibility, transferability, dependability and conformability.

4.7.1 Credibility of the study

Denzin et al (2003:240) explain that the term credibility in qualitative research design replaces the terms validity and reliability applied to the positive stance in quantitative research designs. In essence, validity in a quantitative design implicates the accuracy of data when an instrument measures what it is supposed to measure. In qualitative research, credibility (as an alternative to validity) is established by using different ways to ensure the accuracy of data. Denzin et al (2005:25) add that these "ways to ensure accuracy of data typically relies on interviews and document analysis". Kimberlin and Winterstein (2008:2278) and Cohen et al (2001) refer to validity and reliability in qualitative research and do not use the terms "credibility and trustworthiness". They regard credibility as an important aspect of qualitative research to ensure that a particular instrument measures what it is supposed to measure. A study may be declared reliable if findings from a particular group are replicated when a similar group in a similar context is investigated.

Noble and Smith (2015:3) asserted that "an account is valid or true if it represents accurately those features of the phenomena that it is intended to describe, explain or theorise". Insofar, credibility is concerned with two main issues: whether the instruments used for measurement are accurate and whether they are actually measuring what they measure (Henning et al, 2011).

The following strategies were deployed with a view to validation.

4.7.1.1 Credibility in the literature review

The literature study (see Chapters 2 and 3) produced detailed information regarding the structure of responsiveness and a responsive curriculum. To further highlight the role of a responsive curriculum, different curriculum design models and educational theories were discussed. The concept of optimisation of learning and its relationship to a responsive curriculum was also discussed as part of the literature study.

4.7.1.2 Credibility of the data collection

The participants' interviews were audio-taped. During the taping of the interviews the researchers made notes and these notes were comprehensively integrated before any findings were documented. As low-inference descriptors are the very essence of a qualitative study (McMillian & Schumacher, 2010:331), verbatim quotes of participants' responses were utilized

to ensure close adherence to raw data, avoiding inferential drift. This strategy enhanced the interpretive credibility of the study.

In terms of the current research, credibility was achieved by undertaking multiple methods to investigate the problem from different angles and strengthen the credibility of the findings. Methods such as semi-structured interviews with a purposeful sample and document analysis to cover the entire issues related to the study and increase the probability of generalisation. Moreover, all the questions posed in the semi-structured interviews were directly linked to the research aim and objectives and covered all aspects of the topic. Data was also transcribed and analysed with a high degree of accuracy.

4.7.2 Transferability

Research findings are transferable or generalisable only if they fit into new contexts outside the actual study context. Transferability can be defined as "the assertions of enduring value that are context–free" (Bowen, 2013). Transferability is analogous to external validity, that is, the extent to which findings can be generalised. Generalisability refers to the extent to which one can extend the account of a particular situation or population to other persons, times or setting than those directly studied (Maxwell, 2010:45). Transferability is considered a major challenge in qualitative research due to the subjectivity from the researcher as the key instrument, and is a threat to valid inferences in its traditional thinking about research data. However, a qualitative researcher can enhance transferability by detailing the research methods, contexts, and assumptions underlying the study (Leonard, 2005:126). Seale (1999:45) and Leonard (2005:126) advocate that transferability is achieved by providing a detailed, rich description of the setting studied to provide the reader with sufficient information to be able to judge the applicability of the findings to other settings that they know. Kalof, Darn and Dietz (2008) added two strategies to achieve the generalizability of research findings: clear description of sample selection criteria and rich description of the research site. Both strategies and also additional strategies were employed in this study. This chapter provided a thick description of sampling procedures and selection criteria has been provided (see Par. 4.5.1 and 4.5.2). This chapter also provided detailed information about the research site in terms of the procedures undertaken to achieve the aim, the objectives of the research and the research methods used along with the data analysis techniques.

4.7.3 Dependability

According to Marshall and Rossmann (1999:145), dependability provides the qualitative researcher with a solution for the positivist notion that the universe is not changing and that the research could be replicated perfectly. The qualitative research tradition assumes that research occurs in an ever changing social context (Babbie & Mouton, 2008:276). Dependability thus also accommodates the researcher's understanding of the research phenomenon. According to Merriam (1998:205), it refers to the extent to which the research findings can be replicated with similar subjects in a similar context. It emphasises the importance of the researcher accounting for or describing the changing contexts and circumstances that are fundamental to consistency of the research outcome. According to Seale (1999), Babbie and Mouton (2008), Yin (2012) and Henning et al (2011), dependability can be achieved through auditing which consists of the researcher's documentation of data, methods and decision making during a thesis as well as its end products. Auditing for dependability requires that the data and descriptions of the research should be elaborate and rich. In this research dependability is achieved through the researcher's knowledge of what a responsive curriculum entails, also through the engagement with documentation and the analysis there of.

4.7.4 Conformability

Conformability is the degree to which the research findings can be confirmed or corroborated by others (Henning et al, 2011). It is analogous to objectivity, that is, the extent to which a researcher is aware of or accounts for individual subjectivity or bias. Seale (1999:45) argues that auditing could also be used to establish conformability in which the researcher makes the provision of methodological self-critical account of how the research was done. In case of this study all collected data from the semi-structured interviews (audiotapes and notes) and documents will be archived in a retrievable form and will be made available to other researchers if the need arises or findings are challenged.

4.8 Data verification strategies

In order for the above criteria of trustworthiness to be achieved, it is essential for the researcher to implement the relevant data verification strategies. The strategies implemented in this research will be discussed below.

4.8.1 Triangulation

Triangulation is a strategy that can be used to strengthen the credibility of the research findings (Atkinson & Coffey, 2004). Silverman (2010:821) and Decrop (1999) indicated that triangulation can reduce and/or eliminate person and methodological biases and increase the probability of generalising the findings of a study as the data is gathered from different angles and methods. In respect of the present research, data and methodological triangulations had been accomplished through collecting the data from different sources and by using multiple methods, including semi-structured interviews and document analysis with regard to the role of a responsive curriculum on the optimisation of learning in HE. The use of multiple methods assisted in data triangulation and at the same time was an effective way to overcome most of the weaknesses of each method used (Gay, 2002). Silverman (2010) explain that four types of triangulation are found, namely:

- Data triangulation (i.e personal experiences of participants measured against data gathered from other people that are more compelling than those of the participants),
- Investigator triangulation (different investigators are used in order to elicit researcher effects on a study),
- Theory triangulation (interpretation of findings measured against multiple theoretical perspectives)
- Methodological triangulation (multiple methods i.e. interviews and documentation are used to study a single phenomenon).

In this study, methodological triangulation such as interviews and document analysis was utilised due to the rigor, richness and depth that these types of methodology offer in securing the credibility of the inquiry (Silverman, 2005). Another advantage of methodological triangulation is that the research design can be strengthened and also that it may help the researcher to produce more valid and reliable findings (Silverman, 2010). Understanding of the curriculum and its development as well as learning are complex processes. To understand the role of a responsive curriculum in optimising learning requires the complex interaction between different variables. These variables included the theoretical, educational frameworks, models of curriculum design, learning approaches and assessment of learning.

4.8.2 Audit trail

Merriam (2009) along with Taylor and Francis (2013), postulate that an audit trail or auditability allows other researchers to use a similar approach and reach similar comparable conclusions. An audit trail is a description of the researcher's decision making process with regards to data collection and data analysis used in the research study. Botma et al (2010) agree with Merriam (2009) that an audit trail allows other researchers to examine this audit trail, to determine the extent to which the study achieved consistency. In the research report, Chapters Four and Five detail the research process and data analysis and provide the audit trail.

4.8.3 Peer examination

Another strategy used to ensure trustworthiness is peer examination or peer reviews (Botma et al, 2010). Inherent in the completion of a thesis is supervision, whereby the researcher's work is reviewed and commented upon. In addition, members of the faculty may be co-supervisors or critical readers, offering further feedback. Once the thesis is completed, an external examiner will review the final product to assess whether the findings of the research are indeed plausible based on the data collected. Receiving feedback allows for different perspectives as well as the identification of areas of concern (Merriam, 2009).

4.8.4 The role of the researcher

McMillian and Schumacher (2010:348) and Henning et al (2011) describe the role of the researcher as a partial participant to the study, when the researcher fills a position on the staff of the organisation or when the researcher has membership to the group (insider/outsider relationship). This type of researcher role can be beneficial for the study because the researcher will firstly have a greater understanding of the culture being studied; secondly not alter the flow of social interaction unnaturally; and thirdly have an established intimacy which promotes both the telling and the judging of truth. Further, insider-researchers generally know the politics of the institution, not only the formal hierarchy but also how it "really works". They know how to best approach people. In general, they have a great deal of knowledge, which takes an outsider a long time to acquire (Henning et al, 2011). The researcher of this study is the Curriculum Development Practitioner of the Faculty of ICT. She forms an integral part of the management team. This function is beneficial as a partial participant (insider role), as it provides the researcher the means to build trustworthy relationships with the participants and also to reflect

on her own beliefs and assumptions and on the way in which these may influence the research process and conclusions reached in the study (Kingwill, 2016). This may be done through reflective notes (Merriam, 2009). Reflective notes may include the researcher's personal thoughts about the strategies and methods used, making sense of interviews, as well as reflections on his or her own perceptions or feelings while in the field (Botma et al, 2010; Denzin & Lincoln, 2005; Merriam, 2009). The researcher's reflections of her positions and beliefs are illustrated and discussed throughout the research report.

4.9 Ethical considerations

To ensure that the study adhered to the research ethics requirements, application for ethical clearance was requested from the Ethics Committees of the University of South Africa (UNISA) (see Appendix 5) and as well as from the Ethics Committee of the Tshwane University of Technology (TUT) (see Appendix 5.1). These applications were submitted after the proposal was approved by the Ethics committee of the College of Education at UNISA and before fieldwork was conducted. Issues addressed in the application involve the sensitivity level of the research activities, the research approach, design and methodology, including full details regarding the participants, voluntary participation, informed consent, confidentially, anonymity and risk. The participants were invited to take part in the study and were informed about the purpose, the aim and objectives of the study. The information leaflets provided to participants informed them about their participative roles and that they could withdraw at any stage. After joining the study, the participants signed a letter of informed consent (see Appendix 4). The letter highlighted the purpose of the study, the procedures to be followed during the investigation, the possible advantages and disadvantages as well as information regarding confidentiality, anonymity and possible risks involved in taking part in the study. In order for the study to be completed, the ethical committee of the Tshwane University of Technology, the Departmental research committee and the higher education support research committee required that the researcher obtain prior approval to conduct research in any Faculty at the university. The researcher submitted a letter of request (see Appendix 1) and obtained permission from the Faculty of ICT to conduct the research and interview the lecturers and students (see Appendix 2). Consent forms were completed by all participants (see Appendix 3 & 4).

The interviews were audio-taped in order to have a clear and accurate record of all events and verbal communication. It is highly unlikely that any students were physically or psychologically

harmed during the research. It is important to notice that a respondent may be considered anonymous when the researcher cannot identify a given response with a respondent (McMillian & Schumacher, 2010). To ensure anonymity and confidentiality the participants were not expected to identify themselves publicly and although their names were known, they were kept confidential at all times. The signed consent forms served as a further guarantee to the participants regarding the anonymity and confidentiality of the study. The interviews took place in a private environment. The audio-tapes and field notes of the interviews or document analysis are only available to me.

4.10 Confines of the study

This study focused on the experiences of students and lecturers in the Department of Informatics, at the Tshwane University of Technology. Access to the department was dependent on the approval and permission of the Dean of the Faculty of ICT and the Head of Department of Informatics, as well as the TUT ethical committees and the cooperation of the twelve students and three lecturers. As data were gathered from a very small number of lecturers and students, generalisation of the results are impossible. Generalisation was not an aim of the study. However, McMillian and Schumacher (2010:326) expresses the view that a single case studied in depth may yield radical insights that could shed important light on the research problem to an extent that it could serve as a resource for further research.

4.11 Summary

This chapter has detailed the theoretical and practical approach and rationalises the different decisions and processes undertaken throughout the research journey. The interpretative approach was identified for the framework of this study and also the design strategies underpinning the study were discussed. A qualitative approach had been used to reach the overall aim and objectives of the study as it is characterised by its ability to provide a deeper understanding of the phenomenon being investigated. A descriptive and interpretative approach was used to analyse the information with regards to the semi-structured interviews and documents. The analysed interviews were used to establish what the role of a responsive curriculum is in optimising learning in HE.

The rationale of the study was explained in relation to a comparison between qualitative and quantitative research. By doing this the researcher could explain the research paradigm,

approach and design. Also, the trustworthiness of the study and the ethical considerations were taken into consideration. In the next chapter the results of the study are presented and discussed.

CHAPTER FIVE
Findings and discussions

5.1. Introduction

The aim of this chapter is to present findings that emerged from the study. The data collected will be presented according to the themes and codes identified during the qualitative thematic analysis. A discussion of these findings will be interpreted in relation to existing literature, as well as to the research questions posed in previous chapters. The themes and codes that emerged from the data analysis process were grouped and presented in Table 5.1.

Table 5.1 Summary of the themes and codes

Themes	Codes
Responsiveness of the curriculum	Intent and purpose of the curriculum is clear Curriculum is inclusive and developmental (only for the lecturers) Curriculum is responsive to the needs of industry, society and students needs Impression of the curriculum (only for the students) Relevance of the curriculum (only for the students)
Impact (optimisation) of learning potential	Curriculum provides opportunities for students to optimise their learning (only for the lecturers) Curriculum procedures versus lecturer creativity (only for the lecturers) Essential skills and competencies are acquired (only for the students) Curriculum is intellectually and emotionally stimulating (only for the students) Curriculum is structured and developmental (only for the students) Outcomes are clearly structured (only for the students)
Standard of the curriculum	Improvements to be made to the curriculum Challenges of the curriculum Quality assurance is done (only for the lecturers) Involvement in the developing of the curriculum (only for the lecturers) Role of the support staff (only for the lecturers)

5.2 Research questions

The research question is: How can learning in a higher education institution be optimised through a responsive curriculum? And the sub-questions are:

- Which factors shape and influence the curricula of the South African higher educational landscape?
- What are the characteristics of a responsive curriculum in HE and how can the concept learning be defined?
- How may the curriculum at a selected South African HEI be considered as a responsive curriculum in optimising learning in higher education?
- How can a responsive curriculum model for HEIs be proposed to optimise learning?

The abovementioned questions guided the research process and also provided an indication whether the research questions were answered.

5.3 The data collection process

The data collection took place at the Tshwane University of Technology (TUT) during the second quarter (July-August 2014). The researcher initially contacted the Head of Department (HOD) of the Department of Informatics in the Faculty of Information and Communication Technology (ICT). He referred her to the lecturers teaching in the subjects Business Analysis III and IV at the Diploma and BTECH (honours) levels. A letter of request was sent to the Department of Informatics (see Appendix 1) to do research. Also, information and consent letters were sent to students and lecturers to participate in the research (see Appendix 4). The initial meeting took place between the HOD of the abovementioned department and the researcher. Later upon a recommendation from the HOD arrangements were made directly with the participants. In the following table, a timeline is given indicating the dates of interviews with regards to all the participants.

Table 5.2 A timeline of interviews provided

Interviews	Dates
Round 1 interviews: 3 Lecturers teaching Business Analysis III and IV	30 June 2014
Round 2 interviews: 6 Diploma students in the subject Business Analysis III	21st of July - 4 August 2014
Round 3 interviews: 6 BTECH students in Business Analysis IV	7 August – 30 August 2014

5.4 Overall rate of participation

Of the total number of students in Business Analysis at Diploma and BTECH levels, two groups were selected to participate in the study. Ten students for each qualification level were identified and selected but only 6 out the 10 students at the Diploma level and 6 out of the 10 students at the BTECH level participated in the second and third rounds of interviews. This is 12 out of 20 students who participated in the interviews. Three lecturers participated in the interviews. Overall 60 % of the student participants formed part of the interviews. Here follows the reasons why there was not 100% participation on the part of the students:

- Student unrest at the Soshanguve Campuses during the scheduled times of the interviews.
- Some students could not access their internet while they were at home during the time of the unrest.
- One of the lecturers left the institution. The latter left the students unsure whether they still wanted to participate in the research project.
- The catch-up scheduled implemented by the institution interfered with scheduled times for student interviews.
- The BTECH students could only see the researcher on Saturdays, in between their fully packed schedules. The latter led to students not pitching up for interviews.
- The researcher tried to re-schedule interviews with some of the students but unfortunately, it never materialised.

5.5 Findings and discussion of the semi-structured interviews of the lecturers

The interpretation of the interviews are done according to topical coding principles and the streamlined-codes-to-theory model for qualitative inquiry (Salanha & O'Brien, 2014), as explained in chapter 4. In this section the themes, the codes and findings related to the codes, are explained.

Theme: **Responsiveness of the curriculum**

The NCHE (1996), Bertram (2006), Shalem and Slominsky (2006) and Moll (2011) suggested a heightened responsiveness of the curriculum within HEIs to societal interests and needs. Therefore the NCHE (1996) in its concluding statement on the review of international trends and the national policy have increasingly emphasised the responsiveness of HE to the goals of economic and social development and that responsiveness of the curriculum should also include an appreciation of the longer-term demands on higher education, that flow from a more universal, wider-ranging view of its nature and role in human affairs. Similarly Moll (2011), Bertram (2006), Shalem and Slominsky (2006) and the CHE (2013) stresses that globalisation and the development of knowledge based economies oblige HE curricula to be economically responsive and produce graduates who can meet the country's resource needs and participate in the world of the 21st century. The latter means that the responsiveness of the curriculum will allow academic inputs and discretion, so that the intentions of the economy and the social environment can be attended to. Against the abovementioned ideal of curriculum responsiveness the findings of this theme will be presented under the codes: intent and purpose of the curriculum is clear, curriculum is inclusive and developmental and the curriculum is responsive to the needs of industry, society and students needs.

Code 1: Intent and purpose of the curriculum is clear

The studied literature on the concept of responsiveness (see Par. 3.2) within this study does not explicitly highlights the code intent and purpose of the curriculum as a characteristic of a responsive curriculum, but the researcher finds the definition of Manathunga (2011) with regards to a responsive curriculum in support of the abovementioned. Manathunga (2011) mentions that a responsive curriculum is a reflective approach to teaching and learning where students and teaching teams are encouraged to interpret and characterise the curricula. It can be argued that the previous definition by Manathunga (2011) might not address the code intent and purpose of the curriculum to be clear, but the researcher is of the opinion in order to interpret, characterise and reflect on a curriculum, the intent and purpose of a curriculum should be clear and understandable. From this understanding the findings are presented. It was found during this study that all three of the lecturers agree that the purpose and intent of the curriculum is clear. They regard the curriculum as a transparent process, which should include the course outcomes and that these outcomes should be structured. The lecturers alluded to this by stating that the "curriculum is to provide a guideline to the content and to what a course entails. It gives

direction what we teach, so that curriculum is not all over the place. The purpose of the curriculum should also be transparent to needs of industry and needs of the country. This improves the quality of student education".

Code 2: Curriculum is inclusive and developmental

The abovementioned code finds it support within the work of Villegas and Lucas (2002), which mentions in their brief description of the characteristics of a responsive curriculum (see Par. 3.2), that a positive attitude toward students from culturally diverse backgrounds should be displayed, by respecting cultural differences and by being inclusive in the educational approach to the curriculum. To corroborate the latter the following findings are presented. One lecturer felt that the curriculum is developmental and but not inclusive. The lecturer states "yes the curriculum is developmental, but inclusiveness is a relative term. Inclusiveness entails the study guide with specific outcomes which should address challenges in practice. It should be able to relate to other environments and link to other disciplines in the real world". The other two lecturers mentioned that the curriculum is not inclusive neither developmental. The following is how they responded. "No the curriculum is not inclusive and also not developmental". They feel that the content is outdated and that students are not supported enough. "Students are not supported enough thus no growth is noticeable from Business Analysis second year to third year" and that the students with disabilities are excluded "students are been observed at in general not at their disabilities"

Code 3: Curriculum is responsive to the needs of industry, society and students needs

The abovementioned code finds its significance in what Boughey (2009) writes when she mentions that a responsive curriculum denotes the ability of teaching and learning in the HEIs to meet the changing needs of employers and to provide industry with personnel whom will be able to increase their economic competitiveness. To corroborate the latter, the findings are presented. One lecturer felt that the curriculum is responsive and this is how the lecturer responded: "a responsive curriculum versus the content, this does speak to needs of society and it is responsive to practices". One felt that the curriculum is partially responsive and states that "somehow the curriculum is responsive, but it needs to change and benchmark against other institutions, ICT is dynamic and changes constantly, that is why the curriculum should be compared to other institutions to see whether students are equipped with the proper information". The other lecturer felt that the curriculum is not responsive at all, because it does not address the needs of

industry, students and society and states “no not the current curriculum for Business Analysis III. This curriculum does fundamentals, but the curriculum is outdated not responsive”.

Theme: Impact (optimisation) of learning potential

Referring to the work of Shalem and Slonimsky (2006), Moll (2011) points out that all students who enter HE are ‘disadvantaged’ in the sense that they need to adapt to an institutional and epistemic context that is unfamiliar to them. However, some students struggle more than others as a consequence of their specific learning histories. The challenge is to enable students to change and develop their learning practices so as to internalise the new epistemic culture. It is also incumbent upon the university to transform its practices so that curricula articulate with students’ entry level knowledge practices. Khan (2011) mentions that one of the challenges academics face when designing pedagogies and curricula is how best to articulate/align the curriculum to optimise student learning and also articulate their own positions regarding the different theories or models of learning, which informs the process and the design as well as the product. By taking the previous understanding into cognisance, the codes: the curriculum provides opportunities for students to optimise learning and curriculum procedures versus lecturer creativity, that support this theme will be explained.

Code 1: The curriculum provides opportunities for students to optimise learning

Responsiveness to learning thus demands that university academic staff concentrate not only on what is taught in a course, but also on how it is taught. This implies that the curriculum is responsive to the learning needs of students by teaching them in terms that are accessible to them and assessing them in ways that they understand (Hayes & Juárev, 2012; Moll 2011; DHET, 2012; Sarason, 2009). Against the previously mentioned context the findings of this code are presented.

Two out of the three lecturers felt that the curriculum provided the students with the opportunities to optimise their learning and that the students have the ability to work in real life situations. They alluded the latter by stating “yes it does provide them with the ability to work in real life situations, through the practicals and case studies. Based on the subject content (Statistics and Databases) they are doing something totally knew”. According to the lecturer teaching Statistics critical thinking is important to be successful in this subject. The third lecturer felt that although the lecturers encourage the students to optimise their learning potential, the students are not internally motivated to succeed. The latter is a great concern to the lecturer. The

following was the lecturer's responds: "No, I do encourage students to optimise their learning potential. I am concerned with the type of cohorts coming to study at the institution. They are not always motivated to be successful. I strongly feel that curriculum is not developmental".

Code 2: Curriculum procedures versus lecturer creativity

In the literature that was studied during this research, the abovementioned code was not explicitly mentioned. But the researcher finds support for this code in the characteristics of a responsive curriculum in Villegas and Lucas (2002), Alaska Native Knowledge Networks (2005) and Wits School of Education (2009), when they mention that the constructivist approach to curriculum development, teaching and learning, promotes critical thinking, problem solving, collaboration, recognition of multiple perspectives and creativity. It is the opinion of the researcher that abovementioned qualities supports lecturer creativity and that the curriculum procedures can be enhanced by such qualities. Against this context the findings of the participants are presented.

Two of the lecturers felt that there should be a balance between curriculum procedures and lecturer creativity and not necessarily one versus the other. They felt that lecturers should be creative in teaching the curriculum. They alluded to the latter by stating that "there is a balance between one's own practices, policies and procedures that's needed to be followed. Lecturers need to be creative and this encourages students to be creative. This should be linked to teaching the curriculum creatively". One lecturer felt that there is no room for creativity and that not everyone is involved in the curriculum development. The lecturer states that there is "no room for creativity, due to the fact that everyone is not involved in curriculum development. The lack of basic knowledge on curriculum procedures impacts on the latter. Even if they can be creative they will not know where to start".

Theme: Standard of the curriculum

According to the studied literature the external quality assurance systems also need to demonstrate that they actually produce an improvement in the standard of the curriculum (SAQA, 2013). More constructive discussion between institutions, quality assurance agencies, stakeholders and public authorities appears to be taking place, and the involvement of students in quality assurance activities also seems to be gaining ground (DHET, 2012). The intention of the latter is to improve the standard of curricula in HEIs (SAQA, 2013). The codes: improvements to be made to the curriculum, challenges of the curriculum, quality assurance, involvement in

developing the curriculum and role of support staff, will be discussed as well as the findings will be presented in the section below.

Code 1: Improvements to be made to the curriculum

The mentioned code finds its support in the work of Pasternack (2011) and the OECD (2008), which mentions that universities should consider the re-curriculation of qualifications by introducing study programmes to allow for higher participation rate and also to multiply the different study options. The latter means that the curricula in HEIs will have to be enhanced and improved to provide students optimal learning opportunities. Against this background the findings and the interpretations of the participants are presented.

The lecturers mentioned a number of things on how to improve the curriculum. Amongst these issues are that the curriculum should allow for a creative approach. The alignment between industry and curriculum should be clear. The constant changes to policies and decided curriculum documents become demanding and challenging in teaching the curriculum. To support the latter the lecturers mentions that "constant changes that take place to already decided curriculum documents complicate the curriculum activities and also pose a challenge in teaching these curricula". An affiliation with other institutions should be formed. They referred to the latter by asserting that "affiliations with other institutions should be implemented, especially with regards to the area of Business Analysis and Project Management. Compare curriculum content to other institutions". The lecture halls are not conducive for teaching the curriculum. To substantiate the latter the lecturers references that "the way the lecture halls are build does not encourage round table engagements and group work in subjects such as Business Analysis, group dynamics and implementation of curriculum are compromised".

Code 2: Challenges of the curriculum

Kim (2011), Mkhonto (2007), Deem (2001), Kraak (2000) and Blasi (1999) list an array of challenges that the HE landscape are confronted with. These challenges are categorised as internal and external challenges (see Par. 2.3). Amongst the internal challenges that are mentioned is the restructuring and redesign of HE curricula. Due to the shift from universities playing a role in the economic development of the country, programmes also had to be redesigned to meet specific economic and industry needs (Deem, 2001). Against this background in the section below the findings and interpretations of the responses of the participants are presented.

The lecturers felt that the language proficiency of students impact on their learning and ability to optimise their learning potential. The lecturers' references that "teaching changed due to insufficient English proficiency of students (basic English is lacking, the proper use of verbs and nouns are absent) and because of the profile of the students and the ability to maximise their potential". There is no commitment from students in their approach to the curriculum activities. Here the lecturers mention "that there is no dedication from students on how they approach the curriculum activities". The lecturers lack sufficient curriculum development knowledge. To substantiate the latter the lecturers stated the "the lack of sufficient curriculum training impacts on the ability of us, as lecturers to develop proper learning material that will enhance learning".

Code 3: Quality assurance is done

The quality assurance of the curriculum is mentioned as a way for academia to reflect on the relevance of their programs. Mkhonto (2007) writes to this effect that pressure is put on academics to comply with quality assurance procedures, e.g. student opinion surveys on the quality of teaching and course design. Against this background the findings and interpretations of the participants to this code is provided. Two lecturers felt that quality assurance of the curriculum does take place and maybe done twice per year. "Quality assurance is done every semester; yes I am involved by evaluating study guides and question papers. There are a lot of administrative issues involved in quality assurance. The reviewing of content through advisory committees can be regarded as quality assurance and I am involved in that." They are also clear that not all the aspects of the curriculum do get quality assured. They alluded to this by stating that "the only document which get evaluated and quality assured by the curriculum specialist are the study guides. To this effect the lecturers made it abundantly clear that they are not involved in these processes. "Not really involved in the quality assurance processes. The curriculum is sent to the curriculum development practitioner to do the quality assurance". The third lecturer felt that evaluation of a study guide is not quality assurance of the curriculum and mentions that if an individual wants to be included in the quality assurance processes, they should be a program manager. The latter is underlined by the following statement: "the evaluation of a study guide it not quality assurance. To be involved in the quality assurance process one should be a program manager. Although the department encourages the quality assurance of curriculum at departmental level, not everyone is involved". That the quality assurance of a curriculum is of importance cannot be disputed, as deducted from the lecturers' interpretations and also what literature suggests. The CHE (2013) on the latter mentions that this growth and change, together

with the increasing awareness within HEI's, the benefits and challenges of effective quality assurance and enhancement activities, have paved the way for a considerably more constructive approach to curriculum development in general.

Code 4: Involvement in the developing of the curriculum

To highlight the importance of this code, involvement in developing of the curriculum Fehnel (2002) and the CHE (2013) mention that the changing role of the academic staff is pivotal to the development of curricula in HE. The new generation of academic staff requires bold and visionary institutional leadership, which will elevate the quality of education in respect to curriculum development and social responsibility. By this code different stakeholders such as lecturers, industry, society, students, and HOD's are considered. Also by this code the question is asked and answered as to who is involved in the curriculum development processes. Two of the three lecturers are partially involved in the curriculum development process. By being partially involved, the lecturers meant they are only involved in the development of the subject files (blue files) and study guides. One lecturer is fully involved as she works closely with the curriculum development practitioner. Lecturers agreed that the HOD is mostly involved in the curriculum development and regards this, a one man show compromising the quality of the curriculum. To underline the previous statement, the lecturers mentioned "only one person, the HOD is involved in the development of the curriculum. It is crucial that others (lecturers) should get involved in the development of the curriculum. It is critical that students should also be involved in the curriculum development processes". Two lecturers mentioned that industry is involved in curriculum development processes and mentioned that "industry is involved on the level of the advisory committee". Only lecturer did not feel that industry is involved and mentions that "five advisory board meetings were scheduled for the year and none materialised". All three of the lecturers agreed that students and society are not involved in the curriculum development process and mentioned that the "students and the society are not involved in the curriculum processes, not sure if they are involved in the initial curriculum design processes".

Code 5: Role of support staff

It was difficult to find support for this code in the studied literature. The role of the support staff, especially the curriculum specialist is unique to the TUT environment. It is the opinion of the researcher that not all HEI's have such support staff which play a pivotal role in the curriculum

development processes. With the mentioned as context, the following findings and interpretations will be presented.

All three lecturers agreed that the support staff have a role to play in the development of the curriculum. Here they mention that "Yes, according to the lecturers collaboration is important between the department and support services. At least once or twice a year collaboration should take place. A 50-50% partnership is important, because the support staff can provide the expertise".

Based on the findings and interpretations from Par. 5.5, it is evident that the lecturers felt that the curriculum is outdated and their creativity is being overshadowed by the curriculum procedures they have to follow. The lecturers mentioned that "procedures are more important than creativity". Meanwhile institutions need to continue to embed a responsible and responsive quality culture as a means of enhancing creativity and innovation in fulfilling their curriculum missions (DHET, 2012).

They are also concerned that in practice it is difficult to assess and teach such a diverse group of students and that the latter impacts on the ability of students to maximise their potential. It seems that in the development of the curriculum and quality assurance thereof only one person is really involved. The "one man show" as one of the lecturers called it, results in the lecturers feeling side-lined in developing the curriculum and on improving the curriculum. The latter impacts on teaching the curriculum with enthusiasm. The evidence shows clearly that the curriculum development process is not an inclusive and collaborative process and relevant stakeholders like industry and students are not part of the latter. One lecturer said that "industry should play a more prominent role in the development of the curriculum and that the advisory boards should consist of relevant stakeholders". The partnership between the support staff and the lecturers is highlighted and it seems that lecturers want this partnership to develop more and not only be restricted to the evaluation of study guides, but to other relevant curriculum documents. On the key issues of the study, namely, the responsiveness of the curriculum and the optimisation of student learning, lecturers were divided and some strongly suggested that the curriculum has to change and that it should become a more inclusive and collaborative process. Although students do succeed and optimise their learning potential, lecturers feel there is room for improvement with regards to the curricula of Business Analysis III and IV. In their responses a few improvements where mentioned. They mentioned that "the curriculum should be well developed, clear expectations should be set and that the curriculum should bring order to the

learning, as well as that the curriculum should focus more on what the industry need from the students and that the curriculum should be a competitive tool at all times".

5.6 Findings and discussion of the semi-structured interviews of the Diploma students

In the following Par. 5.6, a detailed explanation and interpretation of the findings are given, based on the responses of the diploma students to the interview questions. The same principle of interpretation is followed as in Par.5.5.

Theme: Responsiveness of the curriculum

Shalem and Slominsky (2006), Moll (2011) and DHET (2012) mentions that external and internal factors should be considered in order for a curriculum to be responsive. The external factors according to DHET (2012) to be considered are broad social changes including ideological shifts, parental and community expectations, the changing nature of the subject and the potential contribution of teacher support systems such as senior colleagues and specialised institutions. The internal factors include the learners and their attributes, teachers and their knowledge, skills, interests, materials, resources and perceived problems. The former is validated by the interpretation of the codes: impression of the curriculum, intent and purpose of curriculum, relevance of the curriculum and the curriculum is responsive to the needs of industry, society and students' needs.

Code 1: Impression of the curriculum

The literature study engaged in chapters 2 and 3 does not unambiguously mention this code as characteristic for curriculum responsiveness, but the CHE (2013) and Kim (2011) highlights that the students' demands for HE has a bearing on the extent to which they, as paying customers, expect value from the educational programmes offered by HEIs. Their demand is for HE, to reciprocate their expectations and impression of the curricula. Below the findings and interpretations of the participants are presented.

Out of the six students which were interviewed, three students were not impressed by the curriculum. They mentioned that "impression of Business Analysis III is positive, I enjoy the subject because I love working with people. I can relate to the curriculum. It allows me to come up with my own ideas and to be creative, my impression of the curriculum is that the theory analysis very valuable. It adds value to my learning. The Network field is similar to project

management it is good foundation for Business Analysis". The other three students were not impressed in the manner in which the curriculum was structured. These students mentioned that "the main concern is that the programming is difficult and that we do not understand its relevance with regards to the curriculum. The text book that is in usage does not explain much. I do not understand its relevance with regards to the subject curriculum and qualification".

Code 2: Intent and purpose of curriculum

In the literature that was studied in chapters 2 and 3, this code is not explicitly mentioned, but it is implied that the intent and purpose of the curriculum should be mentioned in the redesign and re-curriculation of the HE curricula, which are frequently mentioned by Moll (2011), Deem (2001) and Clark (2005). Against the latter, the interpretations of the participants are provided.

Three students comprehended and understood the purpose and intent of the curriculum and they mentioned "yes it is clear the purpose and intent. (We) could understand what the aim of the curriculum is". The other three students felt that the intent and purpose of the curriculum is not clear and mentions that the "purpose of the curriculum is not clear; do not understand the purpose and intent of the subject".

Code 3: Relevance of the curriculum

Duderstadt (2000b), Pityana (2009) and DHET (2012) mentions that HE is the most important supplier of knowledge and skills necessary for the economy and society. HE's collaborative enterprise with government, industry and commerce is strongly urged. In the researcher's opinion the latter alludes to the fact that curricula in HEIs should be relevant to address the dynamics of employer expectations and the supply-demand imbalances. Within this statement the mentioned code, relevance of the curriculum, finds its basis. In the section below the findings and interpretations of the participants are presented.

Three students regarded the curriculum as totally relevant and acknowledge that it will help them to understand the business world and states "yes it is relevant, the information of the curriculum relates to real life situations and examples, it can definitely help in understanding the business world and how it functions". Two students regarded 50% of the curriculum as relevant and also felt that the content of the curriculum should be improved and mentions that "about 50% of the curriculum is relevant. Improvement should be done to curriculum content to make it more

relevant and applicable". One student felt that the curriculum can be made more competitive although it is relevant by stating "(the curriculum) can be improved to be competitive".

Code 4: Curriculum is responsive to the needs of industry, society and students needs

According to Pityana (2009), Bridges (2000) and DHET (2012) the rationale of HE curricula is derived significantly from the needs of the national economy as defined by the employers. Also that HEIs curriculum should aid economic competitiveness and social inclusion, thus should be responsive. Against this background the findings and interpretations of the participants will be presented.

Two students did not regard the curriculum as responsive to the needs of industry, society or own needs and mentions "no, the curriculum is not responsive to the needs of industry, society or my own, because I just have to study the content in textbooks, I do not regard the curriculum as responsive to the needs of industry and society". The other four students felt that the curriculum prepares them for industry and society, but do not see the curriculum as responsive to their own needs. "Yes, the curriculum is responsive; it will help with analysis skills, planning skills, how to draw diagrams, yes it is responsive to needs of industry, but not responsive to my own needs."

Theme: Impact (optimisation) of learning potential

With regard to the impact of learning, there are some 'essential' or 'generic' skills that everyone needs to learn so that they can operate effectively across many areas of life. For example, in a constantly changing knowledge society, people particularly need to develop the skills necessary for them to continue learning throughout their lives, e.g., learning how to learn, how to adapt existing learning to new contexts, and how to integrate new learning into existing metacognitive 'mind-maps' (Pityana, 2009: DHET, 2012). Against this background the findings and interpretations of the participants was evaluated against the codes: essential skills and competencies are acquired, curriculum is intellectually and emotionally stimulating, curriculum is structured and developmental, and outcomes are clearly structured.

Code 1: Essential skills and competencies are acquired

All six of the students agreed that by engaging with Business Analysis III, that certain skills and competencies are acquired. They substantiate the latter by stating "yes the curriculum makes you aware of the kind of person you are, you can improve on certain skills like presentation skills, how to communicate and bring about a point, Yes, intra- and interpersonal skills are developed

through this curriculum, also communication skills, computer and social skills. Yes, the curriculum has the potential for us to optimise our own potential". The skills and competencies mentioned by the students are: listening skills, research skills, communication skills, presentation skills and analyses skills. One student also mentioned that critical thinking skills are also acquired and states that "Business Analysis also improves student's critical thinking skills". The latter is corroborated by Kearney (2008), Pityana (2009), Mail & Guardian (2012) and CHE (2013) when they mentioned that the curricula should be organised to stimulate the entrepreneurial skills of students. This requires flexible, innovative and interdisciplinary approaches.

Code 2: Curriculum is intellectually and emotionally stimulating

The studied literature does not explicitly support the code: curriculum is intellectually and emotionally stimulating, but what is evident according Biggs', (2003) constructivism and students' approach to learning is that with the successful engagement of the content (curriculum) two vital actions are ensured, namely construction of the student's goals and strategies from available information (intellectual) in addition to their own knowledge (intellectual) and the students learn from their experiences (emotional) (Biggs, 1987; Dewey, 1933; Biggs, 2001). These statements provided the context for the findings and interpretations of the participants as presented below.

Two students found some parts of the content in the curriculum emotionally and intellectually stimulating and mention "some parts of the curriculum yes, you cannot approach the second chapter if you do not know first chapter. Sequence is important". They continue and further mentioned that "the way the curriculum is structured helps us to engage with the curriculum and we find it emotionally and intellectually stimulating, because we are consistently thinking about how to improve ourselves and engage with the content. The content challenges us". But the other three students regarded the curriculum as fully emotionally and intellectually stimulating. "Yes it is both emotionally and intellectually stimulating. The curriculum challenges you. One has to take failure positive".

Code 3: Curriculum is structured and developmental

The focus of this code was to establish the individual experience of the participants to the studied curricula. In the literature that was studied no obvious mention of this code was found.

Hence the approach whereby the interpretations are presented and then the quotes to illustrate the thoughts of the participants.

Two students experienced the curriculum as only structured, but not developmental and mentions that "the curriculum is structured yes, but I do not regard it as developmental. The other four students regarded the curriculum as well organised and developmental and mention that "the curriculum is structured and developmental, intellectually stimulating and exciting. You can apply your own understanding to the given scope. Yes the curriculum is clearly structured. Even if you not in the class the outcomes will guide you to understand the curriculum". Furthermore what was interesting is the observation one of the students made, by stating that "if the subject (Business Analysis III) and curriculum is explained in conjunction with other subjects and a holistic view is formed, only then Business Analysis III is developmental and structured".

Code 4: Outcomes are clearly structured

According to Scott (2011), SAQA (2013) and DHET (2013) the academic level of a course or programme of study is often set by its learning outcomes. During course approvals and reviews it is often a requirement that it be confirmed that the learning outcomes are at a suitable level, with reviews looking for the appropriate words used at the appropriate level. The findings and interpretations of the participants were evaluated against the latter.

Three students responded that the outcomes in the curriculum are clearly structured and that they can follow the course without even attending lectures, to this effect they mentioned that "Yes the outcomes in the curriculum is clearly structured. Know what to achieve. Even if you not in the class the outcomes will guide you to understand the curriculum". The other three students responded that they do not regard the outcomes as clearly structured and reacted by stating "no, it is not clearly structured, the outcomes. Do not understand the aim and goal of the outcomes. The outcomes not clearly structured, very confusing and sometimes difficult".

Theme: **Standard of the curriculum**

In the quest for standards of the curriculum, it is essential to determine more specifically the value of study tiers, cycles, and modules, up to individual educational achievements (Karajagi, 2011). Standards of the curriculum need to be defined, accreditation and evaluation procedures introduced (OECD, 2008). The findings and interpretations of the codes: improvements to be

made to the curriculum and challenge of the curriculum will be discussed in the section that follows.

Code 1: Improvements to be made to the curriculum

This code finds it support in the challenges which are mentioned in chapter 2. The work of Dede (2007), Mkhonto (2007) and Boughey (2009) which mentions that programmes in HE should be redesigned to meet specific economic and industrial needs. HE curricula are challenged to redress past inequalities and to meet pressing national needs and respond to new realities and opportunities. The findings and interpretations of the participants were evaluated against the latter.

Three students felt that the balance between practicals and theory is missing and that more time should be spend on this issue. To underline the previous statement they mentioned that the "focus is too much on the theory then the practicals. Would like it if there could be a balance between the practical and the theory in the curriculum". One student suggested that the textbook be changed and mentioned "that with regards the information in the text book, it is too much and the essence of the curriculum is lost through that. The information should be more condensed and aligned to the assignments". The other two students felt that the theory is difficult and that more exercises should be given in this regard. They stated in support of the latter that the "application of theory (the practical) needs more emphasis. More hours should be put into teaching the practicals and more exercises and engagement with the curriculum should be provided".

Code 2: Challenges of the curriculum

It was extremely difficult to relate this code, challenges of the curriculum to the studied literature. The reason is because; this code is specific to the explanations of the participants with regards to the studied curriculum of the subject Business Analysis III. This specific code, challenges of the curriculum, highlights the participants' individual experiences. With the former in mind the findings and interpretations of the participants is presented below.

The issue the students found extremely challenging in the curriculum was the programming part of the curriculum. To underline the former two students responded to this question by stating "We find it very difficult to understand the programming part of the curriculum, it is time consuming. A way should be found to convey the information of programming module straight

forward. In Business Analysis the practical part of this curriculum should be organised better and should be structured better". The other two students felt that the approach to teaching the curriculum should change, "the lecturers' approach to teaching the subject should improve and involvement of lecturers in the class should increase" and that the assignments should be aligned to the condensed content. The other two students felt that they are overwhelmed by the workload and mentions that "the biggest challenge of the curriculum is sometimes writing tests on a day to day basis. We get overwhelmed by that and also by the presentations that we should do, it is a lot". Furthermore the students find it particularly challenging when it comes to analysing the content of the curriculum and states "it is challenging if you do not know how to analyse the content in the curriculum".

Taking into account all the themes and their codes, the researcher concluded that the majority of the Diploma students felt that the curriculum is responsive to the needs of industry, but not society and their own needs. The students mentioned "we feel the curriculum prepare us for the world of work, but not for our daily lives". Although the curriculum is relevant, and the purpose and intent is clear, three of the participants were still not impressed with the curriculum. The participants were divided with regards to the latter. With regards to the impact of the curriculum on their learning potential, participants remained unanimous that the curriculum impacted on their learning. Essential skills (communication skills, presentation skills) and competencies (analysis of information) were acquired during their engagement with the curriculum. However some of the diploma students still felt that the way the outcomes in the curriculum were structured and presented did not reach its intended purpose. Half of the participants felt that they were not clear on what were expected of them. With regards to the standard of the curriculum, improvements and challenges were highlighted. Participants want to see alignment between the content and the assignments and also that the programming, practical aspect of the curriculum should be simplified "we want to see the alignment between the content and the practical aspect of the curriculum". The information should be condensed and irrelevant information should be disregarded.

5.7 Findings and discussion of the semi-structured interviews of the BTECH students

In the following section, a detailed explanation and interpretation of the findings are given, based on the responses of the BTECH students to the interview questions.

Theme: Responsiveness of the curriculum

SAQA (2009) mentions that changes in society tend to immediately require corresponding changes in the curriculum of HEIs presumably because it is the end of formal education and the last opportunity for entry into the world of work. Besides, HE has the capacity to constantly investigate itself in order to make adjustment to improve both its internal and external efficiency. The previously mentioned statement by SAQA (2009) fully supports the theme of responsiveness of the curriculum. The mentioned theme will be explained by the following codes: impression of the curriculum, intent and purpose of the curriculum is clear, relevance of the curriculum and the curriculum is responsive to the needs of industry, society and students' needs. The findings and interpretations of the BTECH students will be presented below.

Code 1: Impression of the curriculum

The references from the literature study (chapters 2 and 3) will also provide the same support to the themes and codes used for the BTECH students as was used for the Diploma students. Here follows the interpretations of the participants.

Five of the six students were impressed with the curriculum of Business Analysis IV, and regard the content of the curriculum as a solid foundation for what is required to become a Business Analyst and mentions the following in support of the former "the information of the curriculum is useful in the workplace. The content of the curriculum is very relevant. A good curriculum, benchmarked against international standards of Business Analysis. Content is well organised and study guides easy to use". Only one student was not impressed with the curriculum and regarded the gap between theory and application to be problematic. The student alluded that "there is a gap between the theory and the application. The case studies used in curriculum does not relate to real work experiences. A lot of the information in curriculum cannot always be used in work place; it is also sometimes too complicated".

Code 2: Intent and purpose of curriculum is clear

The studied literature within this study does not explicitly highlight the code intent and purpose of the curriculum as a characteristic of a responsive curriculum, but according to Bache (2010) and the DHET (2012) most of curriculum development in HE has to do with the knowledge that is transmitted and the manner of doing so is to ensure that the purpose and the intension of a curriculum is clear, because it provides a framework for the statement of the outcomes. Within the provided context the findings and interpretations of the participants will be presented.

The researcher found that all the BTECH students agreed that the intent and purpose of the curriculum is clear. The following quotes illustrated their thoughts: "Yes the purpose and intent is clear. We do understand the purpose. The lecturer gives us more than what is required in the study. Intent is also clear. I understand the purpose and intent of the curriculum."

Code 3: Relevance of the curriculum

All the students regarded the curriculum as relevant, and felt that they can relate the information in the curriculum to real life situations. The following quote illustrated the thoughts of the participants: "Yes it is relevant can relate the information of the curriculum to real life situations and examples and also the lecturer has an important role play in the way the curriculum is interpreted." Although the curriculum is relevant students felt that changes can be made to the curriculum with regards to the content and the application of the curriculum. To substantiate the latter the students mentioned that "changes such as way the curriculum is structured can be made to enhance the curriculum. Irrelevant information should be disregarded". SAQA (2013) corroborates the latter and states that relevance of the curriculum includes a consideration of learner needs and interests as well as their present educational levels and abilities. For the curriculum to be relevant to society, it must centrally address pressing societal needs.

Code 4: Curriculum is responsive to the needs of industry, society and students needs

Curriculum development for HE should take place at various levels and must involve a cross section of society especially those from industry and commerce (the private sector) to ensure more relevance (Mkhonto, 2007). Involvement of national governments is ensured by representation on various committees of senior officers of government (SAQA, 2013). The findings and interpretations will be presented below.

Five of the six students regarded the curriculum as responsive to the needs of industry, partially responsive to their needs, but not all responsive to the needs of society. The following quotes illustrated their thoughts: "Yes the curriculum is responsive. The application from school to industry is shown in the curriculum. We can apply what is taught to industry. The curriculum is responsive because we need to do problem solving in industry. The knowledge gained can be applied socially (my needs) and skills and competencies is applicable for industry. It is responsive to industry but not to social needs". One student felt that the curriculum is not responsive to the needs of industry, society and students and mentioned the following, "no the

curriculum is not responsive. There is no alignment to what industry, society and what I require".

Theme: Impact (optimisation) of learning potential

Over the last few decades, there has been considerable debate internationally about whether skills can, or should, be separated from knowledge, attitudes and values. Recent work on competency development undertaken by the OECD (2008) conceptualises a competency as including all the components needed for effective performance or meeting the demands of a task: knowledge, cognitive skills, practical skills, attitudes, values, motivation etc. Since the teaching and learning of essential skills transcends education sector boundaries, curriculum linkages across sectors are needed to provide a common language and points of reference for systematic teaching and assessment of essential skills. This suggests that a shared, overarching framework may be needed (OECD, 2008). The following codes: essential skills and competencies required, curriculum is intellectually and emotionally stimulating, curriculum is structured and developmental and outcomes are clearly structured will be employed in the interpretation of the mentioned theme. In the section below the findings and interpretations of the participants will be presented.

Code 1: Essential skills and competencies are acquired

Five of the six students agreed that the essential skills and competencies are been acquired from the curriculum. They mentioned skills like communication skills, research skills, listening skills, problem solving skills and presentation skills. These skills as mentioned by the students, provides them with the opportunity to optimise their potential. The following quotes illustrated their thoughts: "Yes the curriculum identifies the essential skills like communication, writing, analysis and thinking skills are been taught in the curriculum. Definitely, the skills acquired during this curriculum are presentation skills, communication skills which are useful in industry". One student felt that these skills and competencies are already acquired in earlier syllabus and curricula. The student reacted by stating "not really, these skills are already covered in the earlier syllabus, the gap between the previous syllabus and this syllabus should be closed so that these essential skills can be emphasised more".

Code 2: Curriculum is intellectually and emotionally stimulating

As mentioned previously the same references from the literature study (chapters 2 and 3) will support this code. Special mention of the references used under the same code: curriculum is intellectually and emotionally stimulating, in the Diploma students section, provides backing to this code. It was exceptionally difficult to link other studied literature to this code. With the provided context in mind, the findings and interpretations of the participants will be presented.

One student of the six students agreed on the fact that the curriculum is intellectually stimulating and that it can be challenging. The students mentioned that "yes, the curriculum is intellectually stimulating and the content of curriculum can be challenging, but the curriculum is not emotionally challenging". The rest of the group felt that it is both emotionally and intellectually stimulating. The following quotes illustrated their thoughts: "Yes it is both emotionally and intellectually stimulating. The curriculum challenges you. Yes it is emotionally stimulating. Need to think intellectually about what it is to be a Business Analyst."

Code 3: Curriculum is structured and developmental

The focus of this code was to establish the individual experience of the participants to the studied curriculum Business Analysis IV. In the literature that was studied no obvious mention of this code was found. Hence the approach whereby the interpretations are presented and then the quotes to illustrate the thoughts of the participants.

All the students agreed that the curriculum is developmental and structured and that it can add value to the careers of individuals. The following quotes illustrated their thoughts: "The curriculum is well structured. Relevant case studies are given. The case studies is general not specific. The curriculum is well structured, but lack with regards to sequence in text books and there is more room for growth (improvement)".

Code 4: Outcomes are clearly structured

According to DHET (2013), Scott (2011) and SAQA (2009) learning outcomes also guide students on what they are expected to be able to do in terms of knowledge, skills and attitudes after completing the programme or parts of it. Correct interpretation of outcomes will guide both learners and teachers on the choice of relevant learning and teaching methods to achieve the intended learning. Against this background the findings and interpretations of the participants will be presented below.

Four out of the six students regarded the outcomes in the curriculum as structured and clear and that students would understand what are expected of them. The following quotes illustrated their thoughts: "Yes the outcomes is clearly structured and well communicated and the outcomes are important to provide guidance in curriculum and course. We know what is expected and what to achieve. Furthermore they stated "yes, the outcomes are communicated and structured clearly, it will help with career growth". Two students felt that the outcomes are not clearly structured and that only 50% of the time, the students understands what is expected of them. Here are their thoughts "the outcomes are not clearly structured. Only 50% of the time you understand what is expected of you". No, the outcomes are not clearly structured. You don't know what is been expected of you".

Theme: Standard of the curriculum

According to Bache (2010), OECD (2008) and Badat (2010). A national quality assurance and standard framework has been established and policies, mechanisms and initiatives with respect to institutional audit, programme accreditation and quality promotion and capacity development have been implemented. These developments have significantly raised the profile of quality and standard issues in the curriculum across the sector, and have linked notions of quality in teaching and learning, research and curriculum development to the goals and purposes of higher education transformation. Against the abovementioned the codes: improvements to be made to the curriculum and challenges of the curriculum, the findings and the interpretations of the participants will be presented below.

Code 1: Improvements to be made to the curriculum

The same references from the literature study (chapters 2 and 3) will also provide the same support to the codes used for the BTECH students as was used for the Diploma students. Here follows the interpretations of the participants. All the students agreed that some form of improvements should be done to the curriculum. They mentioned that "the project weight is 30%; it makes it difficult for students to pass. More information and help from lecturers is required". They continue by mentioning that "the information is sometimes outside the scope of Business Analysis but rather relevant for other disciplines like, IT (Computing)". Another improvement on the curriculum that the students suggested is that to close the gap between industry and curriculum (school) and that the certification of Business Analyst should form part of the curriculum. To underline the latter the students states that "one of the challenges is to have

worthy partnerships with industry and business and to improve on the curriculum by allowing the certification of the Business Analyst".

Code 2: Challenges of the curriculum

As mentioned in the previously under the same code by the Diploma students, it was particularly difficult to relate this code, challenges of the curriculum to the studied literature. The reason is because this code is specific to the explanations of the participants with regards to the studied curriculum of the subject Business Analysis IV. This specific code, challenges of the curriculum, highlights the participants' individual experiences. With the former in mind the findings and interpretations of the participants is presented below.

Five students out of the six students mentioned that they found the curriculum challenging. To the underline the former the students states that "one of the challenges is to include group discussions after the chapters and to include the application of theory in a case study. It is also a challenge to ensure that the practical application is emphasised". These students also want to be encouraged about the benefits with regards to the curriculum. To underline the latter the students mentioned that "one of the benefits is to teach students how to become good Business Analyst". One student did not really regard the curriculum as challenging and did not provide any inputs.

Under the allocated themes and codes, the researcher deduced that the majority of the BTECH participants regard the curriculum as responsive and that the curriculum addresses the needs of industry but not of society and the individual's needs of the students. Curriculum responsiveness denotes the ability of teaching and learning in HEI to meet the changing needs of employers and hence to provide them with personnel who will be able to increase their economic competitiveness (Moll, 2011). Here the students stated "yes this is a good curriculum, which is benchmarked against international standards of business analysis, but although it's a good curriculum, it does not necessarily address the needs of the individuals". It is furthermore clear that although some changes (such as partnerships with industry and business) or improvements should be made to the curriculum, the participants feel that the curriculum is well-structured, relevant with a clear purpose and intent. The outcomes set in the curriculum allowed the participants to understand what is expected of them. Two thirds of the participants agreed that the curriculum is developmental and intellectually stimulating. The latter gave them the opportunity to acquire essential skills and competencies relevant to industry and business, but

also to use in social encounters. It also allowed the participants to optimise their learning potential. With regards to the standard of the curriculum, participants highlighted the areas for improvements and changes within the curriculum. These areas included that the information was over-whelming and too much that the essence gets lost. The content of the curriculum also falls outside the scope of a Business Analyst, but is more relevant to the Information Technology (IT) Computing "what we are doing here is relevant for a Programmer and not for a Business Analyst". Also in order for them to reach their full learning potential they need more guidance and assistance from their lecturers. The section most of the participants found challenging in the curriculum, was the research and practicals. They said: "Emphasis should be placed on research as a subject and also the way the current research is done within the curriculum". They would like more engagement with regards to the latter as expressed by "individual practical experience should be emphasised; the project should be introduced at an earlier stage or a lower level".

As mentioned in the previous chapter another investigative method the researcher used was document analysis. Although document analysis was already discussed in Chapter 4, it is important for the researcher to contextualise the document analysis in alignment to this chapter on findings.

5.8 Analysis of the documents

Document analysis involves skimming (superficial examination), reading (thorough examination), and interpretation. This process combines elements of content analysis and thematic analysis. Content analysis is the process of organising information into categories related to the central questions of research. Some qualitative research experts may object to content analysis, contending as Silverman (2010) did, that content analysis obscures the interpretative process. Those research experts should bear in mind that documents include more than transcriptions of interviews and other forms of talk. The researcher should demonstrate the capacity to identify pertinent information and to separate it from that which is not pertinent (Corbin & Strauss, 2008). Thematic analysis is a form of pattern recognition with the data, within the data, with emerging themes becoming the categories for analysis (Henning et.al, 2011). The process involves a careful, more focused re-reading and review of data. The reviewer takes a close look at the selected data and performs coding and category construction, based on the data's characteristics, to uncover themes pertinent to a phenomenon (Henning et al, 2011). In the following table 5.3 the documents of this study were analysed.

Table 5.3 Themes and codes of the document analysis

Documents	Theme	Codes
Study guides of Business Analysis III and IV	**Responsiveness of the curriculum**	The intent, purpose and educational value of the study guides
	Impact (optimisation) of learning potential	The outcomes and the manner in which they are written The description, purpose and expectations of learning activities
Learning materials (examples of presentations) of Business Analysis III and IV	**Responsiveness of the curriculum**	The alignment of outcomes to the learning activities The intent and purpose of the learning activities are clearly communicated
	Impact (optimisation) of learning potential	Constructive alignment of learning activities to the specific outcomes of the subject and exit level outcomes
Question papers and memoranda of Business Analysis III and IV	**Impact (optimisation) of learning potential**	Differentiation of cognitive levels Questions scaffolded from simplicity to complexity The alignment to the outcomes in the question papers to the study guides and the learning activities
	The standard of the curriculum	The quality of the question papers and memoranda

The first batch of documents to be selected and analysed were the study guides of Business Analysis III and Business Analysis IV. The following two themes, namely the responsiveness of the curriculum and the impact (optimisation) of learning potential and its related codes, were engaged to analyse the study guides.

Responsiveness of the curriculum. HEIs should promote continuous and interactive partnerships with the productive sector using both reactive and proactive approaches (Karajagi, 2011). They must adjust the curriculum to meet the needs of the workplace and ensure that new disciplines and specialisations are incorporated into its content (DHET, 2012). To provide an indication whether the latter was achieved, **the code the intent, purpose and educational value of the study guides** should be clearly mentioned and stipulated. To this regard the researcher found that in the study guide of Business analysis III, the purpose and intent of the subject is clearly communicated but that the educational value of the study guide is not explained to the students. This leaves a gap for understanding the relevance of the study guide. In the study

guide of Business Analysis IV the purpose and intent of the subject are not communicated and the educational value of the study guide is not explained to the students.

Impact (optimisation) of learning potential.

A common impetus or catalyst for many curriculum development initiatives comes from the faculty which is interested in improving its curriculum so as to benefit student learning and be responsive to the needs of industry and the students (Wolf, 2007). In this orientation, the curriculum is approached to ensure optimisation of learning. In the product, process and praxis model (see Fig.3.10) the function of the curriculum is to define and control student learning (Fraser & Bosanquet, 2006:279). The focus of this model is often more on needs assessment, training, implementation, and evaluation with an emphasis on students' producing tangible results that reflect their learning potential. Here it is important to investigate the code **outcomes and the manner in which they are written**. In Business Analysis III, the specific outcomes focuses on the lower-order and the higher–order knowledge, skills, attitudes and the specific outcomes are aligned to the exit level outcomes in the study guide but in the study guide of Business Analysis IV only the exit level outcomes are mentioned, but not specific outcomes for the subject. Therefore it is difficult to determine whether the lower-order and higher-order knowledge, skills and attitudes are addressed and whether the outcomes are constructively aligned (see Diagram 3.1) to each other. The code **description**, **purpose and expectations of learning activities** are stated where necessary. In the work plan of the study guide of Business Analysis III assignments are only mentioned but not fully described for students to understand what are being expected from them. In Business Analysis IV there are no description, purpose and expectations of learning activities stated. In the study guide of Business Analysis III the assessment methods are not provided to demonstrate the responsiveness of the curriculum and the optimisation of learning. The assessment methods which are referred to here are the summative, formative and integrated assessment methods. Although the assessment methods are not mentioned in the study guide, the assessment criteria and critical cross field outcomes are mentioned. The latter provides the students with some idea of evaluation that will be employed in the subject, but does not demonstrate the constructive alignment (see Diagram 3.1) between the learning and teaching of this subject. In Business Analysis IV no assessment methods (summative, formative and integrated assessment methods) are mentioned, but the assessment tasks (assignment, project and tests) are provided. By only providing the assessment tasks and not the assessment methods, presents a misalignment with regards to the intention of the tasks

and what should be learned. It seems that the lecturer does not understand that there is a difference between an assessment task and method.

The second batch of documents that were analysed were the learning materials which are examples of presentations of lessons for the subjects Business Analysis III and Business Analysis IV. The two themes, responsiveness of the curriculum and impact (optimisation) of learning potential and their related codes, were used to analyse these documents:

Responsiveness of the curriculum.

Akinmusuru (2011:7) and Felder & Brent (2009) mentions to the effect of responsiveness of the curriculum, that the objectives of each academic program should be at achieving synergy with societal needs, in an on-going and continuous way. The curriculum is the vehicle by which responsiveness can be achieved. The codes related to the responsiveness of the curriculum find their basis within the mentioned context and the codes related to the responsiveness of the curriculum was categorised according to **the alignment of outcomes to the learning activities** and whether **the intent and purpose of the learning activities are clearly communicated** to the students (responsiveness of curriculum). The researcher found that in the subject Business Analysis III, the learning materials, content of the curriculum are aligned to outcomes set in the study guide and also to the learning activities. Also in the presentation slides the lecturer communicates the overview, purpose, outcomes and assessment criteria of the content. The latter adds to the issue of relevance and responsiveness of the curriculum. In Business Analysis IV the researcher could not establish whether the learning material is aligned to the outcomes and whether the intent was clear or well communicated. Although the lecturer mentions the skills, knowledge and competencies which a business analyst should possess, it was not explained how the latter can be accomplished through the curriculum/ content of subject.

Impact (optimisation) of learning potential.

According to Phan & Deo (2007) and Biggs (2001) the students' motive for learning, affects the way they approach the curriculum, their choice of strategy and this is observed in the interaction between the students, the context and the content of the module. Against this background, the code related to the optimisation of learning was categorised according to **the constructive alignment of learning activities to the specific outcomes of the subject and exit level outcomes of the qualification**. What was found by the researcher in the subject Business

Analysis III, is that a few learning activities are listed and mentioned. The alignment between the outcomes, assessment criteria in the learning activities is clear but with regards to Business Analysis IV no learning activities are listed to compliment the learning opportunities and enhance learning.

The third batch of documents that was selected and analysed were the question papers and memoranda of Business Analysis III and Business Analysis IV. The data were analysed by interrogating the themes and related codes to the impact (optimisation) of learning potential and standard of the curriculum.

The first code used in analysing the third batch of documents, was the **differentiation of cognitive levels** which relates to the theme impact (optimisation) of learning. What was found is that in both the subjects Business Analysis III and IV, the differentiations of cognitive levels are not fully addressed. There are too much knowledge recall questions, no application or synthesis of knowledge visible in both these subjects.

The second code of importance here was, whether the **questions scaffolded from simplicity to complexity**. This code relates to the theme impact (optimisation) of learning potential. The researcher found that in Business Analysis III, lower-order knowledge (e.g. recall, understanding), skills and competencies are addressed, but the higher-order thinking skills (e.g. critical thinking, creative thinking), knowledge and competencies are not addressed. In Business Analysis IV it was found that there is a lack of complexity because there were no application of knowledge, skills and competencies, the analysis of information and evaluation of knowledge was clearly absent. According to McKinney (2009), developing higher-order thinking skills and to endorse active learning, through collaboration and guidance impacts on the optimisation of learning as well as deep and meaningful learning.

The third code of importance here was **alignment of the questions in the question papers to the outcomes in the study guides and the learning activities** which relates to the themes, the impact (optimisation) of learning potential and the responsiveness of the curriculum. One of the challenges academics face when designing pedagogies and curricula is how best to articulate/align the curriculum to optimise student learning and also articulate their own positions regarding the different theories or models of learning, which informs both the process and the design as well as the product (Khan, 2011; Lovell, 2012). The researcher found that in Business Analysis III, the questions are aligned to outcomes in the study guide and also aligned

to learning activities. In Business Analysis IV it was found that because the outcomes are not properly and clearly communicated in the study guide, it was difficult to discover the alignment between the questions in the question paper and the outcomes.

The fourth code of importance was **the quality of the question papers and memoranda** which relates to the standard of the curriculum. This is established by the good quality, technically and educationally value of the question papers and the memoranda. In both the subjects, Business Analysis III and Business Analysis IV, the quality of documents is of good standard, educationally and technically well-developed.

With regards to the study guides of the subjects Business Analysis III and IV, it became apparent that the lecturers should focus on enhancing the students' experience in relation to the subjects, issues like explaining the educational value of the study guide and putting into perspective the purpose and intent of the subject. Here the researcher especially refers to the BTECH study guide (Business Analysis IV). With regards to the differentiation of questions in the question papers, both subjects, Business Analysis III and Business Analysis IV does not challenge students cognitively in order for them to optimise their learning through the curriculum. The alignment of the outcomes to the learning activities in the BTECH subject (Business Analysis IV) impacts on the intent and purpose of the subjects and its relevance. Quality assurance aspects of the documents are commendable and both the subjects were properly developed with regards to the technical outline and required criteria that are used. The question papers and the memorandums are aligned to the outcomes which are written in the study guides and presentations of learning material. It was concluded through the document analysis that lectures understood the educational value of these documents, but they are not clear on the responsiveness of these documents especially to the needs of the students and in the optimisation of learning.

5.9 Summary

In this chapter, the data collection processes were discussed that took place at TUT during the second quarter of 2014. Initially 20 students and 3 lecturers were identified, but only 12 students participated in the study. Various reasons were given and highlighted with regards to the latter. Data were collected by means of semi-structured interviews and document analysis. In this chapter the data of the 15 participants were discussed and findings were presented on the basis of

responses from the interviews and analysis of documents such as study guides, question papers and learning materials (presentations of lessons) of the subjects Business Analysis III and IV.

What transpired through the data interpretation processes are that the curricula of Business Analysis III and IV can be regarded as relevant, educational and technically well developed. The mentioned curricula seemed to lack in the area of optimisation of learning, because the purpose and intent of the learning outcomes are not clearly communicated in relation to the exit level outcomes, differentiation of cognitive levels and scaffolding from low-order thinking to higher-order thinking are absent and also the constructive alignment between the learning outcomes, learning activities and assessment should be strengthened. Although the curricula of Business Analysis III and IV are relevant and partially responsive, more can be done as prescribed by the Moll's sentence-frame on a responsive curriculum (see Chapter 3).

In the next chapter, the research questions are addressed, as the researcher reflects on the research study. Conclusions are drawn and recommendations are made from the findings and discussions of the interviews and analyses of documents. The researcher will also discuss the limitations and significance of the study and make recommendations for further research.

CHAPTER SIX
Conclusions and recommendations

6.1. Introduction

This chapter has a dual purpose. On the one side the purpose of this chapter is to draw conclusions of the findings of the research as well as to provide recommendations. In this chapter a summary of the previous five chapters is provided to reflect on whether the curriculum is responsive to the needs of the students, industry and society and whether student's experience optimal learning in HE and also if the research questions that guided this study are addressed. Reflection is done on what the researcher could have done differently to address what a responsive curriculum is and the impact it has on learning in HE. This is followed by the conclusions, recommendations and limitations of the study. A final reflection is done on the research study by providing a responsive curriculum design model.

The other purpose of the chapter is to consolidate and integrate the thematically and topically resonant trends, issues and debates that have been found and identified to have had a major impact in the conceptualisation, development, implementation and evaluation of the content, organization and delivery of the HE curriculum.

6.2 Chapter summary

In chapter one, the purpose and aim of the research study was introduced and contextualised. The purpose of this study was to investigate, by means of semi-structured interviews and document analysis the way the curriculum was perceived by the lecturers and students and whether the curriculum was responsive to the needs of industry, society and the students to allow them to optimise their learning potential. The problem and the rationale for the study was discussed, the research questions were formulated, and discussed. The methodological considerations and the possible contribution and limitations of the study were also discussed.

Chapter two presented an in-depth analysis of the findings in the relevant literature as well as the conceptual framework on which the study is based. The conceptual framework, which is based on concepts and theories from relevant work in the literature, was then discussed. In this chapter the researcher touched on particular issues with regards to the educational landscape and in particular the influence on the HE curriculum. In this section of the study the researcher concentrated on a few relevant issues, such as: a historical overview of the South African HE

environment; the changing South African HE environment and the influence of the HEQSF as a single-framework. Furthermore, the challenges brought about the instability of the HEQSF and HEI's articulation pathways with regards to their qualifications, curriculums and programmes were explained as part of the changes impacting on HEIs. The challenges, both internally and also externally were discussed. These challenges where globalisation, massification, ICT, higher education staff, lifelong learning and the new economic world order were included and explained. The latter places tremendous stress on the HE landscape in South Africa and also for curricula to become responsive to the trends and influences of the international world.

Furthermore, the impact of the knowledge types and how students learn was briefly mentioned. Here the work of Kraak (2000), Boughey (2009) and Gibbons (2007) were discussed and used to emphasise the shift from Mode 1 knowledge to Mode 2 knowledge. This impacted on how students learn, how they are being taught and how the curriculum needs to be structured to incorporate these particular forms of knowledge. Furthermore, in chapter two, the literature review continued with regards to the trends which impacts on curriculum development. The curriculum, as HEI's 'heart and soul', has been identified as the single most important factor acting as a determinant of how traditional HEIs will be able to survive in the face of relentless competition from alternative HEI providers.

To understand the latter, the researcher discussed a responsive curriculum, curriculum design and learning in depth in chapter three. Theoretical and educational frameworks (Essentialism, Progressivism, Perennialism, Extentialism, Behaviourism, Reconstructionalism, Cognitivism and Constructivism) which underpin a responsive curriculum were also discussed.

A description of the qualitative methodology used in this study was reported in chapter four. The researcher discussed constructivism (see Par. 3.3) as a theoretical paradigm, and the nature of the study as interpretative and descriptive. Semi-structured interviews were used to examine participants understanding and knowledge of what a responsive curriculum is and whether they regard the current curriculum as responsive and if the latter has an impact on the students learning. Document analysis formed an integral part of the research study, to bring about the constructive alignment principles. Lastly, the trustworthiness of the study and ethical considerations were taken into consideration and discussed.

In chapter five, the researcher reported on the data collection process, presented and discussed the findings. An interpretative and descriptive approach to coding the data was used as the

researcher identified three themes: responsiveness of the curriculum, impact (optimisation) of learning and standard of the curriculum. After the analysis phase, the researcher organised data in order to explore new patterns and trends. The researcher then presented the findings from the data obtained through semi-structured interviews and document analysis.

6.3 Verification of research questions

Based on the rationale that the rapidly changing world of work and its demands impact directly on the HE environment to adhere to career-orientated learning and maximising of human potential, the researcher decided to explore the relationship between a responsive curriculum and the optimisation of learning at a higher education institution in South Africa. In order to do so, the following research question was formulated: How can learning in higher education be optimised through a responsive curriculum? To address this main question, the following sub-questions guided the enquiry:

- Which factors shape and influence the curricula of the South African higher educational landscape?
- What are the characteristics of a responsive curriculum in HE and how can the concept learning be defined?
- How may the curriculum at a selected South African HEI be considered as a responsive curriculum in optimising learning in higher education?
- How can a responsive curriculum model for HEIs be proposed to optimise learning?

The researcher subsequently utilised constructivism as a research paradigm (the epistemological approach which guides the researcher's own curriculum development practice and orientation in developing responsive curricula) to verify these questions. In short: the constructivist holds that all knowledge is constructed and based upon not only prior knowledge but also the cultural and social context (CHE, 2013).

6.4 Concluding remarks

An overview of the literature assisted the researcher to provide clear answers to the sub-questions 1 and 2 which guided the research. The researcher found that the reality is that the South African HE society is very diverse and expresses its identities in a variety of ways. According to the CHE (2002b:9-10), HE is the one sphere of the South African society that is

capable of deconstructing the social, political, cultural and economic engineering designed by the apartheid ideological phase, the present "unique historical phase" warrants steps be taken in elevating the devastating effects of past educational differentiation. The steps to be considered in elevating the effects of past educational differentiation are the development at the global economic level in order for HE to produce more graduates than ever before. One of the major moves in South Africa after the 1994 elections was to "transform" HE. The following conclusions were derived from the literature review:

- That factors and trends discovered in the literature review do have an impact on the curricula at HEIs. This finding is a confirmation of what the Department of Higher Education and Training (2012) is posited earlier that the implication here is the reconfiguration of HE curriculum towards interdisciplinary skills development. This should be done in tandem with government, the private sector and the Department of Higher Education and Training (DHET, 2012).

- The HEQSF contribute not only to addressing inequality in HE or its qualifications, but also addresses the quality of curriculum and mobility between qualifications. This finding is a confirmation of what Gibbons (2007) and CHE (2013) posited previously that the newly reconfigured HE landscape requires that the pre-merger quality assurance obstacles that militated against student mobility and progression between programmes, qualifications and institutions, be thwarted (Gibbons, 2007:34). The implications of HEQSF (2013) are that existing qualifications (currently registered on the NQF and accredited by HEQC) will have to be reviewed to comply (over time) or be deregistered and withdrawn (CHE, 2013).

- Curricula should enable HE students to be sufficiently equipped to participate in the knowledge economy and socio-economic upliftment of society. In support to this finding the Manifesto on Values, Education and Democracy (2001:10) states the following: "The moral fibre, value systems and maximising of our people's potential are constituted and reconstituted in our schools, learning centres and institutions of higher learning which have extremely important roles to play in the development of our value systems and the empowerment of our societies. The National Department of Education (1997a:2) focuses thus on changes that should take place within HE so that South Africa could maintain higher levels of skills, competencies and maximising of human potential".

- Systemic coherence enhanced by simple and clear articulation (e.g. of qualification descriptors), which will assist students to develop their lifelong learning potential. This finding is a confirmation of what Gibbons (2007) and the CHE (2013) earlier posited that the focus is no longer on a concern with the complexity of input (teaching), but it is on the complexity of output (what students can do as a result of a study at a particular level) (CHE, 2013). In creating an enabling environment within which student mobility and progression prevails, conditions for the articulation of such mobility and progression have to be established, taking cognisance of, according to Gibbons (2007:34), of "an accurate assessment of the achieved levels of competency in the programme from which the student is transferring an accurate comparison of curricular contents and outcomes between the two programmes on the basis of the above, a calculation of which courses can be credited for transfer to the new programme, and at what level; an assessment of the level at which the student will enter the new programme and the identification of any additional 'catch-up' courses that the student may have to take to fill significant gaps before progression is possible".

The curriculum, as higher education's heart and soul, has been identified as the single most important factor acting as a determinant of how traditional HEIs will be able to survive in the face of relentless competition from alternative HEI providers (Akinmusuru, 2011:2). Also how to answer to the pressures of industry, the needs of students and society to become responsive and so that students be able to optimise their learning.

In order to address sub-questions 3 and 4 it can be concluded from the lecturers' interviews that all the lecturers agreed on the presentation of the curricula with regards to the purpose, intent and outcomes of the curriculum. This can be related to Kerr's curriculum model (see Figure 3.10) which clearly states that the presentation of curriculum as a product is very important and useful when designing a programme. Although the lecturers agreed on the presentation of the curriculum they were not clear on the issues such as the inclusivity, relevance and responsiveness of the curriculum. Finally the lecturers agreed that the curriculum does present the students with the opportunity to optimise their learning and the students do have the ability to perform in real life situations, but the language proficiency can be a hindrance in the academic development of the students. An affiliation with other institutions should be formed and that lecture halls should become conducive for teaching the curriculum, especially when it comes to round table discussions and group dynamics.

From the students' interviews (Business Analysis III and Business Analysis IV) it were concluded that the student participants were divided with regards to structure, the purpose and intent of the curricula. This notion impacts on the impression which the students have with regards to the curriculum. Although the curriculum is relevant, students felt that changes can be made to the curriculum with regards to the content, the application of the content and its responsiveness. The students acknowledged that the necessary skills and competencies to function in industry are acquired by the curriculum. The students acknowledged that the curriculum is intellectually stimulating, but lack emotional stimulation. They further acknowledged that the latter can only be accomplished if the curriculum is developmental and outcomes are clearly structured. The students mentioned that they found the curriculum challenging. Amongst the challenges they mentioned were that the weight of the project makes it difficult for students to pass and also that the gap between the curriculum and industry should be closed. The majority of the students felt that the curriculum was relevant, but not responsive to the needs of industry, society and students.

The following conclusions emerged from the document analysis, subjects Business Analysis III and Business Analysis IV. Firstly, the conclusions of Business Analysis III will be discussed and will be followed by the conclusions of Business Analysis IV.

Business Analysis III

In the document analysis of the subject of Business Analysis III the conclusions were that the purpose and intent of the subject is clearly communicated but the educational value of the study guide is not explained. The specific outcomes are clearly stated and the focus on lower-order to higher order knowledge and skills are indicated. The researcher missed the indication of the exit level outcomes in the study guide and could therefore not establish the constructive alignment (see Figure 3.1). In the work plan in the study guide, assignments are only mentioned but not fully described for students to understand what are expected of them. The assessment methods (e.g. summative, formative or integrated assessment principles) are not provided, but the assessment criteria and critical cross-field outcomes are mentioned. The learning material and content of the curricula are aligned to outcomes set in the study guide. Also in the presentation slides, the lecturer communicates the overview, purpose, outcomes and assessment criteria of the content. The latter complements the issue of relevance and responsiveness of the curriculum (see Figure 6.1). The differentiation of cognitive levels is not completely addressed in the question papers. There are too many recall questions for a third year level subject. Lower-order

knowledge, skills and competencies are addressed, but the higher-order thinking skills, knowledge and competencies are not addressed. Questions are aligned to outcomes in the study guide and also aligned to learning activities. The quality of documents is of a good standard and developed according to the proper criteria.

Business Analysis IV

In the document analysis of the subject Business Analysis IV the conclusions were that the purpose and intent of the subject are not communicated and the educational value of the study guide is not explained to the students. Only the exit level outcomes are mentioned in the study guide, but not specific outcomes of the subject. Therefore, it could not be recognised whether lower-order and higher-order knowledge, skills and attitudes are addressed and whether the outcomes are aligned to each other. There are no descriptions and opportunities of learning activities stated but they are stated in the work plan. No assessment methods are provided, but the assessment tasks are mentioned. It seemed that the lecturer does not understand that there is a difference between an assessment task and method. It could not be established whether the learning material is aligned to the outcomes and whether the intent was clear or well-communicated. Although the lecturer mentions the skills, knowledge and competencies which a business analyst should own, he does not explain how the latter can be accomplished through the curriculum/content of the subject. Differentiation of cognitive levels is not fully addressed. For a BTECH question paper, there were too many recall questions and no progression from application to analysis. There is a lack of complexity and of the implementation of different higher-order thinking skills and competencies. Because the outcomes are not properly and clearly communicated in the study guide, it was difficult to find the alignment between the questions in the examination paper and the outcomes (see Figure 3.1). The educational development of the documents is questionable and lack responsiveness to needs of the students and industry and also for students to optimise their learning (see Figure 6.1).

This study interrogated the role of a responsive curriculum on optimising learning in higher education. The intention of the study was to investigate the relationship between a responsive curriculum and the optimisation of learning at a particular HEI in South Africa. The findings relating to the primary research question *how can learning be optimised in higher education through a responsive curriculum?* are as follows:

- Evidence was found that the lecturers had explicit knowledge of what a curriculum is and that it should have an impact on the learning of students. No evidence could be established that the lecturers and the students knew what a responsive curriculum was and how it differs from a normal curriculum. What was evident in the empirical investigation was that the lecturers could not establish whether the existing curricula of the subjects Business Analysis III and IV is a responsive curriculum.

It can therefore be concluded that a responsive curriculum and the role it plays in the optimisation of learning was not clear to all the participants. Only after an explanation from the researcher (explanation done in pilot study, see Par. 4.5.1) the participants understood what a responsive curriculum meant and whether the curricula of Business Analysis III and IV can be regarded as a responsive curriculum, let alone its impact on learning. Flowing from the conclusions the researcher will present a few recommendations. These recommendations stems from the empirical investigation, lecturer interviews, the interviews of the students and the document analysis.

6.5 Recommendations of the study

In the following section the recommendations are put forward.

The curriculum content should be more dated and display relevant information helpful to students to be successful in industry. Industry partners and other stakeholders (students and lectures) should be included in the curriculum development process and quality assurance of the curriculum. Worthy partnerships should be formed with industry and business. Heads of Departments should ensure the involvement of all the mentioned stakeholders in the curriculum development process. Curricula should be developed to be inclusive of disability students and responsive to the needs of industry. The approach to teaching the curriculum should change by being more interactive and by including collaborative teaching methods. Creative teaching strategies (i.e. Think-a-pair-share, Jigsaw, how to use questions) should be employed in teaching the curriculum to students. The latter is posited in the steps by Lovell (2012) to optimise learning. Students should be encouraged through interactive teaching to be co-owners of the learning processes. To compliment interactive and collaborative teaching, lecture halls and other facilities should be improved, to keep abreast with the changing learning and teaching environment. More should be done to improve the language proficiency of the students, because the latter impacts on the learning of the students. Lecturers should be trained in curriculum

design and development and should be allowed to be involved in the quality assurance practices, not only the HOD.

The alignment between practicals and theory is missing and that more time should be spent on this issue. More assistance from the lecturers with regards to the practical side of the curriculum should be given to the students. The textbooks should be changed and because the theory is difficult, more exercises should be given to improve the learning and performance of the students. The theory should be reduced and only relevant information should be provided to the students. The curriculum content should be scrutinised so that the essence of the curriculum is not compromised and also that the curriculum content does not fall outside the scope of a Business Analyst. Outcomes of curriculum content should be structured clearly and defined properly. The latter is supported by SAQA (2009) that learning outcomes also guide students on what they are expected to be able to do in terms of knowledge, skills and attitudes after completing the programme or parts of it. Assignments should be constructively aligned to the abridged content, outcomes and assessment practices.

With regards to the study guides, the lecturers should focus on to enhance the students experience with regards to the subject matter, for example, explaining the educational value of the study guide and putting it into perceptive with the purpose and intent of the subject. Here the researcher especially refers to the BTECH study guide (Business Analysis IV). With regards to the differentiation of questions in the question papers, both subjects Business Analysis III and Business Analysis IV needs to challenge students cognitively in order for them to optimise their learning through the curriculum. Scaffolding from simple to complex questions through the employment of the lower-order and higher order thinking skills should be implemented. Proper assessment methods, aligned to the outcomes and learning activities should be displayed in the documents (study guides and learning material). Differentiation between the assessment methods and assessment tasks should be drawn.

The lecturers should be educated with regards to the changing higher educational landscape and faculty based curriculum development workshops should be provided to lecturers. The lecturers should be exposed to different types of curriculum models and the educational philosophies which underpin these curriculum models, as well as the impact that the curriculum has on learning. The exposure to higher educational policies should be a priority and should form part of lecturer orientation and induction into higher education. The latter is posited in what is

written by the DHET (2012) that the changing HE environment ushered in a continuous change and revamping of pedagogical methodologies.

6.5.1 Recommendations for further research

Several aspects of the curriculum require further research in order to meet the characteristics of a responsive curriculum. These recommendations include investigation into the knowledge required to engage students in such a manner to explore the depths of their prior knowledge, the nature and level of contextual and conceptual knowledge is required to teach the curriculum effectively and methods need to be investigated in which lecturers can transform their own learning facilitation strategies that are pedagogically powerful through the choice of appropriate teaching and learning strategies. Supporting materials should be incorporated into the curriculum to enhance learning. Authentic and relevant contexts that not only relate to students' daily lives, their future workplace and the wider social, political and global environment should be identified, and these contexts should be applied effectively to the required lesson content. The viability of training lecturers in curriculum development, effective questioning techniques and assessment strategies aligned to the outcomes of the curriculum should be investigated.

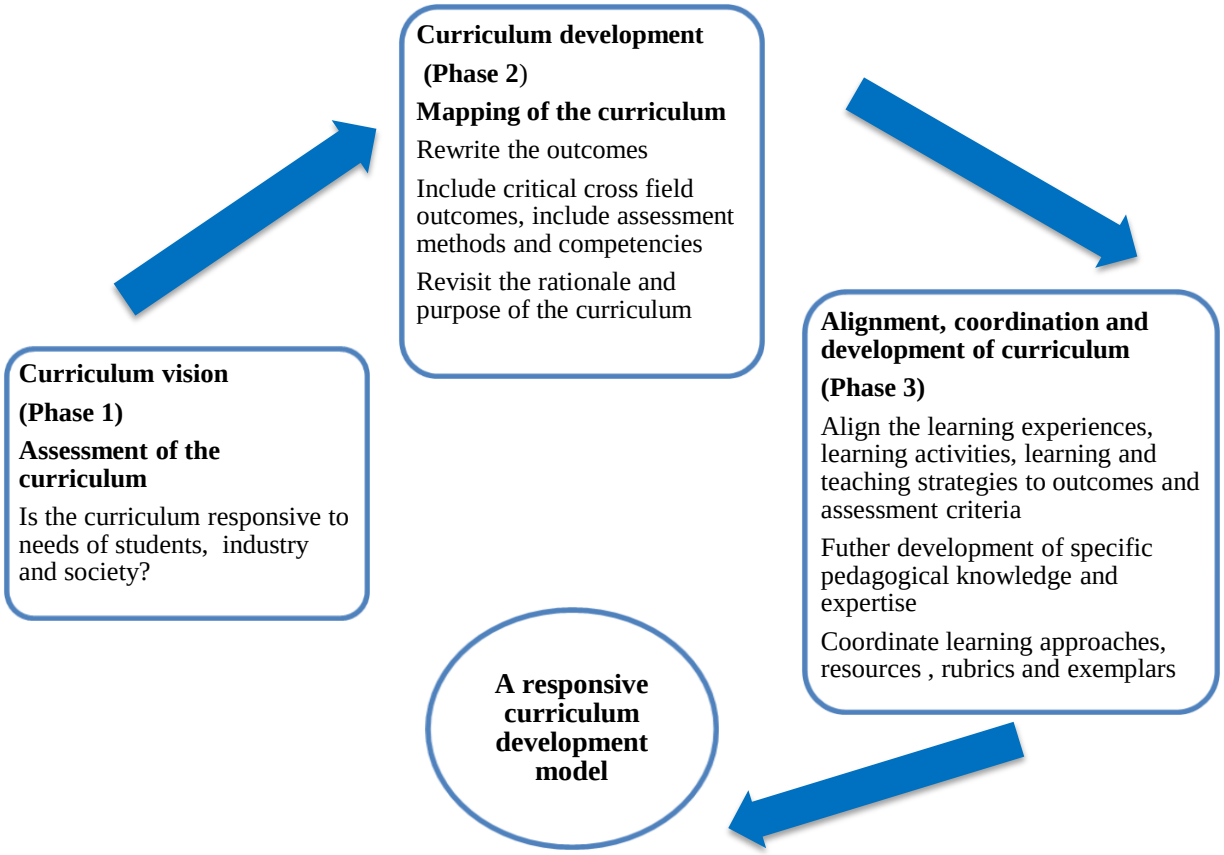
6.6 Recommendation: A responsive curriculum development model

In developing countries, many HEIS experience a growing gap between their curricula and the demands from society, business and industry for a more flexible workforce with high skills (competencies) in problem solving, team work and project management (National Development Plan, 2013).

According to Wolf (2007) the approach to curriculum development should include these high skills which are demanded from society, business and industry. Aware of prior practical and theoretical work on curriculum development, alignment, and assessment which was discussed in Chapter 3, the researcher in particular, wanted to build on a culture that relies on expert disciplinary knowledge and data to make decisions to engage faculty members in a reflective process that they could use to foster continuous improvement of the curriculum. Often this notion will start with an assessment of the curriculum. Taking into account the abovementioned, the researcher developed her own curriculum development model. Components mentioned in Chapter 3 were used as pillars in the development of a responsive curriculum development

model, which can assist academics to improve on the curriculum of Business Analysis III and IV.

Figure 6.1: **A responsive curriculum development model**



This model is grounded on the call for a responsive curriculum that not only addresses the global needs, but also the South African needs of students, industry and society. The South African government propounds that colleges and universities graduates should have the skills and knowledge to meet the present and future needs of the economy and society (National Development Plan, 2013). The South African government is of the opinion that, the single most important investment any country can make is in its people and that education has intrinsic and instrumental value in creating societies that are better able to respond to the challenges of the 21st century. Government further argues that lifelong learning, continuous professional development and knowledge production alongside innovation are central to building the capabilities of individuals and society as a whole (National Development Plan, 2013). In response to the latter the following processes were used in the development of the responsive

curriculum model. This model consists of three phases. Phase 1, the curriculum visioning, Phase 2 the curriculum development and Phase 3 the alignment, coordination and development. Guiding questions are provided in each phase to ensure that the curriculum is responsive to the needs of students, industry and society and that students can experience optimal learning.

The processes which are involved are the following:

- **Curriculum visioning (Phase 1)**

According to Wolf (2007); Biggs (2003), the common impetus or catalyst for many curriculum development initiatives comes from the faculty which is interested in improving its curriculum so as to benefit student learning. In the model above the first step to improve the curriculum or make the curriculum more responsive would be to assess the state of the curriculum. In the curriculum visioning phase, the conceptual and theoretical framework of the model will be based on OBE. Questions to be asked during this phase are:

- Does the curriculum address the needs of the student (individual), industry, community and society?
- Are the outcomes of the curriculum clear?
- What is the aim/purpose of the curriculum (desirable educational experience)?
- What should the levels of complexity be with regards to the content?
- What type of resources should be used?
- How will the teaching and learning be aligned to the content?

- **Curriculum development (Phase 2)**

In this phase the curriculum mapping is a process for collecting and recording curriculum-related data that identifies core skills and content taught, processes employed, and assessments used for each subject area and grade level. The important questions to ask in this phase are:

- Is there a need to re-write the purpose, rationale and outcomes of the curriculum after the assessment of the curriculum was done?
- What type of teaching strategies can be used to inform different competencies and how can all the different competencies by addressed in the curriculum?
- On what type of educational theory will the assessment strategy be grounded?

- What is the educational focus of the assessment strategy?
- What content standards and program- or mission-related goal(s) will this curriculum address?
- What kinds of long-term, independent accomplishments are desired (transfer goals)?
- What thought-provoking questions will foster inquiry, meaning-making, and transfer?
- What specifically do you want students to understand? What important ideas do you want them to grasp? What inferences should they make? What misconceptions are predictable and will need overcoming?
- What facts and basic concepts should students know and be able to recall?
- What discrete skills and processes should be used?
- What criteria will be used in each assessment to evaluate attainment of the desired results?
- What other evidence will one collect to determine whether the outcomes were achieved?
- How will one pre-assess and formatively assess the set outcomes? How will you adjust, if needed (as suggested by feedback)?
- How does one consider how to fully engage everyone and hold their interest throughout?

- **Alignment, coordination and development (Phase 3)**

In this phase the focus will be to determine the action to be taken and the evaluation of the curriculum. Here it is important to evaluate whether the curriculum is correctly aligned in terms of its purpose, outcomes, assessment and teaching and learning strategies and methods. It is also important to have followed-up activities which will include further curriculum development workshops by specialists. The purpose of the latter will be to review the study guides, developing rubrics and exemplars at differing levels of skills development and implement active learning strategies. Here the questions that can be asked are:

- Is there tight alignment across all the phases (1, 2 and 3)?
- Does the learning plan reflect principles of learning and best practices?
- What assessments will provide valid evidence of transfer and understanding?
- What type of follow-up activities can be employed to improve the alignment?
- What type of information should be in the study-guides and learning material to address the alignment principles?

Concluded from the aforementioned model is that all the phases should be followed during the curriculum design process and the guiding questions at each phase should be reflected upon in achieving the purpose, the rationale, the intent, educational value and the responsiveness of curriculum to optimise learning in HE.

6.7 Strengths of the research

Due to the nature of the study, the researcher was able to gather in-depth descriptions of the participants' experiences of the role of a responsive curriculum in optimising learning in HE. Through the interviews and documents the trustworthiness of the study were increased. As the researcher was part of the management team in the faculty, she had already developed a connection with the participants, which may have made it easier for the participants to feel more comfortable in the interviewing process and also availing their documents. Finally, it would appear that the study provided a platform for the participants to express themselves with regards to the curricula mentioned in the study. The opportunity to partake in this study, allowed the lecturers in particular to reflect on the content and relevance of the curricula, as well as their instruction of this particular curricula. Through reflectivity, it has been noted that individuals gain a better understanding of their practices (Kingwill, 2016).

6.8 Summary

The aim of this research was to investigate how learning can be optimised in HE through a responsive curriculum and to determine whether the curriculum at the Tshwane University of Technology is responsive and if students experiences optimal learning at the institution. A qualitative research design with a case study, as an approach, was followed in this study. After describing the literature and examining the definitions of responsiveness and optimisation of learning, the study concentrated on discovering the perceptions of 3 lecturers and 12 students by means of semi-structured interviews and document analysis. The participants agreed that the curriculum should become more responsive to the needs of the students and industry and that the curriculum can impact on the learning of the students. Important issues with regards to the curricula of Business Analysis III and IV highlighted the former (see Par.5.8).

To conclude, the researcher argues that these findings underscore a critical issue to the qualifications that were studied. It is the researchers believe that these findings provide a foundation for the development and improvement of curricula in HEIs, by providing information and models in designing a responsive curriculum which can optimise learning. The responsive

curriculum model mentioned in this chapter (see Figure 6.1) might be of assistance with regards to developing a responsive curriculum which can optimise learning in HEIs.

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Appendix 1: Request letter to faculty to conduct research

Tel: (012) 382 9166

Fax: (012) 382 5987

E-mail: humann@tut.ac.za

Dear Mr. P.Pretorius

REQUEST PERMISSION

The rapidly changing demands of the world of work, impacts directly on the higher education environment to adhere to optimising potential and learning. The higher educational system must thus transform their objectives, curricula, pedagogies and assessments to help students to attain the sophisticated outcomes requisite for a prosperous, attractive lifestyle on effective contributions in work and citizenship.

The aim of the study is to determine whether higher education adheres to these demands and whether the curriculum responds to the challenges and trends of the world of work, and society. To achieve the latter I would kindly request your permission to make the department of Informatics part of my studies and to have access to the relevant materials (study guides, teaching and learning materials), lecturers and students.

The perceptions of lecturers and students concerning the curriculum (study guides, teaching and learning materials) and its purpose as implemented in the subjects Business Analysis, third year (Diploma) and BTECH, will be considered.

Data collection by means of semi-structured interviews will be implemented. Consent forms will soon follow. The latter still has to be ethically cleared by the HEDS REC and the institutional ethics committee.

This research is done towards partial fulfillment of the D ED (Curriculum Studies) qualification, with the title: "**The role of a responsive curriculum on optimizing learning in Higher Education**."

The department's co-operation in this regard will be highly appreciated.

Thank you very much.

X

N.E. Human-Hendricks
Curriculum Development Practitioner

Rev. Nadia Human-Hendricks

Appendix 2: Letter of permission from faculty to conduct research

Tshwane University of Technology
We empower people

Faculty of Information and Communication Technology (ICT)

Department of Informatics

To:	To Whom It May Concern
From:	Mr P Pretorius Acting HOD
Date:	23 October 2013
Re:	Research in subjects of Department Informatics

Dear Rev. Nadia Human-Hendricks

This is to confirm that the Department Informatics grant permission to your request to assist in your research in the Department Informatics given that the necessary ethically clearance is provided by the HEDS REC and the institutional ethical clearance committee.

You indicated that your research require access to the relevant materials (study guides, teaching and learning materials), lecturers and students to determine the perceptions of lecturers and students concerning the curriculum (study guides, teaching and learning materials) and its purpose as implemented in the subjects Business Analysis, third year and BTech.

Your request will also be tabled at the next Informatics and EUC DRIC meeting for note taking. Please liaise with Prof George Ditsa or Dr Agnieta Pretorius to assist you with the FREC application.

Thanking you.

Mr P Pretorius
Acting HOD
Department Informatics
Tshwane University of Technology
pretoriusp@tut.ac.za
Tel: 012 382 9287

TSHWANE UNIVERSITY OF TECHNOLOGY
2013 -10- 23
FACULTY: ICT
DEPARTMENT OF INFORMATICS

Prof JL Munda
Acting Dean

Tshwane University of Technology
MundaJL@tut.ac.za
Tel: 012 382 9689

Appendix 3: Cover letter

UNISA | college of education

COVER LETTER – INTERVIEW

PROJECT TITLE: THE ROLE OF A RESPONSIVE CURRICULUM IN OPTIMISING LEARNING IN HIGHER EDUCATION

Primary investigator: Rev. Nadia Human-Hendricks, Med (Curriculum Development and Instructional Design)

Study leader: Prof C Meier PHD Department of Teacher Education

College of Education University of South Africa

Dear Research participant,

You are invited to be part of the semi-structured interviews that forms part of my formal D Ed in Curriculum Studies.

BACKGROUND TO THE RESEARCH

In the 21st Century the capabilities that people need for work, citizenship and self-actualisation are different to that of the 20th century. Thus in response society's educational systems must transform their curricula objectives, pedagogies and assessments to help all students attain the sophisticated outcomes requisite for a prosperous, attractive lifestyle based on effective contributions in work and citizenship.

Therefore education should prepare students for a world in which expert thinking and complex communications are the core intellectual capabilities by which people attain prosperity, economic security individually and maximise their potential. These higher order learning and performances are influenced by Higher Education, its curricula and assessment methods. Higher education should transform to reflect the changes that are taking place in society and create a learning society which releases the creative and intellectual energies of all individuals.

What will be required of you?

If you participate in the study, you will be required to be part of a semi-structured interview. You will be asked to respond to questions regarding your understanding of a curriculum. It should not take more than 30 minutes to complete.

Who will not be able to participate?

You will not be eligible to participate in the interview if you are not a 3rd year or B Tech Business Analysis student or lecturer in the department of Informatics in the Faculty of ICT.

Is there any foreseeable risk for the participants in this study?

Completion of the semi-structured interview involve no foreseeable emotional discomfort or inconvenience to you or your family. Your identity will be protected with a coding system for all participants when the results of the study is reported or published.

Are there potential benefits in participation?

The results of the semi-structured interview will have no direct personal benefit to you, but you will make a contribution towards a better understanding of the role of a responsive curriculum on the optimising of students learning and potential within a Higher Educational institution.

What are your rights as a participant in this study?

Your participation in this study is entirely voluntary and anonymous. You have the right to withdraw at any stage without any penalty or future disadvantage whatsoever. You don't even have to provide the reason/s for your decision. Your withdrawal will in no way influence your continued relationship with the research team. Note that you are not waiving any legal claims, rights or remedies because of your participation in this research study. All information obtained from the interview is strictly confidential.

Confidentiality and Anonymity

I wish to point out that despite one's best efforts; there are hardly any qualitative researchers in the world, including myself, who can guarantee anonymity in an absolute sense.
All the data that you provide in the interview will be handled confidentially. This means that access to your data will be strictly limited to the researcher, the supervisors of the study and the designated examiners (appointed by UNISA). Also, your responses and personal information will be kept and stored in a confidential format that will only be accessible to the researcher. Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. The information received during the project will only be used for research purposes and will not be released for any employment-related performance evaluation, promotion and/ or disciplinary purposes the results of this study might be published in a scientific journal and/or presented at scientific meetings, but again without revealing the identity of any research participant. Interviews will be audio-recorded, transcribed and

coded, all of which will be kept in a safe place and will be destroyed after five years.

Did the researcher get ethical approval for the study?

The Faculty Higher Degrees Committee of UNISA and the Research Ethics Committee of the Tshwane University of Technology have approved the formal study proposal.

The primary investigator (researcher), Rev. N.E. Human-Hendricks, can be contacted during office hours at Tel (012) 382-9166, or on her cellular phone at 0793572344. The study leader (supervisor), Prof C Meier, can be contacted during office hours at Tel 0836608394. Should you have any questions regarding the ethical aspects of the study, you can contact the chairperson of the TUT Research Ethics Committee, Dr WA Hoffmann, during office hours at Tel (012) 382-6265/46, E-mail hoffmannwa@tut.ac.za or the chairperson of UNISA Research Ethical Committee , Dr. M. Claassens during office hours at Tel. (012) 3460701, E-mail mcdtc@netactive.co.za. Alternatively, you can report any serious unethical behaviour at the University's Toll Free Hotline 0800 21 23 41.

Declaration on conflict of interest

The researcher declares that there is no conflict of interest and no vested interest other that academic gain of knowledge and understanding of the object of the study. The researcher is an informed insider, but will exercise disciplined subjectivity and nobodies employment vulnerability will be compromised as the data are only for research purposes.

Your co-operation and participation in the study will be greatly appreciated.

Appendix 4: Information leaflet and informed consent

UNISA | college of education

INFORMATION LEAFLET AND INFORMED CONSENT

PROJECT TITLE: THE ROLE OF A RESPONSIVE CURRICULUM IN OPTIMISING LEARNING IN HIGHER EDUCATION

Primary investigator: Rev. Nadia Human-Hendricks

Study leader: Prof. C. Meier (UNISA)

Dear Research participant,

You are invited to participate in a research study that forms part of my formal D.Ed. (Curriculum Studies). This information leaflet will help you to decide if you would like to participate. Before you agree to take part, you should fully understand what is involved. You should not agree to take part unless you are completely satisfied with all aspects of the study.

WHAT IS THE STUDY ALL ABOUT?

Main Aim

The main aim of this research is to determine if higher education students' learning can be optimised through a responsive curriculum. With a responsive curriculum I mean a curriculum that promotes the development of a whole child, intellectually, socially, physically and intellectually. This type of curriculum, instruction and assessment represents a model of learning to support all students in achieving the knowledge, skills and attitudes necessary to succeed in life, society, world of work and to maximise their human potential.

I would like to learn more about the role of a responsive curriculum in Higher Education. More importantly, I hope the result of the study will be useful in further advancing knowledge in Higher Education.

The names of the participants and institution will remain confidential. I wish to point out that despite one's best efforts; there is hardly any qualitative researcher in the world, including myself, who can guarantee anonymity in an absolute sense.

Data collection will involve a range of standard qualitative techniques such as interviews and document analysis. All data will be treated anonymously and confidential.

WHAT WILL BE REQUIRED FROM YOU TO DO IN THE STUDY?

The acting Executive Dean of the Faculty, Prof Josiah Munda and Mr Pieter Pretorius (Acting Head of Department for Informatics) supports this research project and has given their permission for this intervention to go ahead. See attached letter

If you decide to take part in the study, you will be required to:

- Sign this informed consent form;
- Participate in a semi-structured interview during an agreed time slot if you are selected;
- Supply researcher with your study guide and study material.

ARE THERE ANY CONDITIONS THAT MAY EXCLUDE YOU FROM THE STUDY?

To participate in the study you should either

- be a lecturer in the Department of Informatics lecturing third year or BTECH students in Business Analysis; or
- Be a student studying this qualification in the Department of Informatics.

CAN ANY OF THE STUDY PROCEDURES RESULT IN PERSONAL DISCOMFORT OR INCONVENIENCE?

The study and procedures involve no foreseeable physical discomfort or inconvenience to you. Time for data collection will be made available during work hours or lunch times.

WHAT ARE THE POTENTIAL BENEFITS THAT MAY COME FROM THE STUDY?

The benefits of participating in this study are:

- You will make a contribution towards establishing/creating an understanding of what a responsive curriculum is and how it impacts on learning in Higher Education, particular to this institution.

- This study could, on a national level, change the role of a responsive curriculum in the optimising of the potential of students.

WILL YOU RECEIVE ANY FINANCIAL COMPENSATION OR INCENTIVE FOR PARTICIPATING IN THE STUDY?

Please note that you **will not** be paid to participate in the study.

WHAT ARE YOUR RIGHTS AS A PARTICIPANT IN THIS STUDY?

Your participation in this study is entirely voluntary.

HOW WILL CONFIDENTIALITY AND ANONYMITY BE ENSURED IN THE STUDY?

I wish to point out that despite one's best efforts; there are hardly any qualitative researchers in the world, including myself, who can guarantee anonymity in an absolute sense. All the data that you provide in the interview will be handled confidentially. This means that access to your data will be strictly limited to the researcher, the supervisors of the study and the designated examiners (appointed by UNISA). Also, your responses and personal information will be kept and stored in a confidential format that will only be accessible to the researcher. Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. The information received during the project will only be used for research purposes and will not be released for any employment-related performance evaluation, promotion and/ or disciplinary purposes the results of this study might be published in a scientific journal and/or presented at scientific meetings, but again without revealing the identity of

any research participant. Interviews will be audio-recorded, transcribed and coded, all of which will be kept in a safe place and will be destroyed after five years.

WHAT ARE YOUR OBLIGATIONS CONCERNING THE PROTECTION OF INTELLECTUAL PROPERTY?

The faculty, department and participants will receive feedback on the outcome of the study. The researcher further undertakes to not reveal or share with any outside party details of documents and materials developed by the department and faculty. Developments are subject to the Policy on Intellectual property of the Tshwane University of Technology.

IS THE RESEARCHER QUALIFIED TO CARRY OUT THE STUDY?

The researcher is a Curriculum Development Practitioner working in the Directorate Curriculum Development and Support at the Tshwane University of Technology. The researcher will be guided by her study leader, Prof. C. Meier.

HAS THE STUDY RECEIVED ETHICAL APPROVAL?

Yes. The Higher Education Development and Support Directorate REC and the Faculty of ICT Research Ethics Committee of the Tshwane University of Technology approved the formal study proposal. The College of Education, UNISA, also approved the projected thesis. Contact details of the chairperson UNISA REC, Dr.Claassens (012) 346 0701 or 0829402693 [Ref.2014 March/47278978/MC]. The TUT Ethical Committee contact details of the HEDS-REC / TUT-REC chairperson WA HOFFMANN (Dr) Chairperson: Research Ethics Committee [Ref#2013=12=002=Human-HendricksN]

WHO CAN YOU CONTACT FOR ADDITIONAL INFORMATION REGARDING THE STUDY?

The primary investigator, Rev. Nadia Human- Hendricks can be contacted during office hours at Tel (012) 382-9166, or on her cellular phone at 0793572344. The study leader, Prof Corrine Meier, can be contacted at 0836608394.

DECLARATION: CONFLICT OF INTEREST

There is no conflict of interest. The researcher is an informed insider, but will exercise disciplined subjectivity and nobodies employment vulnerability will be compromised as the data are only for research purposes.

A FINAL WORD

Your co-operation and participation in the study will be greatly appreciated. Please sign the underneath informed consent if you agree to partake in the study. In such a case, you will receive a copy of the signed informed consent from the researcher.

INFORMED CONSENT

I hereby confirm that I have been adequately informed by the researcher about the nature, conduct, benefits and risks of the study. I have also received, read and understood the above written information. I am aware that the results of the study will be anonymously processed into a research report. I understand that my participation is voluntary and that I may, at any stage, without prejudice, withdraw my consent and participation in the study. I had sufficient opportunity to ask questions and of my own free will declare myself prepared to participate in the study.

Research participant's name: _____ (Please print)

Research participant's signature: _____

Date: _____

Researcher's name: _____ (Please print)

Researcher's signature: _____

Date: _____

Appendix 5: Ethical clearance from UNISA

UNISA | college of education

Research Ethics Clearance Certificate

This is to certify that the application for ethical clearance submitted by

N Human-Hendricks [47278978]

for a D Ed study entitled

The role of a responsive curriculum in optimizing learning in Higher Education

has met the ethical requirements as specified by the University of South Africa College of Education Research Ethics Committee. This certificate is valid for two years from the date of issue.

Prof KP Dzvimbo
Executive Dean : CEDU

Dr M Claassens
CEDU REC (Chairperson)
mcdtc@netactive.co.za

Reference number: 2014 MARCH/47278978/MC

18 March 2014

Appendix 5.1: Ethical clearance letter from TUT

Tshwane University of Technology

Research Ethics Committee

The TUT Research Ethics Committee is a registered Institutional Review Board (IRB 00005968) with the US Office for Human Research Protections (IORG# 0004997) (Expires 19 Jan 2014). Also, it has Federal Wide Assurance for the Protection of Human Subjects for International Institutions (FWA 00011501) (Expires 31 Jan 2014). In South Africa it is registered with the National Health Research Ethics Council (REC-160509-21).

March 27, 2014

REC Ref #: 2013/12/002
HEDS REC Ref #: 2013/11/002
Name: Human-Hendricks N
UNISA Student #: 4727-897-8

Rev N Human-Hendricks
C/o Prof C Meier
College of Education
UNISA

Dear Rev Human-Hendricks,

Decision: Final Approval

Name: Human-Hendricks, N
Proposal: *The role of a responsive curriculum in optimising learning in higher education*
Qualification: D Ed Curriculum Studies, UNISA
Supervisor: Prof C Meier

Thank you for submitting the revised project documents for ethics clearance by the TUT Research Ethics Committee (REC). In reviewing the application, the comments and notes below are tabled for your consideration, attention and notification:

- **UNISA Ethics Approval**
  - The UNISA Research Ethics Clearance certificate (Ref #: 2014 MARCH/47278978/MC, dated 18 March 2014) is duly noted.
- **Data Collection**
  - **Participant Recruitment Strategies**. The proposed sample recruitment strategy is in order and duly noted.

- **Interview Guides – Lecturers & Students**

  - The revised interview guides are in order and duly noted.

- **Information Leaflet & Consent document - Lecturers**

  - The revised Information Leaflet and Informed Consent document is in order and duly noted.

- **Cover Letter - Interview (Students)**

  - **"How will confidentiality and anonymity be ensured in the study"**. Kindly correct the current statement that incorrectly refers to "employment-related" vulnerabilities with the following statement (as indicated in the previous letter) regarding the student participants' potential **academic vulnerability** in this study: "*The information received during the project will only be used for research purposes and not be released for any* ***academic assessment, study progress and/or disciplinary purposes****. Also, the information received during the project will not be released for any employment-related performance evaluation, promotion and/or disciplinary purposes of TUT staff members*".
  - The rest of the revised Cover Letter (Student Interviews) is in order and duly noted.

The Chairperson of the Research Ethics Committee of Tshwane University of Technology reviewed the revised documents on March 27, 2014. **Final approval** is granted to the study. The decision will be tabled at the next REC meeting on April 14, 2014 for ratification.

The proposed research project may now continue with the proviso that:

1) The researcher/s will conduct the study according to the procedures and methods indicated in the approved proposal, particularly in terms of any undertakings and/or assurances made regarding informed consent and the confidentiality of the collected data.

2) The proposal (inclusive of the applicable information leaflet/s, informed consent document/s, interview guide/s and/or questionnaire/s) will again be submitted to the Committee for prospective ethical clearance if there are any substantial changes from the existing proposal, particularly if those changes affect any of the study-related risks for the research participants.

3) The researcher will act within the parameters of any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study.

Note:
The reference number [top right corner of this communiqué] should be clearly indicated on all forms of communication [e.g. Webmail, E-mail messages, letters] with the intended research participants.

Annual review:

1. The formal ethics approval of all research projects need to be renewed on an annual basis.
2. The current ethics approval expiry date for this project is **June 30, 2015**.
3. No research activities may continue after the ethics approval expiry date indicated on the formal Research Ethics Committee approval letter.
4. The Research Ethics Progress Report (electronic copy available at the following website: http://www.tut.ac.za/Other/rninew/ResearchEthicsCommittees/Pages/default.aspx) constitutes an application for such ethics approval renewal and must be submitted to the REC by **May 15, 2015**.

Yours sincerely,

WA HOFFMANN (Dr)
Chairperson: Research Ethics Committee
[Ref#2013=12=002=Human-HendricksN]

Appendix 6: Semi-structured interview

Lecturers only

PART A: Personal Particulars

The participants will be asked about years at TUT as well as their position in the department and their will also be asked about their qualifications. This information will be collected to contextualise the respondents and to put them at ease.

Perceptions of curriculum experiences

Meaning of curriculum

A curriculum could be defined as a" formal academic plan for learning experiences of students." As a set of materials, a curriculum can be defined as a document which includes details about goals, objectives, content, teaching, techniques, evaluation, assessment and resources

PART B: CURRICULUM PURPOSES

Please answer the following with regards to the purposes of the curriculums of Business Analysis III and IV

1. Taking your context in consideration, please answer the following questions:
    1.1. What is the purpose of a curriculum?
    1.2. What is your involvement in the designing of the curriculum (development of study guides, learning and teaching material and content of courses)?
    1.3. Who is involved in designing the curriculum?
    1.4. Do you think it is important for the support structures to be involved in the development and design of the curriculum? Why?
2. Do you regard the curriculum as responsive to the needs of industry, society, culture and the students?
    2.1. How involve is industry, society and students in the development of the curriculum?
3. Would you regard the curriculum as developmental and inclusive?
    3.1. Does the curriculum provide the opportunity for the students to optimise their learning potential?
    3.2. How frequently are the curriculum quality assured and are you involved in this process?
4. Do you think curriculum development procedures are more emphasised than the lecturer's own initiatives?

5. Is there anything you would like to mention with regards to purpose of the curriculum?

INTERVIEW QUESTIONS: STUDENTS

The participants will be asked in which subject they study (Business Analysis III or IV) and also the qualification they are studying towards. This information will be collected to contextualise the respondents and to put them at ease.

Perceptions of curriculum experiences.

Meaning of curriculum

A curriculum could be defined as a" formal academic plan for learning experiences of students." As a set of materials, a curriculum can be defined as a document which includes details about goals, objectives, content, teaching, techniques, evaluation, assessment and resources

PART C: CURRICULUM EXPERIENCE

Draw on the totality of the experience in the subject, **Business Analysis III and IV** when responding to the questions.

1. Taking your encounter with curriculum in consideration, please answer the following questions:

   1.1. What are your main impressions of the curriculum?
   1.2. Do you understand the purpose and the intent of the curriculum?
   1.3 Do you regard the curriculum as structured and developmental (here think about the alignment of the learning and teaching material, the pre-scribed text books and study guides)

2. Do you experience the curriculum responsive to your needs, the needs of the society and industry?
3. Are the outcomes clearly structured within the curriculum?

   3.1. Is the curriculum emotionally and intellectually stimulating?
4. Does the curriculum identify essential skills and competencies to help you in optimising your potential and to be relevant in industry?
5. Would you regard the curriculum as relevant?
6. Is there any other thing you would like to mention with regards to your experience with the curriculum?

PART E: CURRICULUM PROBLEMS OR CHALLENGES AND THEIR CAUSES

LECTURERS AND STUDENTS

1. Name at least three problems or challenges and their causes, if any, you have experienced concerning the curriculum activities:

Thank you very much for taking time to respond to this interview

Appendix 6.1: Participant 6.1 response to the interview questions

How long you working here, position in department, and what are your qualification?
Teaching experience 10 years, Masters in Business Admin.
Teaching Subject: Business Analysis IV (BTECH lecturer).

Part B Curriculum purpose; questions	Reponses
1. Taking your context in consideration, please answer the following questions	
1.1. What is the purpose of a curriculum?	Business Analysis is seen from the internal perspective- organisation policies, practices and curriculum engaging students. Curriculum is to provide a guideline, content, what a course entails. Give direction what we teach, curriculum not all over the place.
1.2 What is your involvement in the designing of the curriculum (development of study guides, learning and teaching material and content of course)	I am involved in the development of the curriculum. I participate in committees such as advisory boards and in the development of the study guide and evaluating study guides.
1.3 Who is involve in developing the curriculum	Lecturers, external (advisory committees) the HOD, sectional heads and curriculum officer provides feedback and guidance.
1.4. Do you think it is important for the support structures to be involved in the development and design of the curriculum? Why?	Support from curriculum development officer who provides expertise, unlike the lecturers who has another role to play.
2. Do you regard the curriculum as responsive to the needs of industry, society, culture and the students	Responsive curriculum versus content this does speak to needs of society and is responsive to practices,. The policy of TUT clear with regard to assessment and is aligned to institution practices.
2.1. How involve is industry, society, culture and the students?	Industry is highly involved, local community not involved, should be involved, has to do with the assumptions institutions have about the local community. Student potential to be involved especially BTECH students are in industry should be able to sit in on curriculum development. Students should be involved but is currently not involved.
3. Would you regard the curriculum as developmental and inclusive?	Yes the curriculum is developmental. To me inclusiveness is a relative term. Inclusiveness entails the study guide with specific outcomes which should address challenges in practice. It

	should be able to relate to other environments and link to other disciplines and the real world. Include disciplines experience lectures versus inexperience's practices.
3.1. Does the curriculum provide the opportunity for the students to optimise their learning	Yes it does provide them with the ability to work in real life situations, through the practicals and case studies.
3.2. How frequently are the curriculum quality assured and are you involved in this process?	Quality assurance is done every semester. Yes I am involved by evaluating study guides, question papers. There are a lot administrative issues involved in quality assurance. The reviewing content through advisory committees.
4. Do you think curriculum development procedures are more emphasised than the lecturer's own initiatives?	Lecturers need to be creative, and have to encourage student to be creative. Link creativity with teaching the curriculum.
5. Is there anything you would like to mention with regards to purpose of the curriculum?	The curriculum serves an important purpose for any educational organisation. The curriculum should be well developed, clear expectations should be set and that the curriculum should bring order to the learning.
Part E 1. Name at least 3 problems or challenges and their causes, if any you have experienced concerning the curriculum activities	Main challenges: Teaching practice, how we teach and assess. There are diverse set of students with regards to experience, differentiation of curriculum important, creative approach. Curriculum speaks to industry and first time students. Experience impact on the profile of students and the ability of the students to maximise their potential. But infrastructure does not maximise other methods of teaching for e.g. lecturer halls. The way the lecture halls are build does not encourage round table engagements and group work in subjects Business Analysis, group dynamics and implementation of curriculum are compromised.

Appendix 6.2: Participant 6.2 response to the interview questions

How long you working here, position in department and what are your qualification?
Teaching experience 10 years, Masters in Information Technology.
Teaching Subject: Business Analysis III (30AT) (Diploma lecturer).

Part B Curriculum purpose; questions	Reponses
1. Taking your context in consideration, please answer the following questions	
1.1. What is the purpose of a curriculum?	Purpose of the curriculum should be transparent to needs of industry and needs of country. Improve quality of student education.
1.2. What is your involvement in the designing of the curriculum (development of study guides, learning and teaching material and content of course)	Very involved in developing own the study guide and evaluating study guides using TUT study guide template, dissemination of knowledge to everyone and assisting in development of blue files. Only one involved developing the Diploma and involved in advisory committees.
1.3 Who is involve in developing the curriculum	Mostly the HOD's who is involved in developing important documents such as the business plans. The implication is a one person perspective. Junior and part-time lecturers not fully involved in development of curriculums.
1.4. Do you think it is important for the support structures to be involved in the development and design of the curriculum? Why?	Not at designing level, department have to drive the design of curriculum. But at implementation level support structures should be involved. Should be a 50/50 % partnership.
2. Do you regard the curriculum as responsive to the needs of industry, society, culture and the students	No not the current curriculum for Business analysis III. This curriculum does fundamentals, but curriculum is outdated not responsive.
2.1. How involve is industry, society, culture and the students?	Industry is involved on the level of the advisory committee. Five advisory board meetings were scheduled for the year and none materialised. Society not involved. Lecturer sees it as a broad term (society). Only master's students are involved in the curriculum design process, but minimally. The part-time lecturers are rarely included in this process. One lecturer runs the show.
3. Would you regard the curriculum as developmental and inclusive?	No the curriculum is not inclusive and also not developmental as the content is outdated. Students are not supported enough thus no growth is noticeable from Business analysis second year to third year.
3.1 Does the curriculum provide the opportunity for the students to optimise their learning?	No, I do encourage students to optimise their learning potential. I am concerned with the type of cohorts coming to study at the institution. They not always motivated to be

	successful. I strongly feels that curriculum is not developmental
3.2 How frequently are the curriculum quality assured and are you involved in this process?	The evaluation of a study guide it not quality assurance. To be involved in the quality assurance process one should be a program manager. Although the department encourages the quality assurance of the curriculum at departmental level, not everyone is involved. Whether this is properly done is another question. (Here the lecturer referred to the quality assurance of the content file of the subject and also the question papers).
4. Do you think curriculum development procedures are more emphasised than the lecturer's own initiatives?	There is a balance from between own practices, policies and procedures that's needed to be followed. Creative curriculums should change policies.
5. Is there anything you would like to mention with regards to purpose of the curriculum?	No
Part E 1. Name at least 3 problems or challenges and their causes, if any you have experienced concerning the curriculum activities	Constant changes that take place to already decided curriculum documents complicate the curriculum activities and also pose a challenge in teaching these curricula. Commitment by senior staff members. Teaching changed due to insufficient English proficiency of students (basic English is lacking: using correct verbs and nouns). No dedication from students impacts on how they approach curriculum activities. Student's perceptions money versus passion.

Appendix 6.3: Participant 6.3 response to the interview questions

How long you working here, position in department and what are your qualification?
Teaching experience 2 years, Masters in Business Application.
Teaching Subject: Business Analysis III (30AT) (Diploma lecturer)

Part B Curriculum purpose; questions	Reponses
1. Taking your context in consideration, please answer the following questions	
1.1. What is the purpose of a curriculum?	Purpose of the curriculum should be to structure and organise the course outcomes.
1.2. What is your involvement in the designing of the curriculum (development of study guides, learning and teaching material and content of course)?	Yes, I am involved, in developing the curriculum. Find it challenging because I feel that I am not always clued up with regards to curriculum development.
1.3 Who is involve in developing the curriculum	Only one person, HOD involved in the development of the curriculum.it is crucial that other should get in the development of the curriculum. It is critical that students should also be involved in the curriculum development processes
1.4. Do you think it is important for the support structures to be involved in the development and design of the curriculum? Why?	Yes, collaboration is important between the department and support services. At least once or twice year collaboration should take place.
2. Do you regard the curriculum as responsive to the needs of industry, society, culture and the students	Somehow the curriculum is responsive, but needs to change and benchmark against other institutions. ICT is dynamic and changes constantly, that is why the curriculum should be compared to other institutions to see whether students are equipped with the proper information.
2.1. How involve is industry, society, culture and the students?	Students and society are not involved in the curriculum processes, not sure if they are involved the initial curriculum design processes. Industry is a little bit involved, but I still feel that the department works in silos with regards to the curriculum of Business Analysis III.
3. Would you regard the curriculum as developmental and inclusive	No inclusiveness, students are been observed at in general not at their disabilities.
3.1. Does the curriculum provide the opportunity for the students to optimise their learning	Yes it does. Based on the subject content (Statistics and Databases) they are doing something totally knew. The lecturer teaches Statistics and this involves critical thinking
3.2. How frequently are the curriculum quality assured and are you involved in this process?	Not really involved in the quality assurance processes. Curriculum is sent to the curriculum development practitioner to do the quality

	assurance. But I feel that as a program manager, I should be involved the quality assurance processes. For that matter all lecturers should be involved. The relevance aspect is considered but not in detail.
4. Do you think curriculum development procedures are more emphasised than the lecturer's own initiatives?	No room for creativity, due to the fact that everyone is not involved in curriculum development. The lack of basic knowledge of curriculum procedures also impacts on the latter. Even if they can be creative they will not know where to start.
5. Is there anything you would like to mention with regards to purpose of the curriculum?	Yes to the purpose of the curriculum. It should be a competitive tool at times. Look at the other institutions based on content curriculum. Repeating content from other institutions, to find out why UP students is preferred than TUT students.
Part E 1. Name at least 3 problems or challenges and their causes, if any you have experienced concerning the curriculum activities	The lack of sufficient curriculum training impacts on the ability of us as lecturers to develop proper learning material that will enhance learning. Affiliation with other institutions should be implemented, especially with regards to the area of Business Analysis and Project Management.

Appendix 6.4: Participant 6.4 response to the interview questions

Teaching Subject: Business Analysis III Diploma (Female)

Part C Curriculum experience	Reponses
1. Taking your encounter with the curriculum into consideration please answer the following questions	
1.1. What is your main impressions of the curriculum	My main concern is that the programming is difficult and that I do not understand its relevance with regards to the curriculum.
1.2. Do you understand the purpose and the intent of the curriculum?	Purpose is of the curriculum not clear; do not understand the purpose and intent of the subject. My main concern is the programming aspect and its relevance and also that it is difficult.
1.3. Do you regard the curriculum as structured and developmental? Think here about the alignment of the learning and teaching material, the pre-scribed text books and study guides).	Curriculum is structured yes, but I do not regard it as developmental. There are still a lot of things to be learned. And do not understand the relevance of all the content which is in the textbooks. Sometimes irrelevant.
2. Do you regard the curriculum as responsive to your needs, the needs of society and industry	No not responsive to the needs of industry, society or my own because I just have to study the content in textbooks.
3. Are the outcomes clearly structured within the curriculum?	No, it is not clearly structured the outcomes. Do not understand the aim and goal of the outcomes.
3.1. Is the curriculum emotionally and intellectually stimulating?	Some parts of the curriculum, yes, you cannot approach second chapter if you do not know first chapter. Sequence important.
4. Does the curriculum identify essential skills and competencies to help you in optimising your potential and to be relevant in industry?	Some skills yes, on Business Analysis. You have to conduct surveys, skills like doing interviews; research might be taught in this portion of the curriculum. Might use skills in industry but have to learn more before I go into industry. Business Analysis also improves student's critical thinking skills.
5. Would you regard the curriculum as relevant?	About 50% of the curriculum is relevant. Can improve curriculum to be competitive.
6. Is there any other thing you would like to mention with regards to your experience with the curriculum?	The student needed a comprehensive explanation here .I feel that the first 3 months into the curriculum was fine, but I needs to engage more with the curriculum to understand the purpose and intent of the curriculum.
Part E (reflection on Business analysis III) 1. Name at least three problems or challenges and their causes, if any, you have experienced concerning the curriculum activities	Changes, improvement: More exercises and engagement in with the curriculum should be provided. The lecturers' approach to teaching the subject should improve and involvement of lecturers in the class should increase. Practical is fine

	and it is well explained, but theory to much unnecessary information. Essence of the curriculum is lost through the information and content.

Appendix 6.5: Participant 6.5 response to the interview questions

Teaching Subject: Business Analysis IV BTECH (Female)

Part C Curriculum experience	Reponses
1. Taking your encounter with the curriculum into consideration please answer the following questions	
1.1. What is your main impressions of the curriculum	Network field is similar to project management. Good foundation for Business Analysis.
1.2. Do you understand the purpose and the intent of the curriculum?	Yes it is clear the purpose and intent. Could understand what the aim of the curriculum is.
1.3. Do you regard the curriculum as structured and developmental? Think here about the alignment of the learning and teaching material, the pre-scribed text books and study guides).	The curriculum is structured and developmental, intellectually stimulating and exciting. You can apply your own understanding to the given scope.
2. Do you experience the curriculum responsive to the needs of society and industry?	The curriculum speaks to the needs of industry and business. Any kinds of business techniques, information are relevant. Yes it is responsive.
3. Are the outcomes clearly structured within the curriculum?	Yes, the outcomes are clearly structured.
3.1. Is the curriculum emotionally and intellectually stimulating?	Yes, it is both emotionally and intellectually stimulating. The curriculum challenges you. Have to take failure positive.
4. Does the curriculum identify essential skills and competencies to help you in optimising your potential and to be relevant in industry?	Yes, the curriculum makes you aware of the kind of person you are, you can improve on certain skills like presentation skills, how to communicate and bring about a point.
5. Would you regard the curriculum as relevant?	Yes it is relevant can relate the information of the curriculum to real life situations and examples.
6. Is there any other thing you would like to mention with regards to your experience with the curriculum?	No.
Part E (reflection on Business analysis IV) 1. Name at least three problems or challenges and their causes, if any, you have experienced concerning the curriculum activities	It is challenging if you do not know how to analyse the content in the currciculum. Application of theory (practical) needs more emphasis.

Appendix 6.6: Participant 6.6 response to the interview questions

Teaching Subject: Business Analysis III Diploma (Female)

Part C Curriculum experience	Reponses
1. Taking your encounter with the curriculum into consideration please answer the following questions	
1.1. What is your main impressions of the curriculum	My impression is that the programming is difficult and that I do not understand its relevance with regards to the subject curriculum and qualification.
1.2. Do you understand the purpose and the intent of the curriculum?	Purpose is not clear; do not understand the purpose and intent of the subject. Do not know what is useful and relevant.
1.3. Do you regard the curriculum as structured and developmental? Think here about the alignment of the learning and teaching material, the pre-scribed text books and study guides).	Curriculum is structured, but I do not regard the curriculum as developmental. At times I find the curriculum irrelevant.
2. Do you experience the curriculum responsive to the needs of society and industry?	I do not think the curriculum is responsive, all that is requested form me is to study the content in textbooks. I do not regard the curriculum as responsive to the needs of industry and society.
3. Are the outcomes clearly structured within the curriculum?	No, it is not clearly structured the outcomes. Do not understand what they wanted me to achieve.
3.1. Is the curriculum emotionally and intellectually stimulating?	Some parts of the content yes.
4. Does the curriculum identify essential skills and competencies to help you in optimising your potential and to be relevant in industry?	Some skills yes because in Business Analysis you have to conduct surveys. You need skills like doing interviews, research might be taught in this portion of the curriculum.
5. Would you regard the curriculum as relevant?	About 50% of the curriculum is relevant. Improvement should be done to curriculum content to make it more relevant and applicable.
6. Is there any other thing you would like to mention with regards to your experience with the curriculum?	I prefer to figure things out for myself. The curriculum of business analysis allows me to think independently and figure out stuff (positive)
Part E (reflection on Business analysis III) 1. Name at least three problems or challenges and their causes, if any, you have experienced concerning the curriculum	Changes, improvement: More exercise and engagement in classes with the curriculum. Approach of teaching and involvement of lecturers should improve.

activities	Practical side of curriculum is fine and it is well explained, but theory to much unnecessary information. Essence of the curriculum is lost through the information and content.

Appendix 6.7: Participant 6.7 response to the interview questions

Teaching Subject: Business Analysis III Diploma (Female)

Part C Curriculum experience	Reponses
1. Taking your encounter with the curriculum into consideration please answer the following questions	
1.1. What is your main impressions of the curriculum	My impression of Business Analysis III is positive. I enjoy the subject because I love working with people. I can relate to the curriculum because it allows me to come up with my own ideas and to be creative.
1.2. Do you understand the purpose and the intent of the curriculum?	Yes, I understand the purpose and intent of the curriculum. The purpose of the curriculum is clear it helps me to solve problems.
1.3. Do you regard the curriculum as structured and developmental? Think here about the alignment of the learning and teaching material, the pre-scribed text books and study guides).	Curriculum is structured and developmental. I provide me the opportunity to think for myself.
2. Do you experience the curriculum responsive to the needs of society and industry?	Yes the curriculum is responsive; it will help me to function in the corporate world. The subject and the content will help me to become Business Analyst. The curriculum gives me the confidence to present and speak in front of people.
3. Are the outcomes clearly structured within the curriculum?	Yes, the curriculum outcomes are clearly structured. The lecturers try their best to convey information to us.
3.1. Is the curriculum emotionally and intellectually stimulating?	The way the curriculum is structured helps us to engage with the curriculum and I find it emotionally and intellectually stimulating, because we are consistently thinking about how to improve ourselves and engage with the content. The content challenges us.
4. Does the curriculum identify essential skills and competencies to help you in optimising your potential and to be relevant in industry?	Yes, intra- and interpersonal skills are developed through this curriculum, also communication skills, computer and social skills. Yes, the curriculum has the potential for us to optimise our own potential.
5. Would you regard the curriculum as relevant?	Yes, definitely it helps me to understand the business world how it functions.
5. Is there any other thing you would like to mention with regards to your experience with the curriculum?	The curriculum focuses too much on the theory then the practicals. Would like to see that there should be a balance between the practical and the theory in the curriculum.
Part E (reflection on Business analysis III) 1. Name at least three problems or challenges	Challenge with the curriculum is the programming part. I find it very difficult to

and their causes, if any, you have experienced concerning the curriculum activities	understand. Programming is time consuming. A way should be found to convey information from programming straight forward, I will understand it better. Business application the practical part of this curriculum should be organised better and should be structured better. Positive: Very rich information which is very helpful for us in the world of work.

Appendix 6.8: Participant 6.8 response to the interview questions

Teaching Subject: Business Analysis III Diploma (Female)

Part C Curriculum experience	Reponses
1. Taking your encounter with the curriculum into consideration please answer the following questions	
1.1. What is your main impressions of the curriculum	My impression of the curriculum is that theory analysis very valuable. It adds value to my learning.
1.2. Do you understand the purpose and the intent of the curriculum?	Mostly yes, the curriculum is based on business related aspects that can be helpful in the world of work.
1.3. Do you regard the curriculum as structured and developmental? Think here about the alignment of the learning and teaching material, the pre-scribed text books and study guides).	Curriculum is structured and developmental; gives us the opportunity to think for ourselves. Very relevant information (how to develop a business plan).
2. Do you experience the curriculum responsive to the needs of society and industry?	Yes the curriculum is responsive; it will help me to function in the corporate world. Has to do with the business world. The curriculum is related to the business world.
3. Are the outcomes clearly structured within the curriculum?	Yes the curriculum is clearly structured. Know what to achieve. Even if you not in the class the outcomes will guide you to understand the curriculum.
3.1. Is the curriculum emotionally and intellectually stimulating?	The way the curriculum is structured helps us to engage with the curriculum and I find it emotionally and intellectually stimulating, because as s student I am is consistently thinking about how to improve myself and how to engage with the content. The content challenges me
4. Does the curriculum identify essential skills and competencies to help you in optimising your potential and to be relevant in industry?	Some of the skills I will be able to use in industry, not only industry but also in life. The most important for me skill, is communication skills.
5. Would you regard the curriculum as relevant?	Yes it is relevant. The information we are taught is useful for industry. I do regard the curriculum as relevant and responsive.
6. Is there any other thing you would like to mention with regards to your experience with the curriculum?	My experience is very positive with regards studying in Business Analysis III.
Part E (reflection on Business analysis III) 1. Name at least three problems or challenges and their causes, if any, you have experienced concerning the curriculum activities	The biggest challenge of the curriculum is sometimes writing tests on a day to day basis. We get overwhelmed by that and also by the presentations that we should do, it is a lot. Practical side also difficult. Improvements: More hours should be put in teaching the practicals and also by giving more

	challenging assignments.

Appendix 6.9: Participant 6.9 response to the interview questions

Teaching Subject: Business Analysis III Diploma (Male)

Part C Curriculum experience	Reponses
1. Taking your encounter with the curriculum into consideration please answer the following questions	
1.1. What is your main impressions of the curriculum	Main impression is that the curriculum is difficult. The text book that is in usage does not explain much.
1.2. Do you understand the purpose and the intent of the curriculum?	Not really do not get the clear picture. The intent and purpose of the curriculum is not clear.
1.3. Do you regard the curriculum as structured and developmental? Think here about the alignment of the learning and teaching material, the pre-scribed text books and study guides).	If the subject and curriculum is explained in conjunction with other subjects and a holistic view is formed, only then Business Analysis III is developmental and structured.
2. Do you experience the curriculum responsive to the needs of society and industry?	Yes, the curriculum is responsive; it will help with analysis skills, planning skills, how to draw diagrams, yes it is responsive to needs of industry. But not responsive to my own needs.
3. Are the outcomes clearly structured within the curriculum?	The outcomes not clearly structured, very confusing and sometimes difficult.
3.1. Is the curriculum emotionally and intellectually stimulating?	Yes it is both emotionally and intellectually stimulating.
4. Does the curriculum identify essential skills and competencies to help you in optimising your potential and to be relevant in industry?	Yes it does and it is helpful in industry and the curriculum helps the use to optimise our own potential.
5. Would you regard the curriculum as relevant?	Yes it is relevant can relate the information of the curriculum to real life situations and examples.
6. Is there any other thing you would like to mention with regards to your experience with the curriculum?	I really did not have a positive experience. Did not enjoy the curriculum of Business Analysis III, although it is an important subject for becoming a business analyst
Part E (reflection on Business analysis III) 1. Name at least three problems or challenges and their causes, if any, you have experienced concerning the curriculum activities	The textbook should be changed. With regards the information in the text book, it is too much and the essence of the curriculum is lost through that. The information should be more condensed and aligned to the assignments.

Appendix 6.10: Participant 6.10 response to the interview questions

Teaching Subject: Business Analysis IV BTECH (Female)

Part C Curriculum experience	Reponses
1. Taking your encounter with the curriculum into consideration please answer the following questions	
1.1. What is your main impressions of the curriculum	The information of the curriculum is useful in the workplace. The content of the curriculum is very relevant. Helpful in becoming a Business Analyst.
1.2. Do you understand the purpose and the intent of the curriculum?	Yes, the purpose and intent is clear.
1.3. Do you regard the curriculum as structured and developmental? Think here about the alignment of the learning and teaching material, the pre-scribed text books and study guides).	The curriculum is well structured. Relevant case studies are given. The case studies is general not specific.
2. Do you experience the curriculum responsive to the needs of society and industry?	Yes the curriculum is responsive. The application from school to industry is shown in the curriculum. We can apply what is taught to industry.
3. Are the outcomes clearly structured within the curriculum?	Yes the outcomes is clearly structured and well communicated.
3.1. Is the curriculum emotionally and intellectually stimulating?	Yes it is emotionally stimulating. Need to think intellectually about what it is to be a Business Analyst.
4. Does the curriculum identify essential skills and competencies to help you in optimising your potential and to be relevant in industry?	Yes it does. Analysing skills, you need it for the project.
5. Would you regard the curriculum as relevant?	Yes it is relevant.
6. Is there any other thing you would like to mention with regards to your experience with the curriculum?	No.
Part E (reflection on Business analysis IV) 1. Name at least three problems or challenges and their causes, if any, you have experienced concerning the curriculum activities	One of the challenges is to include group discussions after chapters and to include the application of theory in a case study.

Appendix 6.11: Participant 6.11 response to the interview questions

Teaching Subject: Business Analysis IV BTECH (Female)

Part C Curriculum experience	Reponses
1. Taking your encounter with the curriculum into consideration please answer the following questions	
1.1. What is your main impressions of the curriculum	There is a gap between the theory and the application. The case studies used in curriculum does not relate to real work experiences. A lot of information in curriculum cannot always be used in work place, also sometimes too complicated.
1.2. Do you understand the purpose and the intent of the curriculum?	Yes the purpose and intent is clear.
1.3. Do you regard the curriculum as structured and developmental? Think here about the alignment of the learning and teaching material, the pre-scribed text books and study guides).	The curriculum is well structured, but lack with regards to sequence in text books. Yes it is developmental but there is more room for growth.
2. Do you experience the curriculum responsive to the needs of society and industry?	No the curriculum is not responsive. There is no alignment to what industry, society and I require.
3. Are the outcomes clearly structured within the curriculum?	No, outcomes are not clearly structured. You don't know what is been expected of you.
3.1. Is the curriculum emotionally and intellectually stimulating?	Yes intellectually stimulating. Content of curriculum can be challenging. Not emotionally challenging.
4. Does the curriculum identify essential skills and competencies to help you in optimising your potential and to be relevant in industry?	Yes the curriculum identifies the essential skills like communication, writing, analysis and thinking skills are been taught in the curriculum.
5. Would you regard the curriculum as relevant?	Yes it is relevant. But there are room for improvement. Changes such as way the curriculum is structured can be made to enhance the curriculum. Irrelevant information should be disregarded.
6. Is there any other thing you would like to mention with regards to your experience with the curriculum?	No.
Part E (reflection on Business analysis IV) 1. Name at least three problems or challenges and their causes, if any, you have experienced concerning the curriculum activities	To close the gap between industry and curriculum (school). It is also a challenge to ensure that practical application is emphasised.

Appendix 6.12: Participant 6.12 response to the interview questions

Teaching Subject: Business Analysis IV BTECH (Male)

Part C Curriculum experience	Reponses
1. Taking your encounter with the curriculum into consideration please answer the following questions	
1.1. What is your main impressions of the curriculum	A good curriculum, benchmarked against international standards of Business Analysis.
1.2. Do you understand the purpose and the intent of the curriculum?	Yes the purpose and intent is clear.
1.3. Do you regard the curriculum as structured and developmental? Think here about the alignment of the learning and teaching material, the pre-scribed text books and study guides).	It is well structured and developmental, can add value to people's careers.
2. Do you experience the curriculum responsive to the needs of society and industry?	Yes, the curriculum is responsive because we need to do problem solving in industry.
3. Are the outcomes clearly structured within the curriculum?	Yes, the outcomes are communicated and structured clearly. Yes will help with career growth.
3.1. Is the curriculum emotionally and intellectually stimulating?	Yes, the curriculum can be intellectually stimulating and the content of curriculum can be challenging, but the curriculum is not emotionally stimulating.
4. Does the curriculum identify essential skills and competencies to help you in optimising your potential and to be relevant in industry?	Not really, these skills are already covered in the earlier syllabus, the gap between the previous syllabus and this syllabus should be closed so that these essentials skills can be emphasised more.
5. Would you regard the curriculum as relevant?	Yes it is relevant.
6. Is there any other thing you would like to mention with regards to your experience with the curriculum?	No.
Part E (reflection on Business analysis IV) 1. Name at least three problems or challenges and their causes, if any, you have experienced concerning the curriculum activities	One of the challenges is to have worthy partnerships with industry and business. An improvement on the curriculum is the certification of the Business Analyst.

Appendix 6.13: Participant 6.13 response to the interview questions

Teaching Subject: Business Analysis IV BTECH (Male)

Part C Curriculum experience	Reponses
1. Taking your encounter with the curriculum into consideration please answer the following questions	
1.1. What is your main impressions of the curriculum	Content is well organised and study guides easy to use.
1.2. Do you understand the purpose and the intent of the curriculum?	Do understand the purpose. The lecturer gives us more than what is required in the study. Intent is also clear.
1.3. Do you regard the curriculum as structured and developmental? Think here about the alignment of the learning and teaching material, the pre-scribed text books and study guides).	Yes, the curriculum is well-structured and also developmental. Got a different perspective on major role in education.
2. Do you experience the curriculum responsive to the needs of society and industry?	Yes, the curriculum is responsive; the things taught in curriculum could be applied in industry. The knowledge gained can be applied socially (my needs) and skills and competencies are applicable for industry.
3. Are the outcomes clearly structured within the curriculum?	Outcomes not clearly structured. Only 50% of the time you understand what is expected of you.
3.1. Is the curriculum emotionally and intellectually stimulating?	Yes, it is both emotionally and intellectually stimulating. The curriculum challenges you. Have to take failure positive.
4. Does the curriculum identify essential skills and competencies to help you in optimising your potential and to be relevant in industry?	Definitely, the skills acquired during this curriculum are presentation skills, communication skills which are useful in industry.
5. Would you regard the curriculum as relevant?	Yes it is relevant can relate the information of the curriculum to real life situations and examples.
6. Is there any other thing you would like to mention with regards to your experience with the curriculum?	Lecturers go the extra mile to help students. With regards to the practical side more assistance should be given here.
Part E (reflection on Business analysis IV) 1. Name at least three problems or challenges and their causes, if any, you have experienced concerning the curriculum activities	Challenges The project weight 30% difficult for students to pass. More information and help from lecturers required. Information sometimes outside the scope of Business analysis but rather relevant for other disciplines like IT(Computing)

Appendix 6.14: Participant 6.14 response to the interview questions

Teaching Subject: Business Analysis IV BTECH (Female)

Part C Curriculum experience	Reponses
1. Taking your encounter with the curriculum into consideration please answer the following questions	
1.1. What is your main impressions of the curriculum	Impression of curriculum: more in touch in business world. Mostly for guys working in industry, difficult for those who is not in industry to grasp the concepts discussed in the curriculum.
1.2. Do you understand the purpose and the intent of the curriculum?	Yes, it is clear the purpose and intent. More focus on subject matter by doing responsibilities. Lecturer is encouraging; the lecturers should be cognisant of his/her role of adding value to the Business Analyst.
1.3. Do you regard the curriculum as structured and developmental? Think here about the alignment of the learning and teaching material, the pre-scribed text books and study guides).	Is developmental but books not as practical as lectures. Text books too much information, more time consuming. Lectures more informative and educational. All assignments aligned to study guide and lectures, intent and purpose of study guide clear.
2. Do you experience the curriculum responsive to the needs of society and industry?	Yes. Everyone from the lecturer, industry and students, those with working experience has a role to play. Curriculum not really responsive to social needs, but only to industry. Curriculum adds to the mental preparedness of the students to face challenges of industry. Good inputs the curriculum.
3. Are the outcomes clearly structured within the curriculum?	Yes the outcomes is clearly structured and communicated. What is expected of you is communicated and not what to know through the outcomes.
3.1. Is the curriculum emotionally and intellectually stimulating?	Yes it is depending on who the lecturer is and how content is communicated to students, only then is stimulating.
4. Does the curriculum identify essential skills and competencies to help you in optimising your potential and to be relevant in industry?	Yes it does it makes you aware of the skills industry requires, like communication skills and provides you the opportunity to optimise your potential.
5. Would you regard the curriculum as relevant?	Yes it is relevant. The lecturer has an important role to play in how the curriculum is interpreted.
6. Is there any other thing you would like to mention with regards to your experience with the curriculum?	No.
Part E (reflection on Business analysis IV) 1. Name at least three problems or challenges and their causes, if any, you have experienced concerning the curriculum activities	The students should be encouraged to think about the course and its benefits. One of the benefits is to teach students how to become good Business Analysts. Improvements: individual practical experience should be emphasised. The project should be

	introduced at an earlier stage or lower level, so that students can make informed choices.

Appendix 6.15: Participant 6.15 response to the interview questions

Teaching Subject: Business Analysis IV BTECH (Female)

Part C Curriculum experience	Reponses
1. Taking your encounter with the curriculum into consideration please answer the following questions	
1.1. What is your main impressions of the curriculum	Impression of curriculum: Will help student a lot. I benefit from the curriculum, especially with regards to my future plans.
1.2. Do you understand the purpose and the intent of the curriculum?	Yes it is clear the purpose and intent. I understand the purpose and intent of the curriculum.
1.3. Do you regard the curriculum as structured and developmental? Think here about the alignment of the learning and teaching material, the pre-scribed text books and study guides).	Yes it is structured and developmental.
2. Do you experience the curriculum responsive to the needs of society and industry?	Yes. It's responsive to industry not but need of society.
3. Are the outcomes clearly structured within the curriculum?	Yes the outcomes are clearly stipulated. Outcomes are important to provide guidance in curriculum and course. Know what is expected and what to achieve.
3.1. Is the curriculum emotionally and intellectually stimulating?	Yes, the curriculum is emotionally and intellectually stimulating.
4. Does the curriculum identify essential skills and competencies to help you in optimising your potential and to be relevant in industry?	Yes, it does it make you aware of the skills industry requires, like communication skills and provides you the opportunity to optimise your potential. Research skills, business process analysis and how to communicate with clients. Very helpful in the industry
5. Would you regard the curriculum as relevant?	Yes it is relevant.
6. Is there any other thing you would like to mention with regards to your experience with the curriculum?	No.
Part E (reflection on Business analysis IV) 1. Name at least three problems or challenges and their causes, if any, you have experienced concerning the curriculum activities	It is important that emphasis should be placed on research as a subject and also the way the current research is done within the curriculum.

Appendix 7: Examples of study guides and learning material for subjects Business Analysis III and IV

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY

DEPARTMENT OF INFORMATICS

Tshwane University of Technology

We empower people

STUDENT COURSE GUIDE

NAME OF SUBJECT			
BUSINESS ANALYSIS III A (BUA30AT)			
NQF LEVEL	***NQF CREDITS***	***QUALIFICATION***	***COURSE CODE***
6	**0.125**	**National Diploma in Information Technology: Business Applications**	**NDIB04**

COMPILED BY Ms. L Brand

July 2013

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FACULTY OF ICT

Tshwane University of Technology

ORGANISATIONAL COMPONENT CONTENTS:

SECTION A ORGANISATIONAL COMPONENT

1. WELCOME

Welcome to the National Diploma in Information Technology specializing in Business Application. This module/subject is a one- semester subject, which represents further specialization in Business Analysis. It is offered via compulsory lectures over 14 weeks. The course is structured in such a way as to provide a stronger foundation of Business Analysis by introducing other forms of analysis; this module will teach an adaptive approach called Unified Process with Unified Modeling Language.

Using the table of content on the previous page will assist you in identifying the crucial points in this study guide. These points will assist you if you miss any classes or if you are unsure of the rules and regulations or calculation of the final marks.

2. STAFF

2.1 CONTACT DETAILS

NAME	CAMPUS	ROOM NO	TEL NO / E-MAIL	CONSULTATION TIMES	ACADEMIC FUNCTION
Ms. Louise Brand	Soshanguve South Campus	Building 19 – Room G07	012 382 9186 BrandL@TUT.ac.za	Mondays 11:00 – 12:00 Tuesdays 11:30 – 12:30 Thursdays 10:00 – 11:00 Or by appointments	Subject Head
Ms. Louise Brand	Soshanguve South Campus	Building 19 – Room G07	012 382 9186 BrandL@TUT.ac.za	Mondays 11:00 – 12:00 Tuesdays 11:30 – 12:30 Thursdays 10:00 – 11:00 Or by appointments	Lecturer

Ms. Louise Brand	Soshanguve South Campus	Building 19 – Room G07	012 382 9186 BrandL@TUT.ac.za	Mondays 11:00 – 12:00 Tuesdays 11:30 – 12:30 Thursdays 10:00 – 11:00 Or by appointments	Mentors
Ms. Makhanani Cynthia Mashaba	Soshanguve South Campus	Library building	012 382 9509 MashabaMC@tut.ac.za	Appointments	Subject Librarian
Ms. Louise Brand	Soshanguve South Campus	Building 19 – Room G07	012 382 9186 BrandL@TUT.ac.za	Mondays 11:00 – 12:00 Tuesdays 11:30 – 12:30 Thursdays 10:00 – 11:00 Or by appointments	Examiner
Mr. K Phaka	Industry	Private	Private		Moderator
Ms. Sophie Maake	Soshanguve South Campus	Building 12	012 382 9741 MaakeMS@TUT.ac.za	Appointments	Faculty Administrator
Dr. Teddy Setshedi	Soshanguve South Campus	Building 12	012 382 9777 SetshediTTF@TUT.ac.za	Appointments	Cooperative Education Coordinator
Ms Maria Mnguni Mr Daniel Ramokgadi Ms Lizzie Peegam	Soshanguve South Campus Soshanguve South Campus Soshanguve North campus		012 382 9662 mngunima@tut.ac.za 012 382 9863 012 382 9863 peegame@tut.ac.za	Appointments	Personal Psychologist Disability Unit Study counseling and support

2.2 STAFF AVAILABILITY

If, after attending class and making every effort from your side to master content, you still have problems with understanding key concepts or principles or their application, the lecturer(s) are available for consultation.

General Rules regarding consultation times:

- Please adhere to the times stated as consultation times (Consultation times are on the lecturer's office door)
- If you cannot attend in those allocated consultation times, please make an appointment with the lecturer at least 2 days before the scheduled meeting.
- Please prepare for the consultation time
- Please do not ask the lecturer to re-teach the whole chapter/book in the consultation times.

3. REQUIREMENTS, RESOURCES AND RECOMMENDED MATERIAL.

3.1 REQUIREMENTS FOR THE COURSE

3.1.1 PRESCRIBED RESOURCES

The following tables indicate what literature and other resources are essential for successful completion of this course. You are strongly advised to acquire all the prescribed resources.

PRESCRIBED LITERATURE				
CATEGORY	**AUTHOR**	**NAME**	**PUBLISHER**	**ISBN NO**
BOOKS	Satzinger, Jackson and Burd	Object – Orientated Analysis and Design with the unified process.	Cengage	0 – 619 -21643 - 3
NOTES	Ms. Louise Brand	Slides of Theory chapters Can be found on MyTUTor	TUT	None

3.1.2 RECOMMENDED RESOURCES

The following recommend resources will enhance your understanding and knowledge in this course, and you are encouraged to use the following additional resources.

RECOMMENDED RESOURCES				
CATEGORY	**AUTHOR**	**NAME**	**PUBLISHER**	**ISBN NO**
BOOKS	H Podeswa	UML for the IT Business Analyst	Cengage	978 1 59200 912 1
	SR Schach	Introduction to object-orientated analysis and design with UML and unified Process	McGraw-Hill	0 07 121510 7
	J Satzinger, R Jackson and S Burd	System analysis and design in a changing world	Cengage	978 0 324 59377 8
RECOMMENDED ELECTRONIC MATERIAL & WEBSITES				
MyTUTor	http://mytutor.tut.ac.za/webct/entryPageIns.dowebct			
WEBSITES	http://edn.embarcadero.com/article/31863 (Very brief explanations but good)			
	http://www.visualcase.com/tutorials/uml-tutorial.htm (Step by step approach)			

4. CODE OF CONDUCT

Please take note of the following regulations. These regulations are in **addition** to the standard rules and regulations as determined by the TUT. Please familiarise yourself with the TUT rules and regulations as set out in the student diaries received on registration.

4.1 ATTENDANCE

Regular attendance of BUA30AT lectures is of primary importance. It is your responsibility to sign the register each week (***no one may sign on your behalf***). A minimum attendance of 80% is mandatory for this course. Classes will be offered in venue: building 10 room 149.

Example: In 14 weeks, if 3 classes have not been attended and for which you have not furnished a valid doctor's letter or other proof of extenuating circumstances, it will amount to 20% absenteeism. This level of absenteeism could lead to exclusion from the final examination at the end of the year, which means that you will fail the course and will have to repeat it the following semester.

4.2 CLASSROOM BEHAVIOUR

4.2.1. USAGE OF CELL PHONES IN CLASSES

NO use of cell phones at all! If you use a cell phone in any form or mode, the lecturer will confiscate it and only return it to you at the end of the semester.

4.2.2. NEATNESS OF THE CLASSROOM

- The theory venue should be neat after each class has been presented (no papers on the floor).
- No food or cool drink is allowed in the classroom.
- No writing on the desks, white screen, walls or chairs. (This constitutes as vandalism)
- No walking or standing on the furniture
- No breaking of the window blinds or lights. (This constitutes as vandalism)

4.2.3. ARRIVAL FOR CLASS

You will not be allowed to enter the class room once the lecturer has begun. If you are late, do not enter or try to sneak in.

4.2.4. UNETHICAL BEHAVIOUR

If you misbehave and /or disturb the class from continuing, you will be asked to leave. If you continue then you will be escorted off the TUT premises by campus control and a disciplinary hearing will be arranged against you.

TUT has a zero tolerance for copying/plagiarism (cheating). This applies to all types of assessment.

You are **not allowed** to copy from friends/books/internet/ any other forms. If you do copy and you are found guilty by the disciplinary committee, you will be expelled from TUT and you will not be allowed to study anywhere else in South Africa for a certain time. Please refer to the student rules and regulations (Part 1) for the University rules and policies.

4.3 RESPONSIBILITIES OF STUDENTS

- It is your responsibility to make a success of learning in this course. Therefore, you are encouraged to prepare and attend classes, write all the class tests and hand in your assignments/projects on the set due dates.

- You should follow the schedule, unless otherwise stated in class by the lecturer. (Please do not listen to friends, rather ask the lecturers).
- You should look on the notice board outside the lecturer's office for updates on marks and any communication.
- You should have a text book.
- You should submit your sick note within the stipulated timeframe.

4.4 QUALITY ASSURANCE OF STUDY GUIDE

This subject's study guide is created by the subject head, which is then given to the other lecturers (internal assessors of the quality). Once all academia staff have approved, the study guide is then given to the Curriculum Development and Support department officer who evaluates the quality and reports back to the academia for improvements.

This report is also given to the Dean of the Faculty and the Head of the Department.

SECTION B LEARNING COMPONENT

1. OVERVIEW OF THE COURSE

Welcome to the Business Analysis 3 A! This course will introduce you to the system development methodology called UP (Unified Process) which uses Unified Modeling Language diagrams for illustrating analysis and design. Hope you enjoy the course!

1.1 PURPOSE OF THE COURSE

The purpose of this course material is to provide you (the learner) with the ability and the skills to adapt to ever changing system development methods. Everyone is used to the SDLC methodology; this subject will teach you a new method, one that is adaptable and usable in any industry. After completing this subject you would be able to assess which methodology would best suit the system development process.

1.2 LINKS TO OTHER SUBJECTS

In the 1st and 2nd year, subjects like ISY23AT and ISY 23 BT taught you the System development life cycle and certain models like the waterfall and V model. This knowledge is the basis for the new and modern method of system analysis and design called Unified Process. This methodology has new diagrams (similar to the ones that were taught in ISY) but more adaptable to the changes from clients.

This subject teaches a person to be adaptive to changes, especially in the business/ system analysis and design industry.

1.3 COURSE OUTCOMES

The learning schedule, as set out on page 13, will guide you to master the content and will enable you to achieve the learning outcomes.

1.4 MODE OF DELIVERY

This subject will make use of 3 contact sessions per week (unless otherwise stated by the lecturer), each consisting of 90 minutes.

2. ASSESSMENT

2.1 ASSESSMENT METHODS AND CRITERIA

Assessment of this course will include written tests, assignments and online class tests as indicated in the schedule. The purpose of assessment is to determine whether you have achieved the learning outcomes. The various assessment methods therefore will focus on criteria that will enable the lecturer(s) to determine whether you have achieved the learning outcomes. The assessment criteria relevant to each learning outcome are detailed in section 3.2.

2.2 ASSESSMENT RULES

The general rules of TUT regarding assessment apply. You are advised to familiarise yourself with these rules, as they are applied stringently.

Please submit your assignments on the specified date and time as stated on the assignment front page (provided by lecturer). If an assignment is late without a valid reason, then do not submit. That also includes the class rule of being late, if you are late for class on the day of submission then you cannot enter and therefore you cannot submit your assignment. Otherwise please speak to the lecturer and bring proof of your reason. (Example: if you were sick, then a doctor's note is needed, if you missed your transport then that is an invalid reason and the assignment will be rejected). If you copy anyone or anything, then there will be consequences. (Please read section A number 4.2.4 on page 8 of this document)

All class tests are online and available on MyTUTor; these tests are open from the first day of class until a specified date and time towards the end of the semester. You may use your textbook to look for the answers (open book) and you may write the tests at any time (please make sure that you answer all the class test questions before the closing date). If a word does not fit in the space provided then please email the lecturer, with the email subject as BUA30AT, your surname, and the class test number in the message. No class tests will be reopened after the closing date. If there were technical difficulties then email your lecturer with the email subject as BUA30AT and the message as "Please reset my (state which class test), due to the following reason…." and state this reason.

If you were sick or there was a certain valid reason why you could not write your semester tests, then you need to submit proof of this reason to your lecturer within 5 days of the test being written.

2.3 MARKING SYSTEM

There are 12 class tests covering chapters 1 – 12. Each class test has 20 questions (except test 9 which has 25 questions), some true and false and some are filling in questions. Each one of these questions is worth 1 mark. Therefore the class test is 20 -25 marks.

There are 4 assignments and each assignment has its own mark sheets which are attached. Each assignment is worth 20 marks.

All the class tests and assignments are individual assessments, no friends may help / NO GROUP WORK.

There will be 2 semester tests that would cover the theory and practical components. Each semester test marks will vary. The semester tests practical components are based on case studies. There is a memorandum but this is only a guide to the marking. If a student misses any semester tests then he/she will need to provide the valid documentation within the time frame to qualify to write the sick test (which is on all the work, theory and practical).

Then lastly there is an exam which shall cover all the work (12 chapters). Instructed by the Department of Informatics, no scope for any subject may be given. The exam would be testing your ability to analyse and interpret the system through the use of UML diagrams.

2.4 YEAR MARK

A sub minimum of 40% is required for the two theory tests combined.

Class Tests:	20%	(included is 5 % class attendance, class tests = 15% and attendance = 5%)
Assignments	20%	
Semester Test 1	30%	
Semester Test 2	30%	
Total:	100%	**This is the predicate mark**

The weights of the various marks may change during the semester; these will be discussed with you if and when they arise

Predicate marks are put on the Department's notice boards. **If you have queries about your mark, you must immediately consult your subject lecturer (contact details are given above), before predicate day (30 October 2013).** Once the predicate mark is entered on TUT's mainframe computer, the mark **cannot** be changed.

You must obtain at least a 40% for predicate in order to qualify to write the exam.

Your year marks is then calculated as follows:

$$\frac{\text{Predicate mark (\%) + Exam mark (\%)}}{2} = \text{Final Mark (\%)}$$

You must obtain at least a 50% in the exam. *(Please read 2.6 promotion requirements on this page in order to clarify how you can pass).*

2.5 MODERATION

The quality of the assignments, class tests and question papers with memorandums is maintained by an external moderator and an internal moderator with qualifications higher than the year the subject is being presented in.

The quality of the marking is overseen by the external moderator that ensures the marking of the assessments is fair. A moderators report is completed for each major assessment and is kept in the subject head's quality file and by the exam department.

2.6 PROMOTION REQUIREMENTS

This subject is not a prerequisite for another subject but it is compulsory in order to complete the qualification.

A Pass mark is a final mark of 50%. Please see the year mark calculation in order to calculate the final mark.

A final mark of 49% will be changed to 50% and a 74% will be changed to a 75% (distinction).

You must obtain at least a 50% in the exam and a 40% in the predicate mark to qualify for a supplementary exam (45% – 48% qualifies for supplementary exams - Please remember that this test is on all the work – theory and practical).

Then you must obtain a 50% in the supplementary exam in order to pass the subject.

Please read the Exam rules of TUT for further clarity and explanation.

3. COURSE CONTENT AND SCHEDULE OF TESTS AND ASSIGNMENTS

This course comprises both a theory and application component. Your mastery of that theory is assessed at regular intervals. More importantly, the application of theory is assessed through assignments/projects.

The following outline provides an overview of the content to be covered in this course and the ways in which your progress will be assessed.

3.1 COURSE STRUCTURE AND SCHEDULE OF TESTS AND ASSIGNMENTS

DURATION	THEME	ASSIGNMENT/ TEST/PROJECT	COMPLETION DATE*
Week 1 – 2	Chapter 1 – 3 **System Development and the Unified Process** • Defining any analyst • Unified process • Project management	Class test on each chapter separately. **Assignment 1** • Chapter 1 page 32 Experiential Exercise, questions 1 and 2 ONLY • Chapter 2 page 76 Experiential Exercise, questions 1 and 2 ONLY • Chapter 3 page 120 Case study called "Custom Load Trucking", ALL 4 questions	**18 October 2013 at 17:00** **2 August in pigeon Hole before 12:00 (noon)**
Week 2 – 4	Chapter 4 -6 **Modeling and the requirements discipline** • User requirements • Use case • Class diagram • Sequence diagram • Activity diagram • State chart	Class test on each chapter separately. **Assignment 2** • Chapter 4 page 161 Experiential Exercise, question 1 ONLY • Chapter 5 page 207 Case study called "The state patrol ticket processing system", answer questions 1- 3 • Chapter 6 page 255 Case Study called "The state patrol ticket processing system", answer questions 1 – 4	**18 October 2013 at 17:00** **16 August in pigeon Hole before 12:00 (noon)**
Week 5	Semester test 1	Chapters 1- 6 Theory and Practical	**Thursday 22 August at 11:00 in class**
Week 6 – 8	Chapter 7 - 9 **The Design Discipline** • Design activities • Detailed class diagram • Sequence/Interaction diagram • Package diagram • Advance design • State charts • Theory on design class diagram	Class test on each chapter separately. **Assignment 3** • Chapter 7 page 288 Review questions, answer questions 3 - 8 (please use your own words, don't copy the book) • Chapter 8 page 354 Case Studies called "The state patrol ticket processing system", read and draw the interaction sequence diagram and the design class diagram • Chapter 9 page 390 Review questions, answer questions 1 – 13 (please use your own words, do not copy the book)	**18 October 2013 at 17:00** **13 September in pigeon Hole before 12:00 (noon)**
Week 9 - 10	Semester test 2	Chapters 8 and 9 Practical **Test week: 16 September – 4 October**	**Venue: TBA**

Week 11 – 13	Chapter 10 - 12 **The Design Discipline** • Design data access layers • Designing the User interfaces • Designing the System Interfaces	Class test on each chapter separately. **Assignment 4** • Chapter 10 page 437 Case Studies called "The state patrol ticket processing system", answer questions 1 – 2 • Chapter 11 page 482 Case studies called "The state patrol ticket processing system", questions 1 – 3 ONLY • Chapter 12 (READ THE ASSIGNMENT SHEET)	**18 October 2013 at 17:00** **18 October in pigeon Hole before 12:00 (noon)**
Week 14	Predicate	Make sure that you qualify for predicate	**30 October 2013**
Week 15 - 19	Exams and Supplementary exams	On all the work, chapters 1 – 12. Please do not ask for scope! The Department of Informatics does not provide scope.	Exam starts 4 November 2013

***Please note that test dates and chapters may be moved on short notice where circumstances require such change. Also, take particular note of the rules regarding tests and assignments in section B, 2.**

3.2 LEARNING OUTCOMES AND ASSESSMENT CRITERIA

The following tables clearly indicate what you have to achieve (the learning outcomes) and how you will be assessed (assessment criteria) to determine whether you have achieved the required knowledge and competences:

EXIT LEVEL OUTCOME:	
Analyze and design software solutions to industry related Information Technology problems	
LEARNING OUTCOME 1:	
Analyze the business needs and requirements.	
Assessment criteria	**Assessment method**
Data gathering techniques is used to gather data for modeling	Assignments for the practical implementation (doing) and class tests and written tests for the theoretical knowledge (know-how)

EXIT LEVEL OUTCOME:	
Analyze and design software solutions to industry related Information Technology problems	
LEARNING OUTCOME 2	
Design detailed solutions based on the requirements specification using UML models.	
Assessment criteria	**Assessment method**
UML models will illustrate the solution of the system	Assignments will enhance the practical application of this skill (designing)

EXIT LEVEL OUTCOME:	
Demonstrate the effective utilization of business and management skills to bridge the gap between the IT discipline and the business functional areas in industry	
LEARNING OUTCOME 3	
Assess the proposed business solution according to the requirements criteria.	
Assessment criteria	**Assessment method**
Knowledge on analysis and design is tested based on the procedures and processes	Assignments for the practical application and theory tests in the form of class tests and written tests for the understanding of the knowledge behind the testing of requirements.

EXIT LEVEL OUTCOME:	
Utilize the required technical skill to design and implement solutions in data commutations, networks and the internet environment.	
LEARNING OUTCOME 4	
Explain the principles of different platforms and architecture(s) on the business solution.	
Assessment criteria	**Assessment method**
Knowledge on the various platforms and architecture for businesses	Assignments, class tests and written tests to test the knowledge of this theory

*** Take note: The assessment methods are based on integrated assessment which is the combination of formative (assignments and semester tests are used to clarify students' understanding of the contents) and summative (exams are used to test the students' knowledge at one point), but following a continuous assessment approach (assessing the students' progress).*

3.3 GENERIC OUTCOMES AND CRITICAL CROSS-FIELD OUTCOMES

Compliance with Critical cross-field Outcomes	Compliance with Informatics Outcomes
• Identify the problems and provide creative Unified process solutions to enhance the organization. • Be able to work in a project team environment • Organize and manage the system workload in order to meet deadlines • Collect, analyze, organize, interpret and evaluate information for a project • Effectively communicate with people at different levels within the project • Be open minded to all possible solutions • Contribute and participate in the local and global communities • Be responsive of other cultures while developing systems • Consider further education in the UML field	• Analyze and design software solutions to industry related Information Technology problems • Utilize the required technical skills to effectively implement the designed solutions in a distributed IT environment. • Utilize the required technical skill to design and implement solutions in data commutations, networks and the internet environment. • Demonstrate the effective utilization of business and management skills to bridge the gap between the IT discipline and the business functional areas in industry

4. GLOSSARY OF TERMS

The following technical terms are used in this course, and you should be familiar with these terms and their meanings.

Sources used for the compilation of the glossary: TUT policy on assessment, Description of assessment instruments – Assessment Task (CDS document) and Object orientated Analysis and Design with the Unified process book. Also made reference to the NQF website:
http://www.nqf.org.za/pls/cms/page?s=3301,0,0,0,177,0,#I

Critical cross field outcomes are generic outcomes that inform all teaching and learning (example: work effectively with others in a team)

Assessment method is an approach that is used to measure what the learner has understood and can apply; example is tests (summative) or assignments (formative).

Formative Assessment - Refers to assessment that takes place during the process of learning and teaching.

Summative Assessment is assessment for making a judgment about achievement. This is carried out when a learner is ready to be assessed at the end of a program of learning.

Integrated assessment is a form of assessment which permits the learner to demonstrate applied competence and which uses a range of formative and summative assessment methods

UP (Unified Process) is a methodology that describes an object orientated approach to analysis and design of a system/ project.

Plagiarism is the process of taking another person's work, ideas, or words, and using them as if they were your own.

Unethical is morally wrong or against accepted standards of behavior, especially in a particular profession.

Assessment means the identifying, gathering and interpreting of information about a student's achievement in any formal learning or non-State-subsidised programme, in order to assist the student's development and improve the process of teaching and learning.

Written Tests means these usually consist of a range of questions. Learners are required to respond to questions within a specified time.

Outcomes are the final result of a process, meeting or activity.

Criteria are the standards that are used for judging something or making a decision about something.

Assurance is a feeling or attitude of confidence or being certain that something is true

5. APPENDICES

5.1 MARK SHEETS USED FOR ASSIGMENTS.

Appendix 8**:** Themes and codes used in the analysis of interviews and documents

Themes	Codes
Responsiveness of the curriculum	Intent and purpose of the curriculum is clear Curriculum is inclusive and developmental Curriculum is responsive to the needs of industry, society and student needs Impression of the curriculum (only for the students) Relevance of the curriculum (only for the students)
Impact (optimisation) of learning potential	Curriculum provides opportunities for students to optimise their learning (only for the lecturers) Curriculum procedures versus lecturer creativity (only for the lecturers) Essential skills and competencies are acquired (only for the students) Curriculum is intellectually and emotionally stimulating (only for the students) Curriculum is structured and developmental (only for the students) Outcomes are clearly structured (only for the students)
Standard of the curriculum	Improvements to be made to the curriculum Challenges of the curriculum Quality assurance is done (only for the lecturers) Involvement in the developing of the curriculum (only for the lecturers) Role of the support staff (only for the lecturers)

Documents	Theme	Codes
Study guides of Business Analysis III and IV	**Responsiveness of the curriculum**	The intent, purpose and educational value of the study guides
	Impact (optimisation) of learning potential	The outcomes and the manner in which they are written. The description, purpose and expectations of learning activities
Learning materials (examples of presentations) of Business Analysis III and IV	**Responsiveness of the curriculum**	The alignment of outcomes to the learning activities The intent and purpose of the learning activities are clearly communicated
	Impact (optimisation) of learning potential	Constructive alignment of learning activities to the specific outcomes of the subject and exit level outcomes
Question papers and memoranda of Business Analysis III and IV	**Impact (optimisation) of learning potential**	Differentiation of cognitive levels Questions scaffolded from simplicity to complexity. The alignment to the outcomes in the question papers to the study guides and the learning activities
	The standard of the curriculum	The quality of the question papers and memoranda

Appendix 9: Letter from the editor

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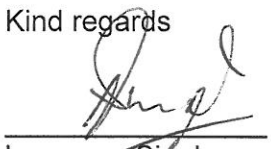
12 February 2016

TO WHOM IT MAY CONCERN

I hereby inform all interested parties that Mr. Laurance Singh has edited the thesis submitted by Nadia Human. The thesis, *THE ROLE OF A RESPONSIVE CURRICULUM IN OPTIMISING LEARNING IN HIGHER EDUCATION* was checked for language and spelling errors, as well as referencing compliance according to the Harvard Reference System.

Kind regards



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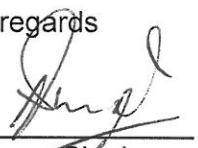

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