

**EFFECTIVE ASSESSMENT IN OPEN DISTANCE AND E- LEARNING: USING THE
SIGNATURE COURSES AT THE UNIVERSITY OF SOUTH AFRICA AS A MODEL
FOR FUTURE PRACTICE**

by

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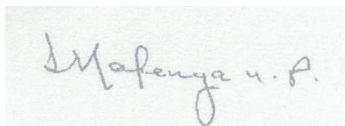
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DECLARATION

I declare that: **EFFECTIVE ASSESSMENT IN OPEN DISTANCE AND E-LEARNING: USING THE SIGNATURE COURSES AT THE UNIVERSITY OF SOUTH AFRICA AS A MODEL FOR FUTURE PRACTICE** hereby submitted by me is my own work in design and execution and all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.



14 June 2016

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Dedication

Firstly, I dedicate this thesis to my late brother Nyadzani Victor Mafenya who passed on during the 1976 Soweto riots. You were a beacon of hope for us and we shall miss you for the rest of our lives. Secondly, I dedicate this thesis to my brother Vhavenda Vho-Tshivhengwa Phineas Mafenya Mphaphuli who always wanted to know my progress when I was studying for this degree. To my mother, Vho-Mukhatshelwa Mafenya Mphaphuli for being such a wonderful mother, mothers like you are hard to find. I will forever cherish all you have done for me throughout my life. Finally, I dedicate this thesis to my guardian-parents, the late His Royal Highness Thovhele Vho-Karel Ngigideni Makuya and his wife Vho-Rosinah Mbulaheni Makuya who brought me up. You were like my own biological parents and I will forever miss you.

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TITLE OF THE THESIS

EFFECTIVE ASSESSMENT IN OPEN DISTANCE AND E-LEARNING: USING THE SIGNATURE COURSES AT THE UNIVERSITY OF SOUTH AFRICA AS A MODEL FOR FUTURE PRACTICE

ABSTRACT

This study was conceptualised within a social-constructivist ontological orientation and, further, uses an interpretive epistemological lens to extract information from the participants who are coming from different life worlds. This thesis, **Effective assessment in open distance and e-learning: using the Signature Courses at the University of South Africa as a model for future practice**, investigated how emerging information communication technologies (ICTs) can be used to transform, enhance and influence student assessment practices in Open Distance and e-Learning (ODeL) contexts. The ultimate objective of the study was to establish assessment guidelines for effective student assessment in distance education using technology as an enabler. To achieve the objectives of this study, a mixed methods research methodology was adopted in which Unisa lecturers' and first-year students' experiences, perceptions, attitudes, and beliefs regarding the use of ICT as a tool to enhance and influence student assessment were sought. Despite some limitations, the study was able to reveal that technology has the potential to influence student-lecturer, and student-peer interaction thereby bridging the isolation gap that normally exists between them. Further, these potential benefits also include the identification of teaching strengths and weaknesses, the indication of areas where instructional change or modification is needed, and the application of more effective means of interacting with students. A key function of this study, therefore, is to help the lecturers involved in higher learning assessment to use technology effectively and efficiently to enhance assessment practices as a means of maintaining both the academic standards and enhancing the quality of the student learning experience. In addition, the study has shown that technology has the potential to enhance and influence student learning and motivation. Furthermore, this study made theoretical and practical contributions to the literature on information communication technology implementation on lecturers' and students' pedagogical and technological readiness to online learning and assessment in open distance and e-learning.

KEY WORDS:

Blended learning

Connectivism

Constructivism

Formative assessment

Heutagogy

Information Communication Technologies (ICTs)

Open Distance and e-Learning (ODEL)

Open Distance Learning (ODL)

Signature Courses

Student feedback

Technology enhanced assessment

TABLE OF CONTENTS

CHAPTER 1	1
ORIENTATION AND MOTIVATION OF THE STUDY.....	1
1.1 INTRODUCTORY BACKGROUND AND CONTEXT OF THE STUDY.....	1
1.2 GENERATIONS OF DISTANCE EDUCATION AND THEIR DELIVERY TECHNOLOGIES.....	4
1.2.1 The Cognitive-Behaviourist pedagogy of distance education.....	9
1.2.2 The cognitive and social constructivist pedagogy of distance education.....	9
1.2.2.1 Piaget's cognitive learning theory	10
1.2.2.2 Vygotsky's social constructivism learning theory	12
1.2.3 The connectivist pedagogy of distance education	13
1.3 PROBLEM STATEMENT	17
1.4 UNISA'S PEDAGOGICAL SHIFT FROM ODL TO ODeL MODEL.....	19
1.5 SIGNIFICANCE OF THE STUDY.....	21
1.6 THEORETICAL FRAMEWORK.....	22
1.7 RESEARCH OBJECTIVES	23
1.8 RESEARCH QUESTIONS	24
1.9 RESEARCH METHODOLOGY	24
1.10 ETHICAL CONSIDERATIONS	26
1.11 LIMITATIONS OF THE STUDY.....	26
1.12 DELIMITATIONS OF THE STUDY	26
1.13 DEFINITIONS OF OPERATIONAL CONCEPTS/TERMS	27
1.13.1 Connectivism	27
1.13.2 Constructivism.....	27
1.13.3 Formative assessment	28
1.13.4 Heutagogy.....	28
1.13.5 Information Communication Technologies.....	28
1.13.6 Ipsative assessment.....	29
1.13.7 Open Distance and e-Learning (ODeL)	29
1.13.8 Open and Distance Learning (ODL)	29
1.13.9 Peer-assessment	29
1.13.10 Self-assessment.....	30
1.13.11 Signature Courses	30
1.13.12 Technology-enhanced assessment.....	31
1.13.13 Transactional distance theory.....	31
1.14 ORGANISATION OF THE THESIS	31
1.15 CHAPTER SUMMARY	32

CHAPTER 2	34
LITERATURE REVIEW	34
2.1 INTRODUCTION.....	34
2.2 ODeL THEORIES USED IN THE STUDY	36
2.2.1 Keegan's two-way communication theory.....	37
2.2.2 Holmberg's guided didactic conversation theory.....	38
2.2.3 Siemens's connectivism theory	41
2.2.4 Laurillard's conversational learning framework	43
2.3 THEORIES OF LEARNING USED IN THE STUDY	45
2.3.1 Behaviourist school of thought	45
2.3.2 Cognitivist school of thought.....	46
2.3.3 Constructivist school of thought.....	48
2.4 ASSESSMENT PRACTICES IN HIGHER EDUCATION	53
2.4.1 Purpose of assessment.....	55
2.4.2 Types of assessment in ODeL	55
2.4.3 Provision of assessment feedback	58
2.4.4 Lecturers' and students' experiences of assessment practices	60
2.4.5 Student engagement in assessment practices	63
2.5 TECHNOLOGY ENHANCED ASSESSMENT	64
2.5.1 Digitally enhanced assessment.....	66
2.5.2 Benefits of using technology for assessment purposes	67
2.6 THE SIGNATURE COURSES PEDAGOGY	72
2.6.1 Student assessment in Signature Course pedagogy	74
2.6.2 The significance of the Unisa Signature Course pedagogy	76
2.7 ASSESSMENT IN OTHER MEGA ODeL UNIVERSITIES.....	80
2.7.1 The Western Governors University (WGU).....	81
2.7.2 State University of New York (SUNY).....	83
2.7.3 The Open University of the United Kingdom (OUUK)	84
2.7.4 Athabasca Open University	87
2.7.5 The Indira Gandhi National Open University (IGNOU).....	88
2.7.6 The Open University of China (OUC)	90
2.8 CHAPTER SUMMARY	92
CHAPTER 3	94
RESEARCH DESIGN AND METHODOLOGY	94
3.1 INTRODUCTION.....	94
3.2 RESEARCH PARADIGM: INTERPRETIVE SOCIAL CONSTRUCTIVISM.....	95
3.3 RESEARCH METHODOLOGY: MIXED METHODS RESEARCH	99
3.3.1 Pragmatism as research design	101

3.3.2	Population of the study.....	103
3.3.3	Study sample and sampling procedure	104
3.3.4	Data collection instrument (Individual and focus group discussions)	105
3.3.5	Data collection methodology (Phase 1 – qualitative approach).....	106
3.3.5.1	Individual and focus group discussions	108
3.3.5.2	Data analysis for individual and focus group discussions	120
3.3.6	Data collection methodology (Phase 2 – quantitative research)	125
3.3.6.1	Data collection using a questionnaire	126
3.3.6.2	Analysing the questionnaire survey	126
3.4	STUDY TRUSTWORTHINESS	127
3.4.1	Credibility	127
3.4.2	Confirmability	128
3.4.3	Dependability	129
3.4.4	Transferability	129
3.4.5	Member-checking.....	130
3.4.6	Peer-debriefing.....	131
3.4.7	Ethical considerations	132
3.5	CHAPTER SUMMARY	133
CHAPTER 4.....		135
PRESENTATION OF THE FINDINGS AND DISCUSSIONS		135
4.1	INTRODUCTION.....	135
4.2	PRESENTATION OF THE FINDINGS FROM INDIVIDUAL AND FOCUS GROUP DISCUSSIONS	136
4.2.1	Theme 1: Access to ICTs	137
4.2.2	Theme 2: Lack of technical skills, knowledge and experience to use online resources	145
4.2.3	Theme 3: Lecturers’ and students’ attitudes toward ICTs	151
4.2.4	Theme 4: Student engagement in assessment practices	155
4.2.5	Theme 5: Student feedback	158
4.2.5.1	Sub-theme 1: Time constraints.....	160
4.2.5.2	Sub-theme 2: Workload.....	162
4.2.6	Theme 6: Lecturers’ and students’ readiness for online learning	167
4.3	TRIANGULATION OF FINDINGS FROM FOCUS GROUPS DISCUSSIONS	169
4.3.1	Teaching and learning in Signature Courses.....	170
4.3.2	Technical knowledge and skills for online learning	171
4.3.3	Correlation of variables	172
4.4	ANALYSIS OF THE STUDY’S FINDINGS.....	176
4.5	CHAPTER SUMMARY	179

CHAPTER 5.....	180
ESTABLISHMENT OF STUDENT ASSESSMENT GUIDELINES FOR ODL.....	180
5.1 INTRODUCTION.....	180
5.2 REFLECTIONS ON THE UNISA SIGNATURE COURSE PEDAGOGY.....	181
5.2.1 The distinctive features of the Signature Courses pedagogy.....	183
5.2.2 Student interaction and engagement in Signature Courses.....	186
5.2.2.1 Student-lecturer interaction.....	187
5.2.2.2 Student-peer interaction.....	187
5.2.3 The role of management and administration in the Signature Courses.....	189
5.2.4 Student assessment and feedback in the Signature Courses.....	191
5.3 TOWARDS THE ESTABLISHMENT OF STUDENT ASSESSMENT GUIDELINES.....	192
5.3.1 Provision of ICT infrastructure.....	194
5.3.2 Technology enhanced curriculum infrastructure and pedagogy.....	196
5.3.3 Continuous professional staff development.....	197
5.3.4 Technology enhanced student support system.....	197
5.3.5 Quality assurance.....	199
5.3.6 Programme monitoring and evaluation.....	199
5.4 IMPLICATIONS OF THE GUIDELINES ON STUDENT ASSESSMENT.....	200
5.5 CHAPTER SUMMARY.....	201
CHAPTER 6.....	202
SUMMARY OF THE STUDY FINDINGS, CONCLUSIONS, RECOMMENDATIONS, LIMITATIONS, AND IMPLICATIONS.....	202
6.1 INTRODUCTION.....	202
6.2 SUMMARY OF THE MAJOR FINDINGS OF THE STUDY.....	203
6.3 CONCLUSIONS.....	208
6.4 RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER STUDY.....	210
6.5 REFLECTIONS ON THE STUDY METHODOLOGIES.....	213
6.6 LIMITATIONS OF THE STUDY.....	214
6.7 STUDY IMPLICATIONS FOR PRACTICE AND ASSESSMENT.....	215
REFERENCES.....	216

ANNEXURES.....	244
ANNEXURE 1: PERMISSION TO INTERVIEW UNISA ACADEMIC STAFF AND FIRST-YEAR STUDENTS	245
ANNEXURE 2: ETHICAL CLEARANCE CERTIFICATE.....	246
ANNEXURE 3: PARTICIPANT CONSENT FORM FOR INTERVIEW	248
ANNEXURE 4: LECTURERS INTERVIEW GUIDE	249
ANNEXURE 5: STUDENTS FOCUS GROUP DISCUSSION GUIDE	250
ANNEXURE 6: FIRST-YEAR STUDENTS' QUESTIONNAIRE SURVEY	251

LIST OF TABLES

Table	Title	
1.1	Generations of distance education and their assessment strategies	5
1.2	Anderson and Dron's (2011) generations of distance education classified according to their pedagogies	16
2.1	Unisa Signature Courses used in the study	71
4.1	Teaching and learning interaction in Signature Courses.....	171
4.2	Correlation of variables	175

LIST OF FIGURES

Figure	Title	
4.1	Students' use of ICTs in Signature Courses	172
4.2	Use of MyUnisa in Signature Courses	173
5.1	Student-teacher and student-student interaction	188
5.2	Technology Enhanced Student Assessment Guidelines (TESAG)	194

LIST OF ACRONYMS

AU	Athabasca University
BYOD	Bring your own device
CAA	Computer Assisted Assessment
CAL	Computer Assisted Learning
CAES	College of Agriculture and Environmental Sciences
CAS	College of Accounting Sciences
CBL	Computer based learning
CCRTVU	China Central Radio and Television University
CEDU	College of Education
CHS	College of Human Sciences
CLAW	College of Law
CMC	Computer mediated communication
CMAs	Computer marked assignments
CNED	Centre National' d Enseignement a Distance
CPD	Centre for professional development
CSET	College of Science Engineering and Technology
DCLD	Directorate for curriculum learning and development
DE	Distance education
DHET	Department of Higher Education and Training
DISA	Department of Institutional Statistics and Analysis
DISS	Directorate for Instructional Support Services
DoE	Department of Education
EMAs	End of Module Assessments
ERIC	Educational Resource Information Centre
ICTs	Information communication and technologies
IGNOU	Indira Gandhi National Open University
JISC	Joint Information System Committee
MOOCs	Massive online open courses
ODeL	Open distance and e-learning
ODL	Open and distance learning
OOUK	Open University of the United Kingdom
OUC	Open University of China
PNU	Payanne Noor University
PQM	Programme Qualification Mix
SDAC	Student Disciplinary Appeals Committee

SMS	Short message services
STI	Student-teacher interaction
SSI	Student-student interaction
STOU	Sukhothai Thammathirat Open University
SUNY	State University of New York
TA	Teaching assistant
TEL	Technology enhanced learning
TESAF	Technology enhanced assessment framework
TMA	Tutor-marked assignments
TSA	Technikon South Africa
UK	United Kingdom
UNED	Universidad Nacional de Educacion a Distancia
UNISA	University of South Africa
USA	United States of America
VUDEC	Vista University Distance Education Campus
WGU	Western Governors University
ZPD	Zone of proximal development

CHAPTER 1

ORIENTATION AND MOTIVATION OF THE STUDY

1.1 INTRODUCTORY BACKGROUND AND CONTEXT OF THE STUDY

Assessment is the core of teaching and learning at any educational institution. In light of this, the University of South Africa (Unisa) is driving its review and reconfiguration of its assessment systems and practices to improve the quality of assessment to improve student throughput and success rates. Unisa's move towards e-learning involves the move from past practices which include print-driven, manual systems, an overburdened Programme Qualification Mix (PQM), complicated infrastructure, provider-centred academic architecture, to taking optimal advantage of ICTs and educational technologies and a student-centred academic architecture. Given the global trend towards e-learning, one of the key institutional imperatives of this project has been to test a technology-driven assessment process which, if properly implemented, would lead to a non-venue based (summative) assessment system. This component of the project has become known as the alternative assessment project.

To roll out the alternative assessment component, certain modules or courses, known as the Signature Courses were identified. These were courses in which most students are doing undergraduate courses and are led by lecturers who are willing to innovate and experiment. In order to provide a concise description of student assessment in Signature Courses, the researcher provides a discussion based on the key features of the Signature Course pedagogy. This is followed by a discussion on how student assessment is conducted in Signature Courses. Further, a brief explanation on the role of course leaders and teaching assistants (TAs) in Signature Courses will be presented. Currently, there are seven Colleges with Signature Courses. However, this study only included six Colleges because at the time of writing this thesis the seventh College was not yet established (See Chapter 3, section 3.4.1 of this thesis for more information on this issue). The objectives of this study are therefore, first, to demonstrate how technology, through effective pedagogies, can enhance and influence assessment and student feedback using the Signature Courses' pedagogy at Unisa as exemplar. Signature Courses are fully online, undergraduate courses with large student numbers,

using an online class model which divides the large courses into small classes, each of them supported by a teaching assistant (TA). Secondly, the findings from the experiences of Unisa lecturers and first-year students will culminate in the establishment of a practical student assessment framework for open distance and e-learning contexts. In general the objective of this study is to show how technology can enhance and influence assessment practices in open distance and e-learning (ODeL) environments. To achieve these objectives, the study pays attention to Unisa lecturers' and first-year students' experiences, perceptions, attitudes, and beliefs regarding the use of technological affordances to enhance and influence assessment practices in ODeL contexts.

To understand Unisa's transition from a print-driven university to one that utilises online facilities, it is necessary to provide a background and context of the study. The University of South Africa (Unisa) dates back to 1873 when its predecessor, the University of the Cape of Good Hope, was established by the Cape parliament through Act 16 of 1873 (Boucher, 1973). The university was to be governed by a Council of twenty members, appointed initially by proclamation of the Governor for a period of six years. Initially it operated as an examining body for higher education institutions in the South African region (Boucher, 1973). In 1910 the Cape, Natal, Transvaal and the Orange Free State Colonies were united into the Union of South Africa and in 1916 the name of the University of the Cape of Good Hope was changed to the Unisa (Boucher, 1973). In 1918, it moved from Cape Town to Pretoria, the administrative capital of the Republic of South Africa. Once installed in the administrative capital, Unisa continued to be the national examining body. It incorporated a number of university colleges in their formative years before they became autonomous universities. The idea of teaching at Unisa took root when Unisa had to answer the question: Was there not a possibility of devising a system of postal services for people living and staying far from the urban centres where the universities had tended to develop? Unisa answered this question by establishing a Division of External Studies in 1946, a course of action that rendered the university an international pioneer in distance education and which remains the only mega-university on the African continent. In 1947, Unisa started to offer correspondence education (Boucher, 1973). Moving from its locale in the centre of the city, the university came to occupy its present main campus on Tshwane's Muckleneuk Ridge in 1972. After 1994, major internal changes began to prepare the institution for life in the new democratic dispensation (Unisa, 2014).

The year 2004 saw the rise of a 'new' Unisa after a successful merger between the former university, Technikon Southern Africa (TSA) and the incorporation of Vista University Distance Education Campus (VUDEC). The newly merged Unisa became the only dedicated distance education institution in the country, the first comprehensive university in South Africa, the largest distance education institution on the African continent and among the largest mega universities in the world (Andersson, 2013). As a consequence of its merger, Unisa has evolved, moving away from being a purely correspondence institution to one that makes use of a more comprehensive mode of facilitating teaching and learning. Recognising that the institution must engage in an on-going process of change, it also has to ensure the implementation of innovative teaching and learning practices that are consistent with an open and distance learning (ODL) context and which are flexible and also student-centred (Higher Education Quality Committee (HEQC, 2009:31).

Although Unisa claims to be the oldest single mode distance education institution in the world, the University of London is the oldest by virtue of being an examining body for its colleges including the University of the Cape of Good Hope, which later came to be known as Unisa. In 1858 the University of London offered its degrees to any student, regardless of their location (Boucher, 1973). Today, the university has over 54 000 students in over 180 countries who are studying for degrees through the University of London International Programme. In comparison with the University of London, Unisa offers study opportunities to more than 400 000 students from 130 countries around the world, of whom around 29 000 students are from South Africa's continental neighbours. The university has a presence across South Africa with its main campus situated in Tshwane, a student campus at Sunnyside in the same city, and a newly established Science Campus in Florida, Johannesburg. In addition, it has seven regional offices countrywide as well as one in Akaki, Ethiopia, together with a total of 28 learning centres (Unisa, 2014). As an ODeL institution, Unisa has redefined its understanding of student support, embraced alternative assessment strategies and explored new technologies to support teaching and learning. It is, arguably, through the adoption of effective technologies and evolving pedagogies that Unisa is looking to a future in which e-learning will play a significant role (Directorate of Information and Statistics Analysis (DISA, 2015). Since 2007, Unisa has embraced ODeL with all its potential challenges and responsibilities. It is the pedagogic influence that these new technological affordances have made on student assessment that is going to be the focus of this

study. Notably, the use of technology for educational purposes has always been in the forefront of most cutting-edge open and distance learning systems. Technology-enhanced teaching and learning has helped enormously in overcoming the physical distances between educators and students, enabling the flexible delivery of education at a distance, anyplace, anytime. In fact, the usage of technology has been a defining factor on each generation of distance education (Keegan, 2005:33). To further understand Unisa's transition from correspondence to ODeL model, it is useful to look at the generations of distance education and see where Unisa stands in terms of delivery technologies as well as its pedagogies and assessment.

1.2 GENERATIONS OF DISTANCE EDUCATION AND THEIR DELIVERY TECHNOLOGIES

Peters (2003) emphasises the importance of new information and communication media which brought digitalisation into our daily lives as well as our educational institutions. He asserts that there are historically distinct phases of distance education and each phase has its own unique form of teaching, learning and assessment behaviour. Keegan (2005:33) characterises the growth of distance education in terms of generations of technologies adopted by open and distance learning institutions keen on providing the support to its teaching-learning process. An examination of the literature on generations of distance education reveals that there are several distance education practitioners who perform research on this issue. Most helpful are the studies undertaken by Aoki (2012), Bates (2008), Daniel (1999), Andersson and Dron (2011), Garrison, Anderson and Archer (2001), Holmberg (2003), Keegan (2005), Moore (2007), Peters (2003), Rumble (2004), Siemens (2006), Taylor (1995, 2001, 2010) amongst others.

Amongst the several ways in which distance education has been classified, the idea of generations is the most useful. Most practitioners try to classify distance education in terms of the dominant technology used but others make a case for a classification based only on differing use of pedagogies. For the benefit of the reader the researcher includes both sides of the debate on generation of distance education. Peters (1994) confirmed that distance education had progressed through stages. Distance education and technologies are considered inseparable as in order to reach students at a

distance, one must use certain tools or technologies to do so (Aoki, 2012). Taylor (2001, 2010) suggests five generations of distance education which he classifies according to their delivery technology. Table 1.1 shows the different types of distance education generations of what is now called ODL. Currently, Unisa is in between the third and the fourth generation, even though there are some elements of the fifth generation. From the table it can be deduced that all ODL generations are technologically driven, with their distinctive features emerging directly from the type of the technology used. From this table we can see where Unisa and most other ODeL institutions are in terms of these generations and their delivery technologies.

Table 1.1: Generations of distance education and their delivery technologies

Generation	Model	Assessment methods	Delivery technologies
First generation	Correspondence	Hand written examination	Print
Second generation	Multi-media	Written (typed or hand written)	Print, video-recording, audio-tapes, computer based learning
Third generation	Multi-media	Written assessment(typed or hand written)	Teleconferencing, video conferencing TV/Radio broadcasts
Fourth generation	Tele-learning	Online assessment using internet	Interactive multi-media online, Internet based access to www.resources
Fifth generation	Flexible learning	Intelligent flexible learning	Interactive multi-media online Internet based learning

Adapted from Bates (2005)

The first generation of distance learning (the correspondence model) for instance used the book as its main medium and assessment was largely based on hand written examinations. The delivery technology used for teaching and learning was in print form: books, study guides, and manuals. This is so-called print-based correspondence education. In this stage, the interaction between teachers and students is usually limited to correspondence, meaning hand-written texts are sent via postal mail (Bates, 2005). It is difficult to gauge the extent of student learning in this mode as student evaluation is usually summative and left to the end of the course. This is the stage in which the Unisa started in 1947. It relied on the post-office for the delivery of the study materials to its students (Boucher, 1973).

The second generation (multi-media model) is characterised by the use of radio and television as instructional media in addition to print materials. This generation is often referred to as the industrial mode of distance education because of its call for the division of labour in producing and delivering instructional materials and the potential to educate thousands of students at once (Peters, 1993). Many open universities in the world including the Open University of the United Kingdom (OUUK), Open University of Japan and Korea National Open University started as second generation institutions (Anderson & Dron, 2011). When these institutions began teaching, broadcasting media such as television and radio were selected as the mediums of instruction as they could reach mass audiences and matched the mandate of open universities to expand educational opportunities (Anderson & Dron, 2011).

The third generation (two-way, synchronous tele-learning using audio-video) utilises information communication technologies (ICTs) such as synchronous interactive technologies, video-conferencing for example, and relies heavily on lecturing and questions. According to Gunawardena, Keller., Jayatilleke., Faustino., Barret., Skinner and Fernando (2011) synchronous e-learning refers to a learning event in which a group of students are engaging in learning at the same time. This type of learning is commonly supported by media such as video conferencing and chat, and has the potential to support e-learning in the development of learning communities. Further, when utilising synchronous learning, isolation is often overcome because continued contact and becoming aware of themselves as members of a learning community rather than isolated individuals communicating with the computer.

This generation of distance education is often used by multi-campus institutions because it saves travel time between campuses for instructors (Bates, 2008). However, this generation provides relatively small economies of scale, little flexibility for students, because they still have to attend a campus at a set time, and the average cost per student tends to be high. Nevertheless, synchronous teleconferencing is popular because instructors do not have to change or adapt their teaching methods to any extent. This generation differs from the fourth generation because the fourth generation uses flexible learning based on asynchronous communication through the World Wide Web (www) (online learning) and the Internet. Furthermore, the third generation enables increased student-teacher and student-student interaction at a distance to have

collaborative group work, flexibility for learners to study anywhere at any time (Bates, 2005).

The fourth generation (flexible learning model) relies largely on computer-mediated communication. Teaching and learning are done online using Internet or e-learning facilities. According to Peters (2003:88), the personal computer serves at the same time as a carrier and interactive medium through distribution, display and instruction. In addition, it provides pedagogically useful services that traditional media are completely unable to do. This generation encompasses flexible learning based on asynchronous communication through the Internet and world-wide-web (online learning) and enables increased student-lecturer and student interaction at a distance including collaborative group work, flexibility for students to study anywhere at any time, and economies of scope, in that courses for relatively small numbers can be developed without high start-up costs. Asynchronous e-learning is commonly the type of learning that is facilitated by media such as email and discussion boards. This type of learning supports work relations among students and with lecturers, even when participants cannot be online at the same time.

The fifth generation is termed the intelligent flexible learning model because of its ability to provide automated computer-based responses. A key consideration for the fifth generation is the use of automated response systems to reduce variable costs of computer mediated communication (CMC) which in the fourth generation is resource intensive. According to Taylor (2010), the fifth generation is still experimental as it is based on heavy automation of learning, and uses interactive multi-media online, Internet-based access of www resources and CMC to communicate with the students. Taylor (2010) identifies this generation as a “derivation” that provides the fluidity, flexibility, and speed needed to drive the next iteration of educational technology in an age where knowledge and information are the chief currencies. This generation is dominated by digitisation and has the potential to decrease significantly the cost of online tuition and thereby increase significantly access to education and training opportunities on a global scale. Through the application of automated response systems, which entails the use of software that can scan the text of an incoming email and respond intelligently without human intervention, the fifth generation of distance education, the intelligent flexible learning model, will deliver a quantum leap in economies of scale and associated cost-effectiveness (Taylor, 2010). This is also the

generation of Big Data, something of which Taylor (2010) could not have been aware. The phrase Big Data emerged first among scientists analysing data from areas like particle physics and climatology. Big Data refers to “the capacity to search, aggregate and cross reference large data sets” (Boyd & Crawford, 2013:663) and should be explored not only for its potential but also to question its capacities, its socio-political consequences and the need for critique (Lyon, 2014). According to Lyon (2014:3), Big Data is, “data about data.” Kitchen cited in Lyon (2014:5) describes Big Data as having the following characteristics:

... Huge volume, consisting of terabytes and petabytes of data, high velocity, being created in or real time, extensive variety, both structured and unstructured, exhaustive in scope, striving to capture entire population of systems, fine-grained resolution, aiming at maximum detail, while being indexical in identification, relational with common fields that enable the conjoining of different data-sets, flexible, with traits of extensionality (easily adding new fields) and scalability (the potential to expand rapidly).

Tools and techniques for Big Data include new ways to aggregate, manipulate, analyse and visualise large volumes of data, in a flexible and multidisciplinary approach (Mckinsey Global Institute, 2011). The three main characteristics of Big Data are (1) velocity, which asks for more processing power from computers to handle all data, (2) volume, so that traditional data bases may not be appropriate, and (3) variety, with data related to audios, videos, simulations, 3D models, location coordinates, and so on. While most of the current discourses emphasise the increasing amount of data, the real value and peril in Big Data lies in its networked and relational nature (Bauman & Lyon, 2013; Boyd & Crawford, 2013; Marwick, 2014; Mayer-Schonberger & Cukier, 2013) with at least three significant actors in this drama: government agencies, private corporations and, albeit unwittingly, ordinary users (Lyon, 2014:3). In big data lies the potential for revolutionising everything. According to Prinsloo, Archer, Barnes, Chetty and Van Zyl (2015), who describe the possibilities of working with Big Data, traditional research methods will have to evolve to face this new reality of Big Data. The challenge lies also not only with the technical aspect of finding, organising and combining the often unstructured data, but with the contextual insights needed to interpret and apply the knowledge and intelligence gained. In their critique of these generations of distance

education classified according to delivery technologies, Anderson and Dron (2011) suggest only three generations of distance education classified according to the dominant pedagogy used: cognitive-behaviourist pedagogy, social-constructivist pedagogy, and connectivist pedagogy, and focus on the learning experiences encapsulated in the learning design. Following this view, the researcher, now elaborates on three generations, classified in terms of differing pedagogies, in order to provide an effective view of learning in many environments, including the open and distance environment.

1.2.1 The Cognitive-Behaviourist pedagogy of distance education

According to Anderson and Dron (2011), the first generation, cognitive-behaviourist, is characterised by the thinking that learning means behavioural changes derived from learning stimuli, and is the dominant thinking in computer-assisted instruction and instructional systems designs. Behaviourism and cognitivism pedagogies focus on the way in which learning was predominantly defined, practised, and researched in the latter half of the 20th century (Weibell, 2011). According to these theories learning is a mechanical process of associating the stimulus with response. For theorists like Watson (2007), Thorndike (1931) and Skinner (1968) the central emphasis of behaviourism relies on observable indicators that learning is taking place, that is, the focus of behaviourism falls on the conditioning of observable human behaviour. Watson, (2007) the father of behaviourism, defined learning as a sequence of stimulus and response actions in observable cause and effect relationships. Watson (2007) believed that the stimuli that humans receive may be generated internally or externally. According to Skinner (1968), voluntary or automatic behaviour is either strengthened or weakened by the immediate presence of a reward or a punishment. This theory emphasises that positive or negative reinforcements increase the probability that the antecedent behaviour will happen again. Learning is therefore, defined as a change in the behaviour of the learner (Miller, 2003).

1.2.2 The cognitive and social constructivist pedagogy of distance education

Constructivism is a school of thought that emphasises the learner's role in constructing meaning out of their social interactions with the environment (Taber, 2006, 125). Jean Piaget and Lev Vygotsky are two prominent figures in the development of constructivist

theories. They share the common belief that classrooms must be constructivist in nature. However, there are differences in their theories regarding how constructivism should be carried out in a classroom situation. Constructivism as a paradigm or world view posits that learning is an active constructive process. The learner is an information constructor. People actively construct their own subjective representations of objective reality. New information is linked to prior knowledge, thus mental representations are subjective (Bently, Ebert & Ebert, 2007). This paradigm claims that humans are able to understand the information they have constructed by themselves. According to constructivist theories, learning is a social advancement that involves language, real world situations, and interaction and collaboration among learners (Taber, 2006). Constructivism is a theory based on observation and the scientific study of how people learn. Whenever we are confronted with information or facts about life, we are faced with the necessity of harmonising our new knowledge and experience with everything that we have understood and believed up to that point (Cooper, 1993). Constructivism proposes that learner conceptions of knowledge are derived from a meaning-making search in which learners engage in a process of constructing individual interpretations of their experiences (Cooper, 1993:12). Constructivists believe that knowledge is the result of individual construction of reality (Taber, 2006:125). Two types of constructivism emerged in the late 1970s, namely, cognitive and social constructivism (Vygotsky, 1978).

1.2.2.1 Piaget's cognitive learning theory

Piaget's (1968) cognitive learning theory provides a solid framework for understanding children's ways of doing and thinking at different levels of their development. It gives us a window into what children are generally interested in and capable of at different stages. Piaget proposed that children progress through a sequence of four developmental stages: First, the sensorimotor stage where the child interacts with the environment and builds a set of concepts about reality and how it works; secondly, the pre-operational stage in which the child is not yet able to conceptualise abstractly and needs concrete physical situations; thirdly, concrete operations when the child starts to conceptualise and create logical structures that explain his or her physical experiences; last, the stage of formal operations in which the child's cognitive structures are like those of an adult and include conceptual reasoning (Piaget, 1968). Of primary importance to behaviourists is how the association between stimulus and response is

made, strengthened, and maintained. Piaget (1968) introduced cognitive constructivism in which knowledge is constructed by either assimilation or accommodation. Piaget (1968) rejected the idea that learning was the passive assimilation of given knowledge. Instead, he proposed that learning is a dynamic process comprising successive stages of adaptation to reality during which learners actively construct knowledge by creating and testing their own theories of the world (Piaget, 1968). Piaget's theory assumes that learners impose concepts on the world to make sense of it. According to Piaget's cognitive theory, learning takes place through discovery. In his view, for learning to occur learner should be allowed to construct knowledge that is meaningful for them (Piaget, 1968).

Although the theory is less contemporary and influential, it has inspired several important educational principles such as: acceptance of individual differences, sensitivity to learners' readiness to learn, the discovery of new ideas, and the construction of knowledge (Piaget, 1970). Furthermore, Piaget posits that learners cannot be taught key cognitive tasks if they have not reached a particular stage of development. He later (1968) expanded this theory to explain how new information is shaped to fit with the learner's existing knowledge, and existing knowledge is itself modified to accommodate the new information. The major concepts in this cognitive process include: (1) assimilation, which occurs when a learner perceives new objects or events in terms of the existing schemes or operations, (2) accommodation, and (3) equilibrium should be elaborated (Piaget, 1970).

According Piaget (1968) the biological maturation that human beings go through causes distinct stages in cognitive development. Each of these stages is sequential, dependent on one another to develop, characterised by acquisition of discernable skills, and reflects qualitative differences in cognitive abilities (Fosnot, 1996; Gillani, 2003; Jarvis, Holford & Griffin, 2003; Piaget, 1970). According to Piaget (1970), the mechanism of change in cognition is equilibration, which is a dynamic interplay of progressive equilibria, adaptation and organization, and growth and change in the master developmental process (Fosnot, 1996; Ho, 2004). To handle this situation and to form a comfortable state of equilibrium in the cognitive structure, the individual needs to modify or reorganize his or her schemata via adaptation. This internal process of restructuring the schemata is done through assimilation and accommodation (Gillani, 2003). While assimilation is a process of integrating new information with existing knowledge,

accommodation is a process of modification or transformation in existing cognitive structures in response to a new situation.

1.2.2.2 Vygotsky's social constructivism learning theory

Vygotsky (1978), known for his theory of social constructivism, believes that learning is a collaborative activity and that learners are cognitively developed in the context of socialisation and education (Vygotsky, 1978). He rejected the assumption made by Piaget (1970) that it was possible to separate learning from its social context. According to Vygotsky (1968) every function in the child's cultural development appears twice: first, on the social level and, later on, on the individual level (Vygotsky, 1978:57). Social constructivism emphasises the importance of culture and context in understanding what occurs in society, and constructing knowledge based on this understanding. This perspective is closely associated with many contemporary theories, most notably the developmental theories of Vygotsky (1978), Bruner (1995), and Bandura's (2005) social cognitive theory. Social constructivism is based on specific assumptions about reality, knowledge, and learning.

Vygotsky (1978) emphasised the role of language and culture in cognitive development and in how we perceive the world, and claimed that these provide frameworks through which we experience, communicate, and understand reality. Vygotsky (1978) believed that learning takes place within the Zone of Proximal Development (ZPD), which he defined as the distance between a child's "actual developmental level as determined by independent problem solving" and the child's level of "potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978: 86). The ZPD is the level at which learning takes place. It comprises cognitive structures that are still in the process of maturing, but which can only mature under the guidance of or in collaboration with others. To ensure development in the ZPD, guidance received must have the following features: First, inter-subjectivity in which two participants who begin the task with different understandings arrive at a shared understanding (Piaget & Inhelder, 1967:375). Second, scaffolding in which the support offered during a teaching session to fit the child's current level of performance is adjusted. Third, guided participation in which endeavours between expert and less expert participants are shared. To understand and apply models of instruction that are rooted in the perspectives of social constructivists, it

is important to know the premises that underlie them. Social constructivists believe that reality is constructed through human activity. Members of a society together invent the properties of the world. For the social constructivist, reality cannot be discovered: it does not exist prior to its social invention. To social constructivists, knowledge is also a human product, and is socially and culturally constructed (Piaget, 1968). Individuals create meaning through their interactions with each other and with the environment they live in. Social constructivists view learning as a social process where the emphasis is put on the collaborative nature of learning and the importance of cultural and social context (Leask & Younie, 2001). It does not take place only within an individual, nor is it a passive development of behaviours that are shaped by external forces. Meaningful learning occurs when individuals are engaged in social activities (Vygotsky, 1978:56). Learning is more than the assimilation of new knowledge by students; it is the process by which students are integrated into a knowledge community. It is believed that constructivists such as Piaget (1968) had overlooked the essentially social nature of language and consequently failed to understand that learning is a collaborative process.

According to Vygotsky (1978), cognitive and social constructivism share a large number of underlying assumptions, and an interpretive epistemological position. For instance, students perceive learning as an active, not a passive, process, where knowledge is constructed, not transmitted. Furthermore, cognitive and social constructivism approaches believe that knowledge is based on personal experiences and the continual testing of hypotheses. According to these approaches each person has a different interpretation and construction of knowledge process, based on past experiences and cultural factors (Vygotsky, 1978:56).

1.2.3 The connectivist pedagogy of distance education

The third generation of distance education pedagogy, known as connectivism, emerged recently and is built around networked connections and based on students' ability to actively participate in networked communities. According to Siemens (2004), connectivism is a learning theory which is contextualised in a digital era and characterised by the influence of technology in the field of education. Siemens (2004), who is considered the precursor of connectivism, defines his theory as a learning theory for the digital age and as such seeks to describe how students use personalised, online and collaborative tools to learn in different ways to previous generations of students.

Downes (2007) and Siemens (2013) have written papers defining connectivism, arguing that learning is the process of building networks of information, contacts, and resources that are applied to real problems. Connectivism inclines towards the belief that knowledge exists outside of the individual, and the individual makes connections between information to build new knowledge. In the previous generations of distance education, the role of institutions in designing and evaluating students' learning is considerable, while in the connectivist model where learners rely upon existing networked communities to develop their own net presence, the role that the educational institution plays in individual learning may be reduced to guiding and credentialing what students have learned (Siemens, 2004).

Connectivism defines learning as a continual process which occurs in different settings including communities of practice, personal networks and workplace tasks. The connections that students make help them create their own learning network. Siemens (2006) points out that some traditional learning theories such as behaviourism, cognitivism, and constructivism have limitations, because these theories were developed at a time when technology had not impacted learning to the degree it does today. Siemens's (2005) assertion that these theories were developed when knowledge was growing more slowly prompts a question: how does connectivism compare to other learning theories and how does it differ from the established paradigms?

Anderson and Dron (2011) state that connectivism is built on an assumption of a constructivist model of learning, with the student at the centre, connecting and constructing knowledge in a context that includes not only external networks and groups but also his or her own histories and predilections. The student in the digital age (native) is immersed in a technological environment with little separation between formal learning, social networks, recreation, and employment (Siemens, 2006; Downes, 2007). While the term 'digital natives' has become overused, Prensky (2011:2) describes it as people who grew-up with digital experience at an early age and are used to 'receiving information really fast. They like to parallel process and multi-task. They prefer their graphics before text. They function best when networked' (Prensky, 2011). Connectivism's pedagogy may not seem significantly different from social-constructivist pedagogy but differs from other education paradigms in the degree of control an institution has over students' learning. Through this connected web, students will be able to stay up-to-date with content as it changes. Furthermore, this would also provide

them with a chance for collaborative learning. Again, connectivist pedagogy makes it easier for students to engage in online discussion groups wherein they share information freely. It is important to indicate that through Internet connectivity students are able to surf freely without the constraints of established academia. This free range brings us to the importance of virtual academia where there is no top-down control. Virtual academia does not have any formal structure because it does not exist as a formal entity. Students in a virtual academia have the Internet itself as their home institution (McLean, 2014:209).

In virtual academia there is peer-to-peer help, but no formal support systems, funding streams, no fees for teaching or learning. People put in what time they choose and cover their own costs of going online. In virtual academia the culture tends to be a practical and pragmatic one, emphasising cooperation and mutual benefits, rather than competition. In connectivist pedagogy, information is shared freely rather than being locked into books and journals. Internet connection and increasing bandwidth have led groups to more real time online meetings, many including audio and video, which are more social and help to reduce the isolation factor. Table 1.2 shows the three generations of distance education that are classified according to their pedagogies.

Table 1.2: Anderson and Dron's (2011) generations of distance education classified according to their pedagogies

Generation of distance education pedagogy	Technology	Learning activity	Learner granularity	Content granularity	Learner assessment	Educator role
Cognitive-behaviourism	Mass media, Print, TV, radio, one-to-one communication	Read and watch	Individual	Fine-scripted and designed from the ground up	Recall of facts	Content creator, sage on the stage
Constructivism	Conferencing (audio,video,and Web), many-to-many communication	Discuss, create, construct knowledge together with the teacher	Group	Medium: Scaffolded and arranged, teacher guided	Synthesize: Essays	Discussion leader, guide on the side
Connectivism	Web 2.0: Social networks, aggregation & recommender systems	Explore, connect, create and evaluate	Network	Course: mainly at object and person level, self-created	Art-fact creation	Critical friend, co-traveller, co-creator of knowledge

16

1.3 PROBLEM STATEMENT

While several studies (Tuomi, 2006; Sharpe, Beetham & De Freitas, 2010; Fluck, Pullen & Harper, 2009; Joint Information State Committee (JISC), 2010; Juwah, 2012) have been conducted on how emerging technologies have changed student pedagogy in open and distance learning, there is a paucity of information on how these technologies impact on the teaching and learning practices within the Signature Course pedagogy at the Unisa. As technology has become increasingly important in all spheres of life, Unisa would like to ensure that every one of its graduates is able to function effectively in the digital age. The Signature Course pedagogy is one way of furthering this aim. This study, therefore, examines how emerging technologies can be used to transform student pedagogic interactions in higher education contexts, including resource-scarce and resource-rich ODL institutions, by looking at the impact and design of the Signature Courses at Unisa, with particular reference to student assessment practices. Moreover, because it is a relatively under-researched domain, the researcher will also focus on first-year students' pedagogical experiences of e-learning readiness and assessment.

In particular, the study will focus on how the envisaged pedagogical changes brought about by the emerging technologies will affect the students, teaching staff and other higher education stakeholders. Further, this study will also focus on monitoring the extent of student access to ICTs, because it is an obvious precursor to technology use. The pace of Unisa's evolution, as explained previously, from a distance to an ODeL institution requires a corresponding change in teaching and learning policies and procedures, hence the introduction of heutagogical teaching and learning in distance education. Heutagogy is a process in which knowledge is created through the transformation of experience and the control of the experience that comes from the individual student (Canning, 2010:70). In a heutagogical approach to teaching and learning, students are highly autonomous and self-determined and emphasis is placed on development of student's capacity and capability with the goal of producing students who are well-prepared for the complexities of today's workplace. In heutagogy, students are not only recipients of information they are also co-creators of knowledge (Blashke, Kenyon & Hase, 2014:9). Heutagogic pedagogy forms part of social constructivism since all of them encourage students to be knowledge creators. However, the main aspect that differentiates heutagogy and social constructivism is the latter's reliance on the use of technology to facilitate student learning.

According to Blashke et al. (2014:9), the following principles and practices are important in heutagogical learning and should be adhered to: (1) Students should be involved as partners in their own learning, (2) the pedagogy should enable the students to contextualise concepts, knowledge and new understanding, (3) learning should be individualised as much as possible, (4) the pedagogy should facilitate collaborative learning, (5) it should encourage the use of experiential learning techniques, (6) it should provide sufficient resources and allow for exploration, (7) there is confidence in the student and (8) there is a recognition that teaching and lecturer control could become a block to learning (Blashke et al. (2014).

While this list of heutagogical principles and practices is not exhaustive it can be deduced that the student and the lead lecturer¹ and/or the TA are in partnership in the learning process with the student consistently placed at the centre of the design process (Mischke, 2015). The heutagogical model proposed by Unisa relies much on the role of the TA. The TA is not responsible for course development nor does he/she develop the assignments or the marking rubrics. All this is pre-prepared by the teaching team responsible for the module or course (Baijnath & Ryan, 2014). The TAs, essentially do three things: (1) address organisational issues and answers all the respective students' queries, (2) mark all the assignments, and (3) facilitate the subject-matter related discussion. The TAs facilitate group conversation, promote student to student interaction, grade frequent, focused formative assignments as well as summative assignments tasks, and they also provide individual feedback to students on their assignments and offer general student support.

Currently Unisa has implemented heutagogic teaching and learning only for those students who are registering for the Signature Courses. A heutagogical approach to learning requires that students be self-directed or self-regulated, and thus views assessment not as a discrete measurement of our learning, not as a score on a test they must pass. Instead, assessment becomes an ongoing act of our learning-an inherent and integrated element of our learning process and our ongoing practice as students. As an act of learning, assessment involves at least two promising practices: (1) seeking and receiving guidance and feedback from others who have helpful feedback to offer, and (2) reflection and critical reflection as a form of self-assessment, review, and planning (Blashke, 2012). Assessment in a heutagogical framework does

¹ This term will be explained later in the thesis.

not position a lecturer as an evaluator and thus an authority-but instead positions the student as a privileged informant about his or her own learning (Cambridge, 2010). Distance education, as a distinct form of education, both requires and promotes autonomy, a student skill that is central to a heutagogical teaching and learning approach (Peters, 2000). Because the student's autonomy is characteristic of and promoted in distance education learning environments, distance education inherently supports a heutagogical practice. This study therefore, provides an overview of a perspective about assessment at Unisa as an on-going act of learning by using a heutagogical or social constructive approach in a technology-rich environment. Having briefly explored the journey undertaken by Unisa from its beginnings through its merger processes to the present and its concomitant progression in terms of pedagogies and paradigms from correspondence through distance to open distance and e-learning philosophy, the researcher shall now discuss Unisa's pedagogical shift from traditional correspondence, ODL to an ODeL model.

1.4 UNISA'S PEDAGOGICAL SHIFT FROM ODL TO ODeL MODEL

In the last few years, the world has experienced dramatic changes and developments in the availability, use, accessibility and diverse types of ICTs. Unisa (2014) defines ODeL as a learning model that endeavours to bridge the time, geographical, economic, social, educational, and communication distance between the institutions and the students, the academics and the students, the learning materials and the students and amongst the students themselves. ODeL is characterised by the use of new Web 2.0 tools (Department of Education, 2007; Mbatha, 2014), which allow for more interaction between the lecturer and the students, the students and the learning environment, the student and fellow students, and the students and the institutions to which they are affiliated. These tools include among others, video conferencing, blogs, social media, online discussion forums, etc. The optimal and appropriate use of information technology, now more than ever, is crucial if Unisa is to deliver on its vision of becoming the African university in the service of humanity by being Africa's premier distance education provider. In order to enhance the quality of its distance education programmes, Unisa has carefully monitored the technology changes that have taken place among its students (Unisa, 2014). ICT is becoming an increasingly important link between student learning and student success as Unisa moves towards an ODeL model of teaching and learning. This section therefore, explores Unisa's imminent shift

from ODL to ODeL. The transition of Unisa from traditional correspondence to an ODL model has seen several changes in teaching and learning environments (Unisa, 2014). While this transition has enjoyed some degree of success in terms of ICT-enhanced teaching and learning, the Unisa ODeL plan clearly articulates that there is need to develop a conceptual framework and strategy for technology-enhanced teaching, learning and learner support (Chetty, 2014). The ODeL framework is premised on the assumption that student learning can be optimally supported by modern electronic technologies and other digital facilities. It considers Unisa's initial mandate as an ODL institution to provide higher education opportunities to previously disadvantaged, predominantly African students who would otherwise not be able to obtain a higher education qualification at full-time, campus-based and contact higher education institutions to be the guiding paradigm in this shift. To achieve this and keep abreast with ICT advancements Unisa appointed a task team to focus on a road map aimed at developing an integrative sustainable relationship between ICT and teaching and learning. The ultimate objective was to increase technological support to staff and students. It was also envisaged that optimising the affordances of technology in teaching and learning at Unisa will serve an array of purposes. First, it will equip learners with generic ICT skills needed for life-long learning. Second, the integration of new technologies will meet the needs and aspirations of current and future learners. Third, it will encourage and support staff and students to use technology in innovative and effective ways in teaching and learning.

The move from ODL to ODeL presumes the existence of an established culture, use of, and reliance on modern electronic technologies. Clearly, teaching and learning in higher education institutions across the world are experiencing an ICT revolution, which is narrowing the gap between the student and learning materials (Bennett & Maton, 2010). The latter accords well with the philosophy underpinning ODeL. Specifically, ODeL aims to bridge, amongst others, time, geographical, economic, and educational and communication distance between students and the institution, their courseware and the academics. ODeL students are assumed to have access to, and to be able to make optimal use of, modern electronic technologies to access their study material and to interact with their lecturers without necessarily being required to make physical contact. Unisa needs to reconcile its commitment to the mandate to provide higher education learning opportunities for the majority of poor and previously marginalised Africans with the envisaged shift to ODeL. It needs to deal with the probable perception that the shift

to ODeL might have the unintended consequence of perpetuating inherited socio-economic inequalities; that it might potentially exclude the poor from access to open distance learning opportunities as a result of a policy shift that equates access to higher education opportunities with possession of, and access to modern electronic technologies, which are not automatically affordable. On a cautionary note, it should be borne in mind that before Unisa goes completely online all external barriers such as uneven access to the Internet should be considered and dealt with because failure to address the lack of internet connectivity would affect the whole process of teaching and learning online. Against this back-drop, it is clear that an important aspect of making ODeL successful at Unisa depends on access to and the effective utilisation of technology by the institution and the ability of learners to engage with technology to enhance their learning.

1.5 SIGNIFICANCE OF THE STUDY

The motivation for undertaking this study emerged from the researcher's own experiences as a lecturer who was concerned about the role that technology plays in influencing teaching and learning in both face-to-face and distance education institutions in higher education. Although technologies were available, they were not utilised to assess students, nor were the potential benefits of using technology for assessment purposes seen as something that could change the face of student learning, especially in distance education contexts. The study intends to demonstrate that the emergence of educational technologies not only makes it possible for technology to diversify assessment tasks but also to capture a broader range of skills than traditional assessment can achieve. The researcher shall also show that research into and the sharing of experiences about the role of technology-enhanced assessment practices, exemplified in this case by Unisa's Signature Courses, can help increase personal and institutional capacity by increasing awareness about pedagogical issues in assessment practices at institutions of higher learning. This study has the potential to answer some of the most important questions regarding technology as a delivery agent in open distance and e-learning. By determining which technological assessment instruments find commonality within distance educational programmes, educational leaders can evaluate these for possible implementation to establish procedures for assessing the learning outcomes within an open distance and e-learning delivery system. The new pedagogies require students to create new knowledge and connect it

to the world by using the power of digital tools. Furthermore, the significance of this study lies in its potential benefits of being able to provide strategies of identifying teaching strengths and weaknesses, the indication of areas where instructional change or modification is needed, and the application of more effective means of communication to students. A key function of this study, therefore, is to help staff involved in higher learning assessment to use technology effectively to enhance assessment practices as a means of maintaining both the academic standards and ensuring and enhancing the quality of the student learning experience. It is envisioned that this narrative research study will serve as a resource for educators to gain a better understanding of how technology can enhance student assessment in the South African higher education landscape and will contribute to new and innovative insights regarding student assessment practices in ODL in South African higher education as a whole. Furthermore, the value of this study lies in its potential use for planning student assessment practice guidelines in ODeL. Further, the study will produce a body of evidence about student assessment practices that will be informed by assessment theories and research studies and, therefore, has sound implications for ODeL in relation to improved teaching and learning practices, instructional design, and administrative support. The foregoing will culminate in a practical framework for institutional critique, review and reform of assessment policies in accordance with recent trends in ODeL higher education institutions.

1.6 THEORETICAL FRAMEWORK

According to Moore (1991:1), "Research that is not grounded in theory or conceptual framework is wasteful." Against this back-drop, the epistemology forming the basis of this study originates from an interpretive social-constructivist paradigm to explore Unisa lecturers' and first-year students' experiences of student assessment in ODeL environments. Interpretive social constructivist framework is relevant to this study as it emphasises and focuses on the importance of knowledge creation using technology as a delivery tool. The researcher utilises an interpretive social constructivist framework because of its ability to identify the gaps that exist in the learning process. Through this framework relevant intervention strategies could be provided by engaging the students in collaborative learning (Bandura, 2005; Taber, 2006). It is these intervention strategies that help the students to construct new knowledge. One of the primary goals persuading the researcher to use an interpretive social constructivist paradigm is the fact that it

allows students to be co-creators of knowledge since they take initiative for their own learning. According to Gibbs and Simpson (2004:3), the main idea in any assessment is to provide students with constructive feedback that is aimed at motivating them. Constructivism suggests that learning is more effective when a student is actively engaged in the learning process rather than attempting to receive knowledge passively. To take this argument further, a constructivist perspective emphasises the dynamic nature of learning where educators also learn from the students through dialogue and participation in shared experiences (Carless, Salter, Yang & Lam, 2011). Interpretive social constructivism theoretical framework was used because it puts emphasis on providing opportunities to students for making their own judgements and interpretations of the situations based on their prior knowledge and experience (Hussain, 2012). It is based on active involvement or participation of students by offering them activities and projects in their relevant disciplines and contexts, as is the case in Unisa Signature Courses. According to Sobat (2003), construction of new knowledge is based on prior experiences of students of by enhancing their rationality and reasoning ability and applying in real situation. In such situations, interactions between participation in learning communities lead to shared understandings as part of the development of communities of practice, with the student taking increased responsibility for seeking out and acting on feedback. Furthermore, the use of a constructivist approach has direct effects on student learning because students are active stakeholders in the process of knowledge construction and dissemination. Alternatively, within the socio constructivist paradigm, feedback is seen as facilitative in that it involves provision of comments and suggestions to enable students to make their own revisions and through dialogue, helps students to gain new understandings without dictating what those understandings will be (Archer, 2010). Therefore, active constructivism was affirmed to be an efficient instructional approach for creating and sustaining motivation and passion for knowledge construction in this research study.

1.7 RESEARCH OBJECTIVES

The objectives of this research study are:

- To explore Unisa lecturers' experiences, perceptions, attitudes and beliefs regarding ICT integration in student assessment in ODeL contexts.

- To explore Unisa first-year students' experiences of how technology can be used effectively to enhance student assessment and feedback in ODeL in terms of learning quality and teaching efficiencies.
- To encourage student engagement and interaction in the learning processes.
- To find out if Unisa lecturers and first-year students are pedagogically and technologically ready for online learning.
- To establish assessment guidelines for effective student assessment in ODeL environments.

1.8 RESEARCH QUESTIONS

The focus of this narrative case study is on exploring and describing how technology can enhance student assessment and feedback using Unisa's Signature Courses as an example of good practice. To obtain more and relevant information about the topic being investigated, the following research questions underpin the focus of the study:

- What are Unisa lecturers' experiences, perceptions, attitudes and beliefs toward ICT integration into the Signature Course curriculum to enhance student assessment practices at the University of South Africa?
- What are Unisa first-year students' learning experiences of using ICTs for learning purposes in Signature Courses curriculum?
- What role do lecturers play in student engagement and interaction?
- Are Unisa lecturers and first-year students pedagogically and technologically ready for e-learning and e-assessment?
- How can we use ICTs to improve student assessment in distance education environments?

1.9 RESEARCH METHODOLOGY

This study was guided by two related philosophies of life or paradigms namely, social constructivism and interpretivism. In a constructivist's philosophy of life, people believe that knowledge is created and it is subject to different interpretations that they attach or give to various phenomena. It is these interpretations that form the bases of our experiences and understanding of the world in which we live. These two philosophies of life became relevant for this research study since they all have the potential to engage

learners in the learning processes intrinsically and extrinsically. Based on the two life philosophies or paradigms described, this study utilised a mixed methods (qualitative and quantitative) research design to describe Unisa lecturers' and first-year students' experiences, perceptions, attitudes and beliefs regarding the use of technology to enhance student assessment in ODeL contexts. The rationale for settling on mixed methods research design was influenced by the researcher's interest to understand the participants' views regarding the impact that technology is making in improving students' throughput and success rates. This study therefore, started by using qualitative exploratory approaches (individual and focus group interviews) followed by a quantitative instrument (questionnaire) to triangulate the findings of the study that emerged from as the focus group interviews. The researcher used qualitative individual and focus group discussions because they are appropriate methods that allow the participants to vividly elaborate their perceptions and experiences regarding the Signature Courses at Unisa. Participants in this study were Unisa lecturers drawn from various Colleges² and are currently teaching Signature Courses. The second sample for this study was drawn from a group of first-year undergraduate students who had registered for one of the Signature Courses. Purposive sampling was used to select the participants as the intention was to use participants who were directly involved in the Signature Course pedagogy.

Before selecting the participants, the researcher made use of inclusion and exclusion criteria, for example, only first year registered students were to participate in the study and academic participants should be lecturers responsible for or active in offering Signature Courses. In order to trace additional participants, the study made use of snowball sampling. Snowballing is a method of expanding the sample by asking one participant to recommend others for interviewing (Babbie & Mouton, 2001). Snowballing was also used because the researcher anticipated that participants could also help to identify relevant data sources by asking knowledgeable people for referrals (Smith, Flowers & Larkin, 2009: 49). Data for the study were collected until saturation. The collected data were digitally recorded, transcribed and analysed using Collaizi's (1978) thematic data analysis framework. This framework was chosen because of its ability to provide step-by-step data analysis procedures for qualitative research. A detailed discussion of the methodology used is found in Chapter 3 of this thesis.

² Unisa has at present seven Colleges representing different disciplines. At the time of writing this thesis, only six Colleges had Signature Courses.

1.10 ETHICAL CONSIDERATIONS

This study has followed the generally-agreed upon ethical principles of social research. Before data for this study were collected, the researcher applied for ethical clearance from the University's Ethics Committee (see annexure 2). In this study the necessary ethical standards were maintained by having agreements with the research participants, recognising the necessity of confidentiality and informed consent, and developing procedures for ensuring full disclosure of the nature, purpose, and requirements of the research. Participants were free to withdraw from the research study at any time if they so wished without any penalties. Participants were informed of the rationale, recording and safe-keeping of the audio-recorded interviews and transcriptions. Participants were allowed to review and confirm or alter the research data to correspond to their perceptions and experiences. The researcher approached the participants of this study not as objects to be investigated, but as people who are knowledgeable, and from whom the researcher can learn something of value. In the interactions with the participants of the study, the researcher treated them with respect and dignity because they were important in helping to answer the study's research questions.

1.11 LIMITATIONS OF THE STUDY

The first and most obvious limitation of this research study is the use of a single case study: the implementation of a technology-enhanced teaching and learning project (Signature Course pedagogy) at Unisa. This limits the empirical generalisability of the study. Furthermore, the research study is limited to the use of exploratory mixed methods research (qualitative and quantitative) because the study aims at producing information that could improve Unisa's pedagogic practices. This study does not draw on an analytical framework that has already been tested by other researchers from other universities since the Signature Course Project is the first of its kind at Unisa. The framework established in this study emerged as the study progressed and a model came out of this exploratory work.

1.12 DELIMITATIONS OF THE STUDY

This study is restricted to one single mode distance education institution, namely Unisa. Therefore, the findings from this study cannot necessarily be generalised to other

ODeL. Despite this, the researcher believes that the results can be extrapolated to both conventional and distance education institutions across the world. The researcher's specific focus in this study is aimed at stimulating debates as to the future of education system in the advent of the emerging education technologies that are affecting how we teach, how our students learn and get assessed. All these call for our attention to reflect on our pedagogy.

1.13 DEFINITIONS OF OPERATIONAL CONCEPTS/TERMS

To understand how technology through effective pedagogies can enhance and influence student assessment and feedback in ODeL environments, a brief explanation of some important terminologies or concepts that are operational throughout this study is now presented. However, the terminologies provided here are by no means exhaustive and include among others the following:

1.13.1 Connectivism

Siemens (2004, 2006), who is considered the precursor of connectivism, defines his theory as a learning theory for the digital age and as such seeks to describe how students use personalised, online and collaborative tools to learn in different ways to previous generations of students. Connectivism came about as a result of the proliferation of modern technologies and their potential impact on the way students interact in an online environment. Connectivism defines learning as a continual process which occurs in different settings including communities of practice, personal networks and work place tasks. Further, connectivism is a learning theory in which the student makes connections between nodes of information to build knowledge. Through this connected web, students are able to stay up-to-date with content as it changes.

1.13.2 Constructivism

Constructivism as a paradigm that posits that learning is an active, constructive process in which learners construct new ideas or concepts based upon their current/past knowledge, social interactions, and motivation (Cooper, 1993). This theory is led by the ideas of Piaget (1968) and his theories of the four childhood stages of development

namely, the sensori-stage, the pre-operational stage, concrete operations, and formal operations.

1.13.3 Formative assessment

Formative assessment is conducted frequently and in an on-going manner during learning and is intended to give educators and students precise and timely information so that instruction can be adjusted in response to individual students' strengths and needs, and students can adjust their learning strategies or set different goals (Klenowski, 2009:263). Lecturers can adjust instructional strategies, resources, and environments effectively to help all students learn only if they have accurate and reliable information about what their students know and are able to do at any given time, and about how they learn best (Black, Harrison, Marshall & William, 2003:10).

1.13.4 Heutagogy

Heutagogy has been defined by Blashke et al. (2014:5) as a means whereby a student takes responsibility for his or her own learning and in so doing develops a series of skills including communication and teamwork, creativity and innovation, and positive values. Unisa's premise of heutagogy is not only wholly consistent with Unisa's vision of community engagement and social responsibility, but is also eminently suitable for the implementation of online course delivery, which is the chosen delivery mode for Signature Course pedagogy. Unisa's Signature Courses which were rolled out for the first time in 2013 are based on a theory called heutagogy (Baijnath & Ryan, 2014). For this to happen, students work in small groups of between 20 and 50 students, and they are expected to contribute knowledge to the group from their own life experiences.

1.13.5 Information Communication Technologies

ICTs is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning (Gipps, 2005).

1.13.6 Ipsative assessment

Ipsative assessment is assessment based on a learner's previous work rather than based on performance against external criteria and standards. Students work towards a personal best rather than always competing against each other (Brown & Glover, 2006).

1.13.7 Open Distance and e-Learning (ODeL)

The ODeL framework is premised on the assumption that student learning can be optimally supported by modern electronic technologies and other digital facilities. ODeL students are assumed to have access to, and to be able to make optimal use of, modern electronic technologies to access their study material and to interact with their lecturers without necessarily being required to make physical contact (Ngubane-Mokiwa & Letseka, 2014). Carswell, Thomas, Petre and Price (2000) argue that increased interaction in ODeL leads to a reduction in transactional distance between lecturers and students. Thus modern electronic technologies result in e-learning, online learning or digital learning through the use of remote electronic communication.

1.13.8 Open and Distance Learning (ODL)

Open and Distance Learning is a blanket term that encompasses blends of learning in different mixes and contexts; it encompasses e-learning, blended learning, mixed-mode learning, flexible learning, and distributed learning (Juwah, 2012:39). Most definitions, however, pay attention to the following characteristics: there is separation of the teacher and the learner in time or place (Peters, 2000:10). Open and distance learning provides appropriate student-support as a necessity to make learning meaningful, effective and rewarding and relies on multi-media communication and uses industrial processes (Keegan, 2005).

1.13.9 Peer-assessment

There are many variants of peer assessment, but essentially it involves students providing feedback to other students on the quality of their work. In some instances, the practice of peer feedback will include the assigning of a grade, but this is widely recognised to be a process that is fraught with difficulties. Peer assessment requires

students to provide either feedback or grades (or both) to their peers on a product or a performance, based on the criteria of excellence for that product or event which students may have been involved in (Falchikov, 2005:132). Again, peer feedback can encourage collaborative learning through interchange about what constitutes good work.

1.13.10 Self-assessment

Self-assessment is a process of formative assessment during which students reflect on and evaluate the quality of their work and their learning, judge the degree to which they reflect explicitly stated goals or criteria, identify strengths and weaknesses in their work, and revise accordingly (Boud, 2007:160). Self-assessment involves students in making decisions about the work they have done. Making judgments about the progress of one's own learning is integral to the learning process. Further learning is only possible after the recognition of what needs to be learned. If a student can identify his/her learning progress, this may motivate further learning. Self-assessment begins to shift the culture from the prevalent one in which students undertake assessment tasks solely in the spirit of pleasing the lecturer (Boud & Falchikov, 2006:144).

1.13.11 Signature Courses

In the Unisa context, Signature Courses are defined as introductory-level courses that uniquely express Unisa's vision to be the African University in the service of humanity. This means that Signature Courses should be relevant to South Africa as a nation on the African continent, its communities and its people. These (mostly) first-year courses are conducted fully online by students who are registering for the first time and the courses are aimed at enabling students to imbibe university values as set out in its graduateness statement, to acquire important skills needed in the world of work, and to function in society as socially responsible citizens (Bajjnath, 2014a/b). In a global context, Signature Courses are intended to stamp the signature or brand of the university on its graduating students.

1.13.12 Technology-enhanced assessment

Technology-enhanced assessment refers to the wide range of ways in which technology can be used to support assessment and feedback, and includes on-screen assessment. According to Zapata-Rivera and Bauer (2011), technology-enhanced assessment allows one to access and drive instruction more effectively and authentically than traditional assessment. For technology-enhanced assessment to be effective, pedagogically sound developments need to be supported by robust and appropriate technology within a supportive institutional context.

1.13.13 Transactional distance theory

Transactional distance theory presents a definition of distance education which implies the separation of educators and students. According to Moore (1993:23), in transactional distance there is “a psychological and communications space to be crossed, a space of potential misunderstanding between the inputs of instructor and those of the learner.”

1.14 ORGANISATION OF THE THESIS

Chapter 1 offers an introduction to the premises of the study and the structure or design of the entire thesis. In this chapter, the researcher presented the background and context of the study, the problem statement and rationale for undertaking the study. Thereafter, the purpose statement, research objectives, research questions, research methodology, significance of the study, study limitations, delimitations, ethical considerations, and definitions of operational concepts are described. As a conclusion to the chapter, content outlines for the remaining chapters are explained.

Chapter 2 provides a literature review based on technology-enhanced assessment practices in ODeL. This chapter provides a detailed discussion of the theoretical framework used in this thesis, Signature Course and its heutagogic pedagogy, and a comparative study of Unisa’s assessment practices with those of other mega ODeL institutions in the world.

Chapter 3 covers the study's methodology, methods and techniques, including data validation and ethical considerations. The study uses mixed methods research (qualitative and quantitative) inquiry to unearth and explore the perspectives of academics and students regarding Signature Courses at Unisa. Data is transcribed and analysed using Collaizi's (1978) and Kvale's (1996) thematic data analysis framework.

Chapter 4 reports on the results of the study in the form of themes that emerged from the interviews conducted with academics and first-year students from the various Colleges at Unisa.

Chapter 5 draws the study's findings together by establishing a framework for student assessment in ODeL. Further, Signature Courses are evaluated in terms of their practices and the study suggests improvements where necessary, gesturing towards the future for Unisa.

Chapter 6 concludes with a summary of the study's findings, recommendations, implications, limitations, and reflection of the thesis as a whole including its original purpose and the extent to which the study has answered the research questions. Finally, the chapter provides conclusions of the study as a whole.

1.15 CHAPTER SUMMARY

This chapter offered an introduction and outline of the entire thesis by describing Unisa's transformation history, the problem statement, research purpose, objectives, research questions, methodologies, including study limitations and delimitations. Further, this chapter reflected upon the transformational journey of Unisa in reconfiguring its organisational architecture within a context of wider socio-political change, the gap between the digital elite and those with limited access to education technology, and the practical ways in which these challenges are being addressed, while remaining faithful to its commitment to social justice. In this chapter the researcher started by identifying the role that is played by assessment in teaching and learning as it determines the goals for both lecturers and students. Assessment is central to learning experience and can be viewed as the single biggest influence on how students approach learning. According to Bloxham and Boyd (2007:23), the aim of assessment is to promote learning by motivating students, steering their approach to learning and

giving the educator useful information to inform changes in teaching strategies or assessment for learning. Currently, technology-enhanced assessment plays a very important role because of its ability to promote interactivity and collaboration when compared with traditional paper and pencil forms of distance education. The use of technology-enhanced methods in distance education has a major impact on the quality of interaction between educators and students, and on the development of online assessment methods, both formative and summative. Since assessment is a lens through which education is viewed and a driver of student performance, this researcher considers it an important component of any distance education programme. Next, chapter 2 presents a literature review based on technology-enhanced assessment in ODeL.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Chapter 1 provided the background and objectives of the study. Chapter 2 is divided into three sections which provide critical information on assessment practices within the context of ODeL, sourced from the relevant literature, to produce a body of evidence about student assessment that is informed and critiqued by assessment theory and research. The first section provides an overview of theories of distance education that speak to technology-enhanced assessment practices in ODeL contexts (see section 2.3 of this chapter). This section is aimed at grounding e-learning and e-assessment pedagogy in higher education institutions. However, emphasis will be given to those studies that shed most light on how lecturers utilise technology to enhance assessment practices and student feedback in ODeL contexts. In this context, the necessity to specify the paradigms or theories underlying student assessment practices in open distance and e-learning is obvious.

The second section reviews other learning theories that are associated with the research paradigm for this study namely, interpretive social constructivism. Further, this literature study reviews resources such as books, chapters in books, conference proceedings and journal articles that are not necessarily focused on technology-enhanced assessment but which have a bearing on or contain useful information or ideas about assessment practices in both distance and conventional education. The third section provides a comparative account of other ODeL universities which use innovative assessment practices and which have shaped my personal approach to this research study. Although these distance teaching universities share several similarities, they are not identical in their mission or practice. For convenience, the researcher divided these into two categories, the first including those universities that are open in terms of their admission criteria and the second including those universities that have admission criteria but which have considerable experience in reaching rural or dispersed students using online resources. From both categories, the researcher has made a selection of those mega universities most relevant for this study. These are: The Western Governors University (WGU) in the USA, New York State University

(SUNY), Open University of the United Kingdom (OUUK), Athabasca University in Canada, the Indira Gandhi National Open University (IGNOU) in India, the Open University of China (OUC), in Beijing, China. These universities were selected because, like the University of South Africa, they are dedicated distance education institutions collectively embracing pedagogical models that actively engage learners through the utilisation of technology as a tool to enhance teaching and learning.

This literature review is intended to determine the research currently available to address both the research topic and future research needed (see section 6.4) to gain a satisfactory perspective on the impact that technology-enhanced assessment has on student learning. It focuses on the ways in which technology alongside appropriate pedagogies is and can be used to enhance student assessment ODeL environments. Much of the current literature on open distance and e-learning (usually sourced from writers living in the developed world) assumes that students have easy access to computer hardware and other appropriate forms of connectivity such as 3G, 4G or fast, efficient Wi-Fi. While this literature is, in the main, useful and sound, what this study is offering is a localised South African perspective in which many students struggle to get the technological resources required.

This research study is, therefore, undertaken from a locale in which the above mentioned are not to be taken for granted. For example, at the time of writing this thesis, many students in South Africa struggle to obtain or simply cannot afford fast and freely available wireless Internet connections with the inevitable limitations this causes for effective e-learning. Throughout this chapter the researcher argues that even though much research has been done on technology-enhanced teaching and learning, there is still a gap on how technology can be utilised effectively to enhance and influence student assessment and feedback in ODeL. The researcher will also argue that the relative weightings of such technologies versus effective pedagogies involving tried and tested ways of teaching and learning should be carefully examined and that the most useful pedagogies are those that incorporate appropriate technologies as part of the teaching and learning package. Further, if digital technological tools are to be truly effective, they cannot be applied mechanistically but should be used flexibly and with an accompanying mind shift on the part of administrators and academics alike. A further aspect in this section will be the ways in which effective pedagogies can enhance assessment and feedback by using as example Unisa's Signature Course project

implemented at the Unisa in 2013. These Signature Courses will function both as a critical starting point for the researcher's research findings as well as a yardstick against which the effectiveness of technology-enhanced pedagogy in both conventional and distance education contexts will be measured.

2.2 ODeL THEORIES USED IN THE STUDY

Distance learning for higher education has its advocates and its detractors. Undoubtedly, with increasingly rapid technological developments including hand-held, networked and personal hardware capable of processing huge amounts of data, and advances in creating virtual classrooms, the allure of delivering quality education cheaply and widely has attracted the attention of educators, policy-makers, corporate boards and end-users. While it is not the purpose of this study to review definitions of distance education, the researcher will provide a brief commentary on some important theories of distance education in order to clarify their place and relevance to this study. In the previous section, the researcher provided a discussion of behaviourist, cognitivist, and constructivist learning theories.

However, these broad and underlying theories should be read alongside other and more recent theories that are pertinent to an understanding of the challenges faced by large-scale universities such as Unisa in adapting their processes and pedagogies to the affordances of digital technologies which, in theory, can bridge the distance between the institution and the students in distinct ways but which, in practice, prove to be problematic. Unisa, through its Signature Courses pedagogy, is attempting to solve its challenges in relation to creating cost-effective and pedagogically effective ways to engage in online learning and assessment. There are a number of theories that deal with students in distance education, for instance: Keegan's (1980:13) two-way communication theory, Moore's (1991:1) transactional distance theory, Max Weber's bureaucratic theory, Taylor's scientific and administrative theory, Moore's (1989) learner-instructor interaction theory, Holmberg's (2003:79) guided didactic conversation theory, Peters' (2003:87) industrial model theory, and Siemens's (2004) connectivism theory among others. However, this study will only deal with those theories that directly speak to the research topic. With this study, the researcher also intends to weigh their importance and validity for assessment practices in open distance and e-learning contexts.

For the purpose of this study only four theories that are directly related to the study are going to be discussed. First, the researcher provides a concise discussion based on Keegan's two-way communication theory. This is followed by Holmberg's (1989) guided didactic conversation theory and Siemens' (2005) connectivism theory. The researcher concludes with Laurillard's conversational learning framework which is not a theory per se but a very useful model for understanding teaching and learning in digitally enhanced environments. These theories are going to be discussed within a broader context of other theories of ODeL and foreground those concepts that have a particular relevance for effective assessment practices in ODeL contexts. The theories and operational concepts to be discussed here have a common focus: they emphasise the use of technology to mediate teaching and learning in open distance and e-learning environments. Further, these theories have been chosen because they speak to ideas which create opportunities for students to construct knowledge through the utilisation of technological affordances in both distance and conventional institutions.

2.2.1 Keegan's two-way communication theory

As indicated in chapter 1 of this study, distance education self-evidently differs in crucial ways from traditional contact-based tuition but it has also suffered, historically, from a lack of theories pertaining to its distinct nature as education at a distance (see section 1.7 in chapter 1 of this study). Keegan (1980, 2005) challenged this state of affairs by categorising and classifying current theories of distance education and thus helped in part to redeem the field of distance education from its hitherto poor reputation. He also defined distance education (1980:13) variously as a wall-less education, open learning, open teaching, non-traditional education, distance learning, distance teaching, correspondence education, independent study, home study, flexible education, flexible learning, lifelong-learning, individualised learning, and supported self-study education. Keegan (1980) is also important in purporting a two-way communication theory, emphasising the pedagogic processes that exist between the student and the lecturer and articulating the necessity to recreate the inter-subjectivity that exists between the student and the lecturer in conventional education through carefully prepared study materials which may or may not be mediated by technologies such as teleconferencing, videos, and so on. Keegan (1980) underlined the 'artificiality' of the process whereby the inter-subjectivity between student and lecturer is consciously reconstructed for the distance learner. Keegan's importance in the discourse of distance education rests in

his justification of distance education (DE) as a distinct and theoretically valid field and in his ideas supporting the reintegration of the teaching act which occurs via a two-way process (Keegan, 1980). This links directly to one of the central concerns of the study, that dialogic communication between the student and the lecturer is crucial in facilitating the educational process. Keegan's two-way communication theory coincides with contemporary concerns in student-lecturer interaction which makes it possible for the student to become motivated and receive feedback. Further, Keegan's (1980) two-way communication theory takes on new life for student-student interaction when appropriate technology is used to deliver instruction, as is the case with Unisa's Signature Course pedagogy.

Keegan's two-way communication theory is important in this research study since it gestures towards the crucial role that digital technology plays in bridging or narrowing the teaching-learning gap that exists between the student and the educator, students and their peers, student and the institution. Keegan (like Holmberg, who will be discussed later) also considers that printed instructional materials can be designed to include many of the characteristics of interpersonal communication and therefore does not limit his notion of interpersonal communication to telephone tutorials, teleconferences, or other similar forms. However, Keegan (2005:33) was aware of the emergence of electronic communication and the issues in research and practice that real time communication may bring to the fore in the field. In Keegan's view (2005), apart from students in the traditional sense, technology can cater for anyone, anytime, anywhere, who is in need of information for the betterment of their lives and is thus an attempt to introduce and link the notion that teaching and communication are equally vital areas of concern when studying through distance education as they are for people everywhere. The researcher now moves on to another pioneering theorist in distance education, Borje Holmberg, who has contributed significantly to the development of distance education over several decades.

2.2.2 Holmberg's guided didactic conversation theory

At the heart of Holmberg's (1989) theory is the concept of the guided didactic conversation, which refers to both real and simulated conversations, although the reliance is upon simulated conversation. Although conversation is the defining characteristic, this theory is directed to the pre-produced course package and falls

clearly within Otto Peters' industrial paradigm. While the industrial paradigm had considerable influence on distance education, it was neither a theory of teaching nor of learning, but rather a contribution to clear thinking around the organisation of distance education, particularly because it encourages the use of technology to teach/reach those students who could not have access to traditional education (Peters, 1994). The industrial paradigm is associated with a specific mode of production linked to manufacturing processes (Peters, 1994, 2000).

According to the industrial paradigm, if technology is utilised there will be mass production in and enabled access by many people to distance education. Peters' argument is that communications technology and lifelong learning demands will precipitate a transformation of the traditional university into an institution of self-study and distance teaching (Peters, 2000). It is this that persuaded Holmberg (1989:64) that, regardless of how conversational the pre-produced course is, communication between the instructor and the distance learner is essential. In essence, this theory posits distance education as a friendly conversation fostered by well-developed self-instructional materials resulting in personal relations, intellectual pleasure and motivation to study (Holmberg, 1989). Another element in Holmberg's (1989:64) thinking is that the empathy that we usually see in face-to-face interactions should also be present in distance education. However, according to him this can only be possible when organisational and administrative structures and processes are created to facilitate the process (Holmberg, 2003).

In addition to friendly conversation and a friendly atmosphere, Holmberg (2003) also advocated the use of guided didactic conversation as an intrinsic component of effective distance education. Empathy between those who teach and those who learn is universally a good basis for learning. In Holmberg's view (2003) dialogue should be grounded in strategies such as empathy-based conversation, whose aim is to recreate ties between students and lecturers by means of simulated communication. According to Holmberg (2003), dialogue and interaction between lecturers and students are important because the two parties are able to collaborate and interact with each other. Easily understandable conversations, enabled by presentations and friendly interactions, help students to learn (Holmberg, 1989:64). In this way, learning is a process characterised much more by active student involvement rather than being dependent on the exclusive influence of the lecturer (Vygotsky, 1978).

Holmberg underlines the necessity to award the same measure of care to distance students as to face-to-face students. To achieve this Holmberg (1989:64) suggested that distance education practitioners should devise techniques whereby a conversation that would normally take place face-to-face is embedded in the courseware components of a particular course. This is in direct contrast to Peters' view where the objectification of the teaching process is a result of the industrialisation of distance learning, and where distance education has shifted away from interpersonal communication, which is at the heart of the face-to-face education, to the objectified, rationalised and technologically-produced interaction (Peters, 1994:111). Holmberg (2003:79) contended that because the distance education process involves the physical separation of the lecturers and students it should involve the use of various media, which include print, mechanical and electronic media, to initiate interaction between the lecturers and the students. This physical distance between lecturers and students is then no longer an issue because educational technologies bridge the gap (Holmberg, 2003:79).

This researcher has found Holmberg's ideas useful and relevant for this research study, in particular his guided didactic theory (2003), because it regards technology as a tool that can be utilised to facilitate student-teacher-content interaction. Since this research study looks at how technology can be used effectively to enhance and influence student assessment, the researcher's argument here is that, for example, TAs who are responsible for facilitating learner-instructor, student-student interaction in Signature Courses should encourage students to have more interaction and more engagement with each other so that both the students and the TAs become co-creators of knowledge instead of being passive recipients of information. Indeed, guided didactic theory resonates well with the heutagogical method used in the Signature Courses since it emphasises how students interact, engage and collaborate with each other in order to achieve the objectives of student learning. Further, if the facilitators and TAs encourage and show empathy through the use of guided didactic comments to all the students entrusted to them, the learning outcomes will improve since the students will be intrinsically motivated.

To conclude this section the researcher argues that since the future (and in most cases, the present) is digital the world over, where possible student-lecturer interaction should be promoted through the use various blended mechanisms that are easily and readily available to the students such as Facebook, blogs, Whatsapp, Twitter, and Skype.

While the majority of these applications are usually used for social-networking it may be productive to use them for learning purposes (Birochi & Pozzebon, 2011; Fonseca, 2011; Zawacki-Richer & Anderson, 2014). This issue would be explored in a later chapter of this thesis. Next, the researcher provides a discussion of a more recent idea by George Siemens.

2.2.3 Siemens's connectivism theory

Connectivism and its corollary connected knowledge were ideas developed by Siemens and which emerged from the proliferation of modern technologies available to learning practitioners. Siemens, who is considered the precursor of connectivism, defines his theory as “a learning theory which is contextualised in a digital era characterised by the influence of technology in the field of education” (Siemens, 2004:4). Connectivist learning is similar to ideas described as connected learning (Anderson & Dron, 2011), social networked learning (Fonseca, 2011), and network connected learning (Fadel, Rogers, Satterthwaite, Smith, Warren, Palmer & Fiennes, 2013). Siemens points out that such traditional learning theories as behaviourism, cognitivism, and constructivism have limitations because these theories were developed at a time when technology had not impacted on learning to the degree it does today (Siemens, 2005:3).

In essence, connectivism is a learning theory in which knowledge exists outside of the student and in which the student makes connections between information to build knowledge (Siemens, 2005). According to Siemens (2004), learning occurs in different settings including communities of practice, personal networks and work place tasks (Conole, 2013; Siemens, 2013). The connections that students make help them create their own learning network and it is through this connected web that students are able to stay up-to-date with content as it changes. In Siemens's (2005) view the ubiquity of emerging mobile technology devices has resulted in debate and research on how they can benefit teaching and learning, as much as they benefit business, industry, and other social activities. Siemens (2004) describes connectivism as:

- An area in which learning and knowledge rest in a diversity of opinions.
- The process of connecting specialised nodes or information sources.
- Learning that may reside in non-human appliances.

- A state in which a capacity to know more is more critical than what is currently known.
- A process of nurturing and maintaining connections to facilitate learning.
- The ability to identify connections between concepts.
- A process in which maintaining current and accurate knowledge is the purpose.
- A learning process in which decision-making shifts as information can change and what is viewed as correct one day may be incorrect the next.

According to Siemens (2005:15), “considering technology and meaning-making as learning activities begins to move learning into the digital age.” Inherent to this new view-point on learning is the idea that it is no longer possible to experience everything there is to experience as people try to learn something new. People create networks which, simply defined, are connections between entities. By using these networks of people, of technology, of social structures, of systems, of power grids-learning communities can share their ideas with others, thereby “cross-pollinating” the learning environment (Siemens, 2005:21). Taking this a step further, the incorporation of mobile technologies such as cell/mobile phones in education supports the idea of productive networking because it enables interaction between a student and the lecturer as well as between a student and his or her peers (Makoe, 2012).

Siemens’ connectivist theory is important in this study because of its insights into the ways in which technology has fundamentally altered the way we approach knowledge and knowledge acquisition. Siemens’s (2006) theory has shifted the locus of learning from the acquisition of knowledge by an individual to the idea that knowledge is gleaned through sharing via networks. In other words, knowledge is stored in the Internet and can be sourced by anyone with access to the Internet and to networks on information. No one individual can store or access the vast amount of knowledge that is out there but networks of individuals can share different bytes of knowledge with others thus adding to the store of knowledge and diversifying knowledge. This in turn changes the way we perceive information and knowledge in radical ways and shifts the relative status of knowledge itself since the networks through which knowledge are shared, absorbed and communicated become more important than knowledge itself.

2.2.4 Laurillard's conversational learning framework

This thesis will also use Laurillard's (2002, 2007) conversational learning framework which is widely used in educational institutions to analyse educational technologies. Cognitivists suggest that students themselves gain knowledge, and reveal meanings of the world, while a lecturer only creates the environment that is suitable for teaching and learning. However, Laurillard (2002) expands the traditional cognitive perspective on student learning by implying that both the student and the lecturer are important in the cognitive process (McDowell, Sambell & Montgomery, 2012). For Laurillard (2002), a conversation or dialogue has always been a significant component of education. In this, she agrees with Freire (1970) that in pedagogy, dialogue presents itself as an indispensable component of both teaching and learning.

In her conversational framework, Laurillard builds on this work by emphasising the interaction and communication between the lecturer and the students and between student and peers and reiterates that genuine conversation between the lecturer, student and the media remains the most important type of conversation that can improve the student's cognitive development (Scott, 2001). Conversational framework advocates believe that the interaction and collaboration between students and lecturers play an important and essential role in the learning process. From this viewpoint, the critical point to make is that learning is a negotiated process whereby lecturer and students do not merely interact but decide together on what they will learn.

On the second point, Laurillard (2007) is highly critical of using technologies when they do not serve their purpose. However, her conversational framework is important in education because it is the only framework that could be used to analyse the issue of accessibility. Most of the learning theories discussed put emphasis on learning through practices such as fieldtrips, virtual labs, virtual field trips, simulations, etc. However, the accessibility issue differentiates them, so the conversational framework could help to structure an analysis, and focus attention on where accessibility issues are critical to deliver the equivalent learning experience. The most important value to draw from Laurillard's framework is that it provides a framework for checking the nature of the learning experience lecturers try to provide (Laurillard, 2002). One more aspect of Laurillard's framework points to practical forms of assessment where the lecturer uses real life examples for students to examine, interact and reflect upon.

Heinze, Procter and Scott (2007:111) note that this framework is based on the idea of “two-way communication or dialogue that occurs between the lecturer and the student in the development of the student’s knowledge.” In this framework, the lecturer and the student interact with one another and agree on learning objectives. Students are responsible for accomplishing educational tasks and receive feedback in the form of critical comments from the teacher (Boud, Cohen & Sampson, 2001). In her framework, Laurillard indicates that the importance of feedback should not be underestimated because it is important for effective learning. She claims: “Action without feedback is completely unproductive for the learner” (Laurillard, 2002:55).

The importance of Laurillard’s conversational framework for this study is clear because of its emphasis on the process of student-lecturer and student-student interaction. According to this learning framework, the role of the lecturer is to provide instruction, guidance, and feedback, while students have opportunities to display knowledge and skills acquired through the interaction processes (Laurillard, 2007). In this sense, a conversation framework of learning fits into the constructivist framework, since the emphasis is on the student as an active maker of knowledge. In addition, in line with Vygotsky’s (1978) work on learning progression, it is clear that intervention by another person and/or appropriate learning support tools allow an individual to develop further than if left on their own.

The conversational framework shows how the iterative cycles required for proper learning work together. Each theory proposes that the student’s conception, and the way he or she applies it in practice (learner’s conception as practice), will develop through iteration with other parts of the framework, depending on the theory: the lecturer, their own practice, debate with their peers, and comparison of their own practice with that of their peers. It, therefore, represents an engine of motivation that keeps the student engaged as long as the iteration persists. Each part of the framework has to be interpreted as a cycle that motivates the student’s continued participation. To orientate the researcher’s choice of an interpretive social-constructivist paradigm (see section 1.4 of Chapter 1) the researcher will provide a brief discussion on the historical origins of the behaviourist, cognitivist, constructivist and connectivist schools of thoughts.

2.3 THEORIES OF LEARNING USED IN THE STUDY

As noted in the background to this systematic literature review, the aim of this review is to consider the evidence in relation to lecturers' and first-year students' experiences of student assessment in higher education.

2.3.1 Behaviourist school of thought

Behaviourism has been intrinsically linked with learning for many years. The main proponents of this theory were J.B. Watson and I. Pavlov. However, Swiss biologist and psychologist Jean Piaget (1896-1980) is renowned for constructing a highly influential model of child development and learning. While looked upon less favourably than the more modern cognitivist and constructivist theories, behaviourism continues to be influential in teaching and learning in higher education. Learning has been defined in numerous ways by many different theorists, researchers and educational practitioners. However, behavioural theorists' definition of learning states that learning results in a change in behaviour or in the capacity to behave in a given fashion which results from practice or other forms of experience (Schunk, 1991:2).

Behaviourist psychology is an attempt to model the study of human behaviour on the methods of the physical sciences and therefore concentrates attention on those aspects of behaviour that are capable of direct observation and measurement. The behaviourists, see learning as a mechanical process of associating a stimulus with a response, which produces a new behaviour (Skinner, 1968; Winn, 1990:48). Such behaviour is strengthened by reinforcement. Behaviourist methods typically rely heavily on the use of positive reinforcements such as verbal praise, good grades, and prizes. Behaviourists view the student as a passive recipient of information who will respond to a stimulus (Weibell, 2011). According to Piaget (1968) there are four developmental stages by which children progress: first, the sensorimotor stage where the child interacts with the environment and builds a set of concepts about reality and how it works; secondly, the pre-operational stage in which the child is not yet able to conceptualise abstractly and needs concrete physical situations; thirdly, concrete operations when the child starts to conceptualise and create logical structures that explain his or her physical experiences; last, the stage of formal operations in which the child's cognitive structures are like those of an adult and include conceptual reasoning.

Of primary importance to behaviourists is how the association between stimulus and response is made, strengthened, and maintained. According to them the student starts as a tabula rasa (a clean slate) wherein behaviour is shaped by reinforcement. The student is characterised as being reactive to conditions in the environment as opposed to taking an active role in discovering the environment. Positive as well as negative reinforcement increase the probability of the repetition of behaviour. According to behaviourists, punishment decreases the chances of repetition of the behaviour. Further, Skinner (1968) found that inappropriate or previously learned behaviour could be extinguished by withdrawing reinforcement. Although both the student and the environmental factors are considered important by behaviourists, environmental conditions receive the greatest emphasis. The learning implications of this theory are that it allows for students to be provided with immediate feedback so that they can monitor how they are doing and take corrective action if required.

Further, this school of thought emphasises that learning materials should be sequenced appropriately in order to promote student-learning (Lorrie, 2000). For instance, sequencing could take the form of simple to complex, known to unknown, and knowledge to application. According to behaviourist theory, students should be told explicitly about the outcomes of the learning process so that they can set expectations and can judge for themselves whether or not they have achieved the outcomes of the lesson. Students should be tested in order to determine whether or not they have achieved the learning outcomes (Schunk, 1991). In sum, the behaviourist perspective suggests a focus on efficiency of conveying information and training skills, and emphasises teaching practices that involve well-organised routines of classroom activity, with clear plans and goals (Greeno & Moore, 1995:49). Of relevance to this study, the behaviourist perspective focuses on equity of access and opportunity to acquire valued knowledge and supports development of practices that ensure that all students can achieve a satisfactory level of basic knowledge.

2.3.2 Cognitivist school of thought

The cognitive revolution was a response to behaviourism, which was the predominant school in experimental psychology at the time. The shift from behaviourism to cognitivism stemmed from the behaviourists' failure to explain why and how individuals make sense of and process information. It could be said that the limitations of

behaviourism spawned the cognitive movement. Dissatisfied with behaviourism's heavy emphasis on observable behaviour, many disillusioned psychologists challenged the basic assumptions of behaviourism (Deubel, 2003). They claimed that prior knowledge and mental processes not only play a bigger role than stimuli in orienting behaviour or response but also intervene between a stimulus and response. As opposed to behaviourists' emphasis on behaviour, the cognitive school focuses on meaning and semantics. According to the cognitivists, not all learning occurs through shaping and changing of behaviours, instead the primary emphasis is placed on how knowledge is acquired, processed, stored, retrieved, and activated by the learner during the different phases of the learning process (Anderson & Dron, 2011:87; Greeno, Collins & Resnick, 1996). The cognitive school views (1) learning as an active process "involving the acquisition or reorganisation of the cognitive structures through which humans process and store information" and (2) the student as an active participant in the process of knowledge acquisition and integration (Anderson, Reder & Simon, 1997; Good & Brophy, 1990:187; Merriam & Caffarella, 1999:254).

According to the cognitivists, information from the environment is not automatically received but is processed according to the child's prevailing mental structures. The cognitive school of thought is based on a number of theorists' contributions. However, the most recognised theorist under this school of thought is Jean Piaget who was the first psychologist to make a systematic study of child development. Piaget argued that people are born with schemas, tending to organise their thinking processes, which at birth are called reflexes (Piaget, 1968). Researchers have posited that schemata or cognitive structures are the building blocks of intellectual development. Further, they define schemata as "An abstraction of experience that you are constantly fine-tuning and restructuring according to new information you receive" (Piaget, 1968:7). Schemata serve several functions in learning: categorising, remembering, comprehending, and problem solving. Again, schemata regulate attention, organise searches of the environment, and fill in the gaps during information processing. Thus, the mind uses schemata to selectively organise and process all the information individuals receive from the world (Ertmer & Newby, 1993:51). Piaget (1968:7) argued:

... as learners assimilate input from the environment, new information is not simply stored in the mind like information in files but is integrated and inter-related with knowledge structures that already exist in the mind of the

child. Every schema is coordinated with other schemata and itself constitutes a totality with differentiation parts.

This approach emphasises the collaboration that exists between the student and the lecturer in the creation of knowledge. As a result of this collaboration, the student is no longer a passive recipient of information, but a co-creator of knowledge (Anderson & Dron, 2011:87). The lecturer's most important responsibility is to facilitate and monitor the student's perspective, thinking and feeling. According to cognitive theory, learning is attained through rehearsal and consistent use of the information. Consistent work to embed previous learning will help new learning (Bruning, Schraw, Norby & Ronning, 2004). The cognitive perspective suggests a focus on differences among students in their interests and engagement in the concepts and methods of subject-matter domains, in the understandings that they bring to scholarly activities and in their learning strategies and epistemological beliefs, and supports development of practices in which these multiple interests, understandings, and approaches are resources that enrich the educational experiences of all students (Greeno et al, 1996). Cognitive psychologists therefore, place more emphasis on what students know and how they come to acquire it than what they do. For this reason, the cognitive school of thought focuses on making knowledge meaningful and helping the student to organise and relate new information to prior knowledge in memory (Ertmer & Newby, 1993:51).

2.3.3 Constructivist school of thought

Constructivism emerged as a result of a paradigmatic shift that rejects the views from behaviourist and cognitivist schools of thought and leans toward the premise that people construct their own knowledge through their personal experience rather than knowledge transmission and the recording of information conveyed by others (Johanssen, 1991; Sexton, 1997:3). Piaget is commonly considered the pioneer and parent of constructivist thought. Piaget's (1968) cognitive development is based on the idea that children's active engagement with their environment leads them to the construction of meaning and to learning (Piaget, 1968). Piaget (1968) argued that children must continually reconstruct their own understanding of phenomena through active reflection on objects and events till they eventually achieve an adult perspective. His theory provides a framework by which lecturers and educational technologists can analyse the behaviour of the student and design educational environments within which

children can construct their own knowledge and understanding in order to increase learning outcomes, performance and quality of learning (Piaget, 1968; Taber, 2006:125). The effectiveness of constructivism is that it prepares students for problem solving in complex environments.

In constructivism students are more active in building and creating knowledge, individually and socially, based on their experiences, cultural factors and interpretations. The student is, therefore, not a blank slate as it is alleged in behaviourism since the student brings past experiences and cultural factors to the learning process (Merril, 1991; Johanssen, 1998:11; Bandura, 2005). Constructivism emphasises that each of us generates our own rules and mental models which we use to make sense of our experiences (Cooper, 1993:12; Johanssen, 1998:28; Airasian & Walsh, 1997:78). Learning, therefore, is simply the process of adjusting our mental models to accommodate new experiences (Stavredes, 2011). As a result, there will be differences between taught knowledge and learned knowledge, since each student interprets taught knowledge based on his/her experience and builds his or her own meaning of that knowledge.

The role of the lecturer in constructivist theory is to try to understand how students interpret knowledge and to guide and help them to refine their understanding and interpretation to correct any mistaken understandings and improve learned knowledge quality. Constructivist pedagogy sees the student as an active participant in the learning experience rather than a passive vessel to be filled with information (Atherton, 2013; Brunner, 1995; Hussain, 2012). Therefore, constructivism is recognised as a learning theory that highlights the interaction of persons and situations in the acquisition and refinement of skills and knowledge. Further, the researcher shall discuss the two types of constructivism that are most relevant to learning and education namely, cognitive and social constructivism.

In contrast to Piaget's assertion that children's development must precede their learning, Vygotsky posited that social learning is likely to precede development. Vygotsky's social cognition learning model views culture as playing a key role in the development of cognition. Vygotsky's study of learning concentrates on the interplay between the individual and society, and how social interaction and language come into play in affecting learning or the development of cognition (Fosnot, 1996; Gredler,

1997:269). In general, learning is a social experience that occurs at a personal level and which must be internalised before it can be applied and adapted for future use. Working from Vygotsky's (1978) principle of social interaction, effective learning will only occur within an interventionist environment where there are opportunities to develop, apply and expand new skills and knowledge, supported at appropriate points and in appropriate ways to meet an individual's learning needs (Searle, 1996).

Another type of constructivism that is closely tied to social constructivism is communal constructivism. Communal constructivism is an approach to learning in which students not only construct knowledge as a result of interacting with the environment (Social constructivism), but are also actively engaged in the process of constructing knowledge for their learning community (Holmes, Tangney, Fitzgibbon, Savage & Mehan, 2001:1). In communal constructivism, learning is seen as a social and collaborative activity that is facilitated rather than directly taught by the lecturer. Building on constructivist theories, where students are involved in building their own knowledge, social constructivism adds an interactive dimension. This approach is influenced by the work of Vygotsky who believe that children learn from within themselves and as well as from influences in their social or cultural environment (Leask & Younie, 2001:118).

Although Vygotsky (1978) focused on the role of speech and not on the role of new technologies, the fact that communication is increasingly supported by computers, discussion boards, emails, MOOCs, and virtual worlds, has led to his work influencing theories of learning in the information age. In communal constructivism, students and lecturers are not simply engaged in developing their own information but actively involved in creating knowledge that will benefit other students and lecturers. Comparatively speaking, students will not simply pass through a course like water through a pipe but instead, they leave their own imprint in the development of the course, their school or university, and ideally the discipline. This will result in a gain for the institutions or course, but more importantly the students themselves will benefit (Leask & Younie, 2001). The communal constructivist approach requires that the courses be dynamic and adaptive. The approach requires that from the outset students should see themselves as producers and not just consumers of information. Within the course a wide variety of techniques are used to instill in students the idea that they are involved in a process of constructing knowledge and that construction is a communal affair. To achieve this students are encouraged to embark on group work and project-

based learning (Scardamalia & Bereiter, 2006). Extensive use is made of peer tutoring and mentoring. Lastly, communal constructivism stresses that students should be listened to and to be important to others. Further, giving students responsibility will train them to be responsible citizens. There are four tools for making this happen: scaffolding, cognitive apprenticeship, tutoring and cooperative learning. Scaffolding is a technique that involves changing the level of support for learning (Vygotsky, 1978:57). It works reactively by allowing students to access support in the form of learning materials, generic resources and tutor support at a time that meets their needs, as well as proactively by flagging areas of potential conflict, while suggesting additional learning resources and methods of support, to resolve such issues (Hunter, 2007:228). In addition to scaffolding, a student's learning benefits from teachers who think of their relationship with a student as a cognitive apprenticeship, using scaffolding and guided participation to help students learn (Adams, 2006:243; Sharma & Hannafin, 2007:27). As lecturers engage in an activity like this, they develop an understanding of the importance of the problem, comprehend the relevance to the topic, and construct knowledge through experience (Adams, 2006; Cole & Wertsch, 2011; Woolfolk, 2010:256) as is the case in Unisa's Signature Courses.

Constructivism sees learning as a social experience hence dialogue and collaboration are crucial, and, as the researcher shall show in a later discussion that these ideas form the back-bone of the pedagogy of the Signature Courses. The use of constructivism, particularly social constructivism develops confidence and respect for others, encouraging etiquette and social skills among students (Vygotsky, 1978:57). In constructivism assessment is based not only on tests, but also on student observation, students' work and students' point of view following the notion that knowledge is constructed through observation, reflection and interaction with the surrounding environment such as their peers, lecturers or technology (Dhindsa & Emran, 2006:175). Constructivism calls for the elimination of grades and standardised testing. Instead, assessment becomes part of the learning process so that students play a larger role in judging their own progress (Rust, O'Donovan & Price, 2005: 231). Within such a context, students can said to be engaged in constructivist assessment through oral discussion, hands-on activities, mind-mapping, cooperative learning, experiential learning, problem-based learning and inquiry learning (Hussain & Sultan, 2010:179). Assessment would, therefore, focus on the extent to which students can structure and restructure material for different purposes without the help of others (for example,

through inquiry-based tasks), and feedback would support students in becoming more self-directed. Hence this approach requires that students reflect, self-assess and generate feedback on their own learning (JISC, 2010:10). As in the Signature Courses, students are fully engaged in the learning process, see some form of personal gain from an activity, are motivated to test their current level of learning against known standards, and are offered targeted and timely support to help address subsequent personal learning needs (Atherton, 2013:2). The researcher has used a constructivist framework in this study because it has the ability to identify learning gaps and at the same time has the potential to provide relevant intervention strategies. Further, constructivism is particularly relevant in this thesis as it offers a context of cooperative and collaborative learning within which effective assessment can take place. The researcher sketched earlier that effective assessment enhanced by appropriate technologies is not a mechanistic process but involves people in dialogue with each other, as exemplified by Freire (1970) in which he shows how dialogue helps in the construction of knowledge. In his book Freire writes:

... In order to understand the meaning of dialogical practice, we have to put aside the simplistic understanding of dialogue as a mere technique. Dialogue does not represent a somewhat false path that I attempt to elaborate on and realise in the sense of involving the ingenuity of the other. On the contrary, dialogue characterises an epistemological relationship. Thus, in this sense, dialogue is a way of knowing and should never be viewed as a mere tactic to involve students in a particular task. We have to make this point very clear. I engage in dialogue not necessarily because I like the other person. I engage in dialogue because I recognise the social and not merely the individualistic character of the process of knowing (Freire, 1970:10).

Freire, cited in Hamilton (2002:8), advocated for an education system that would not position students as passive recipients of information but as active co-creators of knowledge, and he argued that the relationship should be democratic and reciprocal. In this sense, Freire (1970) presents dialogue as an indispensable component of the process of both teaching and learning. The fundamental goal of dialogical teaching is to create a process of learning and knowing that invariably involves theorising about the experiences shared in the dialogue process.

2.4 ASSESSMENT PRACTICES IN HIGHER EDUCATION

In order to identify studies that were related and relevant to the research topic and the research question, the researcher submitted the search terms to the Unisa librarians and other international primary search source indexes or databases that are available for information retrieval such as Pro Quest Dissertation and Theses, EBSCO HOST, Educational Resource Information Centre (ERIC), Google, Google Scholar, SAGE, Academic Search Premier, published and unpublished documents such as theses, dissertations, conference papers, unpublished manuscripts, government or agency report, peer reviewed studies and so forth. Further, studies were also identified by searching bibliographic data bases and registers of education research, by hand-searching current and previous studies of relevant journals, scanning reference lists of already identified reports.

At the time of conducting this systematic literature review the researcher realised that while no search could be exhaustive, failure to conduct a sufficiently exhaustive search is the most important threat to the validity of any integration. In this case, the researcher took the decision to stop searching for more information when the search engines ceased to produce any new relevant studies. In this review, dissertations and theses were found to be appropriate because they adhere to the standards of academic rigour required by universities, whereas published reports may be more specifically shaped by editorial policy. The researcher found that dissertations and theses are often particularly useful in providing a more detailed appreciation for what was done in the research and how conclusions were derived.

The search terms for this research study were “lecturers’ and students’ perceptions and experiences of student assessment”, “formative assessment”, “summative assessment”, “innovative assessment” and “technology-enhanced assessment”. Even though the researcher has made use of the term “qualitative research” for the searches, a number of good quantitative research studies also surfaced from the search. An examination of the literature on student assessment in higher education reveals that assessment has been studied, defined, and re-defined throughout its academic life. Several studies (e.g. Amundsen, 1993; Bates, 2010; Bull & McKenna, 2004; Brown & Czerniewicz, 2010; Davidson & Goldberg, 2009; Gikandi, Morrow & Davis, 2011; Holmberg, 2003; Juwah, 2012; Keegan, 2005; Kukulska-Hulme & Traxler, 2009; Mohr, 2010; Moore & Kearsely,

1996; Nga'mbi, 2011; Prensky, 2011; Scholtz, 2009; Thomas & Seely-Brown, 2011) have been carried out in order to determine how technology can be used to enhance and influence student assessment in open distance and e-learning contexts. Although the researcher cannot claim categorically that the results of these studies converge, they certainly confirm the importance and usefulness of particular digital technologies as enablers for enhancing assessment and feedback in distance education and e-learning environments.

First, it is important to emphasise that this literature review is meant to provide a review of studies on assessment in general, especially those studies that contain useful information or ideas on student assessment in both distance and conventional education. Secondly, this literature review will look at what research evidence there is about student assessment in higher education (Race, 2009). Despite the fact that research on student assessment in open distance and e-learning has been plagued by various challenges, there are useful studies that have been conducted on a variety of issues such as the challenges and benefits of formative assessment feedback, lecturers' workload, time constraints, student involvement in assessment practices, lecturers' perceptions and conceptions of student assessment in ODeL, lecturers' and students' readiness to e-learning and assessment, lecturers' and students' attitudes towards ICTs, etc.

Some of the most important studies undertaken regarding the above include those of Black and William (1998, 2009), Bloxham and Boyd (2007), Boud (2007), Brown, Race and Smith (2005), Carrol (2007), Flint and Johnson (2007), Garrison, Anderson and Archer (2001), Gibbs (2006, 2010), Gibbs and Simpson (2004), Huxham (2007), Macdonald and Carrol (2006), Makamane (2011), McAndrew and Carrol (2002), Morgan and O'Reilly (1999), Nicol (2009), Nicol and Macfarlane-Dick (2006), Palomba and Banta (1999), Rowntree (2008), Simpson (2008). The findings shall be presented according to selected aspects of assessment as follows: Purpose of assessment, perceptions and experiences of lecturers and students, formative versus summative assessment, self-assessment, student-engagement, student-feedback, self-assessment, technology-enhanced assessment, and changing practices in student assessment.

2.4.1 Purpose of assessment

Assessment experts, Gibbs (2008), Le Grange and Reddy (2009:103) indicate that the purpose of assessment is to enhance the quality of teaching and learning. They further posit that educational assessment should not simply measure what students have achieved but that assessment should help students to learn and achieve more. Bloxham and Boyd further posit that assessment can reveal a student's strength, weaknesses and ways of learning; and enable students to be given feedback that will help them improve (Bloxham & Boyd, 2007:13). Adding to the views of Bloxham and Boyd (2007:13), Brown et al. (2005), Rowntree (2008:204), Sadler, (2010:535) posit that assessment is a major influence on what and how students learn and on how much time they spend studying.

2.4.2 Types of assessment in ODeL

Despite much work having been done over many years, assessment has not been fully transformed to really attend to concerns about learning. Changed thinking about assessment is needed so that assessment is not mainly about formal structured assessment activities, but is about all those things that enable lecturers and students to make judgements about learning (Boud & Falchikov, 2006). There are three main types of assessments that are found in both traditional and distance education namely: Assessment for learning, assessment of learning and assessment as learning. Assessment for learning is any assessment for which the first priority in its design and practice is to serve the purpose of promoting students' learning (thus equal to formative assessment). It is the type of assessment that supports the learning process through diagnostic feedback, and again, it is the process of seeking and interpreting evidence for use by students and lecturers to decide where the learners are in their learning, where they need to go and how best to get there (Black & William, 2009). Assessment of learning refers to strategies designed to confirm what students know, demonstrate whether or not they have met curriculum outcomes or goals of their individualised programs, or to certify proficiency and make decisions about students' future programs or placements. Assessment of learning is summative in nature and is used to confirm what students know and can do, to demonstrate whether they have achieved the outcomes, and, occasionally to show how they are placed in relation to others. Assessment of learning methods include not only tests and examinations, but also a

rich variety of products and demonstrations of learning-portfolios, exhibitions, performance, presentations, simulations, multi-media projects, and other written, oral, and visual methods (Boud & Falchikov, 2006). The last type, assessment as learning, is meant to guide and provide opportunities for each student to monitor and critically reflect on his or her learning. In assessment of learning, students are actively engaged in the assessment process, that is, they monitor their own learning (Conole, 2013). The purpose of assessment as learning is to provide descriptive feedback to peers and self-assessment. Boud and Falchikov (2006) have argued that whatever else it does, assessment should fundamentally be about building students' capacity to make informed judgements about their work. According to them, assessment becomes formative when the information is used to adapt teaching and learning to meet student needs (Gibbs & Simpson, 2004:3). Another study by Duers and Brown (2009:654) investigated student nurses' experiences of formative assessment. The study aimed at adding to the knowledge base on formative assessment. The result of the study revealed that formative assessment feedback provides learners with improved self-esteem.

Koh (2010:205) expands on Duers and Brown's ideas when he investigated academic staff's perspectives on formative assessment and feedback at the Thames Valley University in the United Kingdom. The study found that the purpose of formative assessment was to give feedback. Some of the participants indicated that formative assessment can be used by lecturers to provide information for making judgements on students' strengths and weaknesses and the support the students might need. According to Dalgarno, Chan, Adams, Roy and Miller (2007:168), formative assessment represents the process of gathering, analysing, interpreting and then using evidence to improve student learning and help students' achieve their potential whereas summative assessment is concerned with measuring student attainment and it helps to sum up or summarise what the student can or cannot do at the end of a period of teaching and learning. Boud (2007) conducted a study regarding the enhancement of learning through self-assessment. Self-assessment is a process of formative assessment during which students reflect on and evaluate the quality of their work and their learning, judge the degree to which they reflect explicitly stated goals or criteria, identify strengths and weaknesses in their work, and revise accordingly (McMillan, Myran & Workman, 2002; Boud, 2007:160). Self-assessment is commonly portrayed as a technique to enhance learning since it is transformative, elusive and confrontational to conventional teaching

than it is normally expedient to recognise. Self-assessment involves students in making decisions about the work they have done (Falchikov, 2005). Another important type of assessment that is common in higher education is peer assessment. There are many variants of peer assessment, but essentially it involves students providing feedback to other students on the quality of their work. In some instances, the practice of peer feedback will include the assigning of a grade, but this is widely recognised to be a process that is fraught with difficulties. Peer assessment requires students to provide either feedback or grades (or both) to their peers on a product or a performance, based on the criteria of excellence for that product or event which students may have been involved in (Falchikov, 2005:132). Students receiving feedback from their peers can receive a wider range of ideas about their work to promote development and improvement (Falchikov, 2005:132). Again, peer feedback can encourage collaborative learning through interchange about what constitutes good work. Students engaged in commentary on the work of others can heighten their own capacity for judgment and making intellectual choices. Students can help each other to make sense of the gaps in their learning and understanding and to get a more sophisticated grasp of the learning process.

Further, Gibbs and Simpson (2004) found that when self-assessment is conducted in a context of openness and critical reflection, it allows students to see the options which lie before them in a radically different way. For example, in Signature Courses students are expected to engage themselves in peer and self-assessment. Tan (2008:15), conducted a study on qualitatively different ways of experiencing student self-assessment in Singapore. The investigation focused on the different ways academics describe their understanding and practice of self-assessment. A phenomenographic approach was used to research and identify a set of progressive variations of academics' ways of experiencing student self-assessment. The study findings describe five qualitatively different conceptions that depict how lecturers understand and use student self-assessment. Falchikov (2005:70), Guyskey (2003:6), Nicol (2007, 2009:335) and Thorpe (2010:265) have conducted studies on various topics related to distance education. For example they researched students' experiences of assessment in open and distance learning, student engagement in assessment practices, the relationship between formative and summative assessment in a distance education context, student cheating in an online environment, student retention, and the quality of student assessment in ODL using mixed methods research.

2.4.3 Provision of assessment feedback

With its potential to support the learning process and promote student achievement, assessment feedback has been acknowledged as a positive and powerful educational tool. Feedback is one of the most important aspects of the learning process and serves the critical function of enabling students to make timely and informed judgements about their performance so that subsequent assessment can be undertaken with improved likelihood of success and enhancement (Lizzio & Wilson, 2008). These researchers found that student feedback promotes and motivates students to put more effort in their learning endeavour. Traditionally, feeding back assessment information has been a one-way process, from lecturer to student. However, many forms and directions of feedback exist-from student to lecturer, from student to student (often related to peer assessment), and from student to him or herself (self-assessment). Even though it is time consuming, this researcher argues that significant energy must be devoted to helping students understand not only where they have gone wrong, but also where and what they need to improve.

They also need feedback to help them understand what is good about their work and how they build on it and develop further. Huxham (2007) undertook a study to compare student responses and performance after receiving two different types of feedback, that provided by model answers and that provided by personal comments. The study found that feedback to students is essential for effective learning, but most participants in the study preferred personal feedback to model answers. The study further revealed that students prefer to receive feedback as handwritten personal comments because they show exactly where they went wrong and this gives them chance to go over their mistakes and hopefully get them right the next time. Omoroguiwa (2012:3) conducted a quantitative study on the benefits and challenges of formative student feedback in ODL. In his study, Omoroguiwa (2012) posits that through assessment it could be determined whether students have learned what they have been taught so that appropriate adjustments to teaching could be made. Furthermore, Omoroguiwa (2012) also shows that student feedback is regarded as an integral part of the learning process.

In addition, Lockwood and Gooley (2001:179) maintain that assessment should be integral to the acts of teaching and learning, can be used to support student progression, and its findings can be applied to establish educational goals and targets.

Distance students are dependent on good feedback from tutors, yet assessment processes and feedback are often deemed unsatisfactory by students. It is widely acknowledged within the academic literature that assessment is a key driver in terms of students' approach to their courses (Gibbs, 2006; Ramsden, 2006:176). In their findings Hughes, Okumoto and Wood (2011) revealed, firstly, that the possible benefits of using ipsative assessment include closing the feedback loop so that students can be informed on how far they have responded to previous feedback and progressed. Secondly, ipsative feedback is longitudinal and gives students and their assessors a way of monitoring progress over time involving several assessments. Again, not all students will be high achievers and ipsative feedback could be motivational for students who do not receive immediate rewards for effort through high grades. Further, the study found that ipsative assessment could help provide the missing dialogue for distance learners. However, one of the main arguments against using ipsative feedback is that it requires much more organisation than conventional feedback because the assessor must have access to the previous feedback and assignments to make comparisons (Hughes et al. 2011).

Alongside that overarching principle that assessment plays an important role in student learning, there is evidence which suggests that what helps to improve student learning more than any other single factor is feedback on their learning (Hattie & Timperly, 2007). Where feedback on learning takes the form of comments on assignments the nature of those comments and the extent to which they support and promote student learning is enhanced. Pertinent to this thesis is the observation that there are ways of making the provision of feedback easier using technology (Hughes et al. 2011:3). However, it is important to indicate that there is need to use the technology that is most accessible and readily available to the students and lecturers, for instance lecturers can use technologies like podcasts and voice memo apps that are found on smart phones or tablets. This idea of offering feedback and guidance through a podcast demonstrates the thinking involved in the web 2.0 world. The feedback provided is unique, personalised, and time sensitive. In this case the lecturers and student work together to create new knowledge. Further, automated feedback can also be provided by using a computer so that a student can be provided with immediate feedback. Technology, although still under-utilised in assessment and feedback practices, offers considerable potential for the achievement of these aims. However, benefits are accompanied in some cases by challenges. Wider understanding is still needed of how applications of

technology can enhance assessment practices, and when there is a business case to support such innovations. For example, if designed appropriately, computer-assisted assessment offers a number of benefits that can enhance learning and reduce the workload of administrators and practitioners: online assessments can be accessed at a greater range of locations than is possible with paper examinations, enabling students to measure their understanding at times of their own choosing; immediate expert feedback delivered online in response to answers selected by students can rapidly correct misconceptions; and the time saved in marking can be used in more productive ways, for example in supporting students experiencing difficulties (JISC, 2010:8). Formative feedback is crucial. It needs to be detailed, comprehensive, and meaningful to the individual, fair, challenging and supportive, which is a tough task for busy academics, especially in distance education environment (Brown, 2004). As Rowntree (2008) concludes:

... If feedback is geared towards improving learning rather than measuring it, if it puts the emphasis on each student's progress and avoids comparison among students, if it is part of ongoing dialogue rather than a judgement delivered by the educator after the event and if there is the expectation that feedback is acted upon, it is likely that feedback will make a positive contribution to learning rather than a negative one.

According to Rowntree (2008), if assessment is to be integral to learning, feedback must be at the heart of the process. This principle within educational assessment is that feedback enables current and previous (assessment) information to be used to help shape future learning, performance and outcomes. This is the principal area in which lecturers can influence the extent to which assessment practices are developmental, rather than solely judgemental. A whole range of available resources could be used to make this possible, including computer-aided assessment and strategies for giving feedback efficiently such as assignment return sheets and assignment reports.

2.4.4 Lecturers' and students' experiences of assessment practices

McLellan (2001:317) qualitatively investigated the perceptions of lecturers about assessment authentic practice in a Scottish university. In-depth interviews were conducted in order to find their conceptions of desirable assessment. The findings

revealed that in many cases lecturers use assessment to rank students' achievement and to provide feedback. In this respect McLellan's (2001) findings concur with those of Samuelowicz and Bain (2002:198) who undertook a qualitative study using interviews to investigate the practices utilised by lecturers to assess students at undergraduate levels. The interviews focused on their beliefs about the nature and function of their assessment and the findings revealed that lecturers viewed assessment in different ways. For instance, some of the lecturers perceived that assessment enabled student learning while others placed emphasis on the importance of giving feedback on students' work where further help was needed. Others perceived that the main purpose of assessment was to grade students or to assess students' abilities to reproduce information (Samuelowicz & Bain, 2002). These two studies regarded ranking students' achievement and the provision of grades as the dominant perceptions of lecturers regarding the purposes of student assessment.

McMillan et al. (2002:203) conducted a study to describe the nature of assessment and grading practices. They found that lecturers were mostly interested in assessing students' mastery or achievement and that performance assessment was used frequently. In addition, Morgan and Watson (2002:78) found that most lecturers view assessment as an added requirement to teaching. Further, they report that lecturers use lecturer-constructed tests to assess students' achievement. This stance is further expanded by Rowntree (2008:204) who indicates that assessment is essentially an attempt to get to know the student and find out the nature and quality of his or her learning, for example, his or her strengths and weaknesses, interests and aversions, motivation and approaches to learning.

Crossman (2004:582) conducted a qualitative study on the factors that influence the assessment perceptions of training lecturers in an Australian university. The purpose of his study was to investigate how student teachers in training perceive assessment. The literature reviewed not only provides a rationale for eliciting student teachers' perceptions but also contributes to discussion about how these perceptions of assessment are connected to learning approaches, previous assessment experiences, notions of relevance and student teacher relationships. Iyamu and Aduwa-Oglabaen (2005:619) conducted a study in Nigeria's Benin City University on lecturers' perceptions of student assessment in Nigerian universities. The study was necessitated by the need to improve undergraduate instruction. Lectures from five public universities

were interviewed to find out how they perceive the importance of student assessment both for formative and summative purposes. The study found that lecturers in general are more inclined to support formative than summative assessment. The study found that Nigerian university lecturers are more accepting of student assessment for formative purposes than for summative purposes. In his study Gibbs (2006) found that academics in the UK spend more time on marking student work instead of teaching the students and as a consequence they have very limited time to do research. The study revealed that because of high teacher-student ratio lecturers are faced with a heavy workload. Another insight was provided by Mussawy (2009) who undertook a study on lecturers' perceptions of assessment using a mixed methods approach. In Mussawy's study (2009) participants reported that the current assessment practices limit their learning. Mussawy (2009) suggested that alternative assessment approaches that include performance-based assessment, portfolios, self-assessment and peer-assessment, cooperative group assessment, reflective journal writing, and scaffolded essays were needed for ODeL institutions.

A study by Asghar (2012:206) that is similar to that of Mclellan (2001:317) and Samuelowicz and Bain (2002:198), employed a qualitative approach to investigate lecturers' perceptions pertaining to formative assessment at a British university. In his study, Asghar (2012:205) used a hermeneutic phenomenological approach to gather qualitative data from nine academics teaching in different disciplines who volunteered to participate in semi-structured interviews. Asghar's (2012) participants viewed the purpose of formative assessment as developmental and suggested that the provision of feedback should further student learning. Asghar (2012) found that lecturers acknowledge the value of formative assessment, but suggested that students should be engaged in dialogic feedback with a focus on how to move forward.

Fletcher, Meyer, Anderson, Johnston and Rees (2011) conducted a study on faculty and students conceptions of assessment in higher education. To investigate their views, surveys were conducted to faculty and undergraduate students across four tertiary institutions. Results of the study indicated that the lecturers were likely to view assessment as a trustworthy process aiding teaching and learning, whereas students viewed assessment as focused primarily on accountability and perceived assessment as irrelevant or ignored in the teaching and learning process. Faculty reported viewing assessment as a method for improvement of student learning while also informing their

teaching practices (Fletcher et al, 2012:12). Furthermore, Sahinkarakas (2012:1787) conducted a study aimed at exploring how language teachers conceive language assessment and whether these conceptions differ according to teaching experience. The study revealed that assessment is embedded within instruction. In other words, they perceive assessment as a way to provide evidence of teaching and learning. This study was found to have some common features with some other studies conducted on lecturers' assessment perceptions and experiences. The study revealed that timing of formative assessment and feedback was considered important if students were to benefit from it. The participants concluded that formative assessment involved formal formative assessment and informal formative assessment.

2.4.5 Student engagement in assessment practices

Stiggins (2008) conducted a qualitative study on student engagement in assessment practices in open and distance learning. The results of his study revealed that student engagement in assessment practices is crucial since their involvement develops a sense of assessment ownership. In this view he is corroborated by Bloxham and Boyd (2007:11) who conducted a study on developing effective assessment in higher education. In their study they found that assessment shapes the experience of students and influences their behaviour more than the teaching they receive. Adding on Bloxham and Boyd's (2007) assertion, Gibbs and Simpson (2004:22) posit that the influence of assessment means that "there is more leverage to improve teaching through changing assessment than there is in changing anything else."

Flint and Johnson (2007) conducted a study on how to recognise students concerns using assessment. In their study, they wanted to find out if students in higher education are fairly treated especially when it comes to assessment. The findings of the study revealed that previously, students were regarded as passive recipients of information from the lecturer, however, that has currently changed because they are engaged in their own learning, and they are now co-creators of knowledge. Again, the study found that student voice is important because they are also involved in knowledge creation. Further, assessment can engage students in learning activities that are appropriate to the subject (Rowntree, 2008). Based on the foregoing, it seems as if there is now a realisation that the potential benefits of assessment are much wider and impinge on all stages of the learning process than previously thought. This is achieved by ensuring

that learning materials contain plenty of opportunities for students to receive detailed, positive and timely feedback with advice on how to improve (Bloxham & Boyd, 2007:13). This stance is further expanded by Rowntree (2008:204), who indicates that assessment is essentially an attempt to get to know the student and find out the nature and quality of his or her learning, for example, his or her strengths and weaknesses, interests and aversions, motivation and approaches to learning. After an examination of the research conducted by different assessment practitioners, the researcher would argue that if assessment is properly designed, it can ensure that teaching and learning is productive. Having explored selected literature on assessment practices in general, the researcher explores the question of the extent to which technology influences and enhances student assessment practices and feedback in open distance and e-learning environments.

2.5 TECHNOLOGY ENHANCED ASSESSMENT

The purpose of this section is to provide a snapshot of ways in which technology can be used to enhance student assessment and feedback in open distance and e-learning environments. Before getting involved in the details of the ways in which technology can be used to enhance assessment practices, it would be helpful to provide a working definition of the term technology-enhanced assessment. For the purposes of this study, technology-enhanced assessment is defined as a method which is relatively computer dependent, and which includes, amongst others, computer software packages, computer-based learning, networks, videos, simulation, computer-assisted learning and multi-media (McConnel, 2002:73; Davidson & Goldberg, 2009). Technology-enhanced assessment offers the potential to elicit and evaluate complex skills and practices (Brown, 2004; Gipps, 2005). Although the present state of student assessment through technology does not include all these applications, the most popular technology is computer software.

According to JISC (2010:8), technology-enhanced or technology-enabled assessments are the terms used to describe practices made possible by technology. Further, technology-enhanced assessment could also be defined as the use of technology to extend or add value to assessment and feedback. Almost twenty years ago, long before having the technologies we are now accustomed to such as ubiquitous mobile phones, Facebook, blogs, Twitter, wikis, etc. Brown, Bull and Pendlebury (1997) cited in

Omoroguiwa (2012:2) claimed that they were witnessing a paradigm shift in assessment practices from tutor-led assessment to student-led assessment, from implicit criteria to explicit criteria, from competition to collaboration, from product assessment to process assessment, from objectives to outcomes and from content to competences. This paradigm shift has been enhanced by recent educational technological development since it can support nearly every aspect of assessment in one way or another, from the administration of individual tests and assignments to the management of assessment across a faculty or institution; from automatically marked on-screen tests to tools to support human marking and feedback, all these backed up by forms of data collection and management (learning analytics) that impact on the knowledge about students (Davies, 2003; Omoroguiwa, 2012:12; Quellmazz & Pellegrino, 2009).

The integration of technologies into assessment processes can provide opportunities to enhance students' experience of learning via assessment as well as diversify the range of options available for them to learn and demonstrate their learning. Equally, the use of technologies can enable staff to weigh different learning and teaching approaches, introduce innovative assessment methods, and improve their efficiency in managing assessment (JISC, 2007, 2010). As indicated at the beginning of this chapter, this study is undertaken in a locale where some of these technologies are not readily available. Nevertheless, the researcher suggests that it would be near-sighted for lecturers and students not to consider how technology can influence teaching and assessment since digital technologies can, arguably, facilitate and stimulate independent learning, that is, students are able to access learning materials that can allow them to work on their own or collaborate technologically with their peers through applications like Facebook and WhatsApp.

Further, applying technology to educational assessment also promises the opportunity for individualised formative assessment with fewer demands on teachers (Napagoda, 2010:63). This means that through the use of technology, students are able to take assessment anywhere and at any time without putting pressure on educators. Clearly, though, for technology-enhanced assessment to be effective, pedagogically sound developments need to be supported by robust and appropriate technology, within a supportive institutional or departmental context (JISC, 2010). To ensure the quality of online instruction, assessment should be at the centre of the curriculum design because, as the researcher argues throughout this thesis, assessment makes a

significant impact on student learning. In the previous sections, the researcher indicated that an effective assessment process should enable students to self-monitor their progress, give regular feedback to students, and support peer learning and assessment. This remains valid for technology-assisted assessment which, self-evidently, should also be valid, reliable, fair and flexible. Next the researcher presents the findings of studies on technology-enhanced assessment as follows: Digitally enhanced assessment, benefits of technology-enhanced assessment, and mobile technologies in student assessment.

2.5.1 Digitally enhanced assessment

Researchers like Tuomi, (2006:47), Sharpe, Beetham and De Freitas (2010) and Juwah (2012:39) conducted ICT-based studies on how technology can be utilised to enhance student assessment and provide timely and targeted feedback for learners who are working independently. The results of their studies reveal that students receive more feedback when using technology than they would from educators in more traditional distance or face to face environments. Technology can be used to stimulate as well as support dialogue around feedback (Carey, 2013). But significantly, studies revealed that even if there is use of the best technology for teaching and learning, lecturers are still needed to direct what that technology should do, for example, technology at universities may level the plain field of access, but a level field does nothing to improve the skills of the players. It is in situations like these where educators are needed to provide students with the much needed feedback. Again, their studies illustrate that formative feedback needs to be characterised by promptness and by making provision for the students to repeat or revise the unsatisfactory submitted assessment task.

According to Wolsey (2008:311), if feedback is not provided in a timely way or is not related to knowledge that is familiar to the students, they tend to ignore that feedback. Consistent with the results of Wolsey's (2008) findings is a study by Gayton and McEwen (2007:117) which found that there are different types of e-assessment techniques which instructors can use alone or as a combination in their courses. These techniques include amongst others the following: online discussion, collaborative assignments, projects, portfolios, self-assessments, peer-evaluation or review, computer-marked assignments, simulations, role-play, email, timed tests and quizzes.

2.5.2 Benefits of using technology for assessment purposes

Researchers such as Farmer (2005:12), Liang and Creasy (2004:242) have reported benefits for educators and administrators when testing in the online environment. Specifically, researchers like Farmer (2005), Garrison, Anderson and Archer (2003:87) have found the following benefits: (a) less administrative time required to record student demographic data, (b) web-based reporting of student test results and reduced turn-around time to receive test scores resulting in potential increases in instructional time, (c) assessment fosters a student-centred learning environment, and (d) the administrative benefits gained from online formative assessments is that they include improved test monitoring capabilities. Through the use of technology, tutors, students and administrative staff are handling fewer technical queries. Clear, timely, on-going and adequately detailed feedback is important in an online environment. In assigning certain functions to computers, the lecturer emerges in his/her role as an indispensable human being. Even though technology plays an important role in saving time and bringing efficiency in teaching and learning, it should be noted that technology will not (and should not) replace teachers because it is the teacher who controls the equipment (Bayne & Ross, 2014; Casey, 2012; Czerniewicz & Brown, 2009; Tapscott, 1997).

In addition to the foregoing listed advantages, Torrisi-Steele and Drew (2013:371) found that social networks enable students to work collaboratively on projects, conduct joint research, share and structure information, develop group reports using discussion forum, join online chat groups as well as sign up for software programs that allow task sharing. Moreover, the use of technology-enhanced methods in distance education has a major impact on the quality of interaction between lecturers and students, and on the development of online assessment methods (e-assessment), both formative and summative (Omoroguiwa, 2012). While traditional paper-and-pencil student assessment can be done in distance-learning programmes, it is appealing to think that technology especially in its web 2.0 incarnation can assist to both teach and assess learning in ways never imagined before (Czerniewicz & Brown, 2005, 2009; Fluck, Pullen & Harper, 2009:509; Karadeniz, 2009:984). The tools that might be used to support assessment in this area could include web 2.0 technologies such as wikis, social networking activities, blogs, Facebook, Twitter, podcasting, and e-portfolios (Shute, Dennen, Kim, Donmez & Wang, 2010: 4). Further, it is also able to provide immediate real time feedback and support for collaborative learning (Shute et al. 2010). As with any assessment process,

the integration of technologies into the assessment design must be driven primarily by the intention to support a high quality learning experience for students.

Next, the researcher provides a descriptive summary on how mobile technologies play an important role in student assessment, particularly in ODeL contexts. The justification for using mobile technologies is based on the understanding that educational technologies have the potential to expand educational opportunities for disadvantaged and the marginalised students. The idea is to use these devices that are already available and accessible to our students in order to develop ways in which we could support distance learners. Mobile technology makes information readily accessible and in this light can be used effectively for teaching and learning purposes. The use of mobile technologies for education has much more potential in South Africa because it has the ability to connect less privileged people to information.

The lack of infrastructure for electricity, computers, and telephones in some parts of South Africa has led to the rapid growth of wireless infrastructure. Mobile technologies allow for small groups whose members are at a physical distance to each other to learn collaboratively together and from each other; but they also enable larger, more anonymous yet equally productive interactions (Brown, 2006; Kukulska-Hulme & Traxler, 2009). Mobile technologies can facilitate cohort socialisation and collaboration between and among students or can serve as a support mechanism to encourage students. Socialisation via mobile technologies can thwart feelings of isolation, and promote a sense of belonging, psycho-social aspects that were typically missing in older generations of distance education (Thorpe, 2002). Such instances of collaborative learning lead in turn to the use of mobile technology as a viable agent for promoting student interaction and dialogue as suggested by Keegan (2003) and Rambe and Bere (2013).

There is a wide range of roles for mobile technologies supporting the students from relatively simple use of Short Message Services (SMS) texting to the more advanced use of smart phones for content delivery, project work, searching for information and assessment (Brown, 2006; Brown & Czerniewicz, 2010). Besides SMS, distance students can use mobile phones to listen to their course lectures, store and transfer data through the use of communication and social technologies, like Skype, WhatsApp, Facetime, blogs, Twitter, Facebook, amongst others. In the South African context, many

people are resorting to the use of social media like Facebook and WhatsApp for communication purposes because it is cheaper than using SMS (Brown & Czerniewicz, 2010) and such forms of mobile communication become part of the mechanisms by which the students monitors, identifies and is able to bridge the gap between their current learning achievements and the goals set by the tutor. These technologies appear to offer exciting possibilities for overcoming geographical distance and cost barriers to learning. For instance, SMS is highly cost-effective and a very reliable method of communication. Furthermore, it is less expensive to send an SMS than to mail a reminder through regular postal mail, or even follow-up via a telephone call. Mobile technologies have made landlines virtually redundant and the functionality of today's smart phones means that they are used for far more things than simply making a phone call. This theme would be discussed in a later chapter (See Chapter 4 on the findings of this study).

Furthermore, using online platforms like YouTube, Facebook and blogs, students are able to view each other's work, engage in group discussions, enhance their learning more effectively, and increase group members' interactions (Angelino, William & Natvig, 2007). This confirms the findings of Gikandi et al. (2011) that identified learners' commitment as an important ingredient in achieving effective formative assessment in online learning. Through these formative processes within synchronous and asynchronous discussion forums, students are also able to share their on-going work or ideas with peers and receive critical feedback that supports them to improve their work and close their performance gaps (Garrison & Vaughan, 2008).

Taking this conversation further, the researcher argues that currently Facebook is the most popular online site and is therefore very suitable to incorporate into student learning and assessment. Most people are currently using either, Facebook, YouTube, Twitter or blogs to communicate with each other or to obtain and share information (Creelman, Ehlers & Ossiannilsson, 2014; Haggard, 2013). As much as students are able to invite their friends to join online groups on Facebook or post messages to friends, it is, therefore, also possible for them to invite each other to a discussion forum regarding their assignments, using the same procedures as occur in MOOCs. Digital technologies like Facebook can enable students to provide peer-assessment feedback to their study mates. It is, therefore, important to explore these technological affordances or platforms bearing in mind that not all students use them for learning

purposes (Graham, 2006; Purvis, Aspden, Bannister & Helm, 2011). Despite this, social media need to be explored for their potential to enhance collaborative learning practices. Up to this point, the researcher has been discussing studies that have been conducted by various assessment practitioners on student assessment with special focus on technology-enhanced assessment. At this juncture, there is a need to shift the viewpoint and explore the ways in which technology enhances and influences student assessment and feedback in ODeL contexts by making use of Unisa's Signature Course pedagogy as a possible model for future practice. Table 2.1 shows the various Signature Courses found at Unisa six Colleges.

Table 2.1: Unisa Signature Courses used in the study

College	Module name	About the module
College of Agriculture and Environmental Sciences	Environmental awareness and responsibility (GGH-3708)	Students will learn more about a variety of environmental principles that will assist them in becoming environmentally aware and responsible. Through global case studies they will learn how human activities impact on the environment. They will then be guided in establishing an environmental issue/problem from their vocational field and demonstrate ways in which they can reduce the negative impact of human activities on the environment
College of Economic and Management Sciences	Sustainability and greed (SUS-1501)	Through a number of case studies, students will be given the opportunity to apply selected ethical traditions to contemporary social themes, including sustainability and greed. Through participation in online tasks and deliberations, students develop critical thinking skills and a sense of ethical citizenship.
College of Education	Being a professional teacher (BPT-1501)	Students will learn what it means to be a professional teacher and how to make a difference in learners' lives. They will learn how to create environments conducive for teaching and learning and understand the challenges associated with the curriculum and the learning process.
College of Human Sciences	Language through an African lens (AFL-1501)	Students will learn how to interact successfully in a multicultural society, including how to demonstrate sensitivity to their own language usage and that of others. The module also gives students the opportunity to learn to interact across cultures with knowledge and respect.
College of Law	Social dimensions of justice (SJD-1501)	Students will be introduced to the South African context in which they will have to perform as a future legal and criminal justice functionary. Students will develop a basic understanding of what shapes our legal system, the nature of the South African law and criminal justice system, and how it is applied and administered.
College of Science, Engineering and Technology	Ethical Information and Communication Technologies for development solutions. (EUP-1501)	Students who successfully complete this module will be able to present critical arguments around ICTs for development. They will appreciate ethical dimensions within an information society in relation to copyright, intellectual property rights, privacy and general conduct. In addition, successful students will be able to demonstrate their ability to maintain efficient, organised and secure electronic working environments by managing digital files, systems and application software. They will also develop capabilities to engage with textual and numerical data and to present such information in various formats.

To sum-up the discussion, the researcher provides an analysis based on the academic discourses which were prompted by the implementation of the Signature Courses in the context of Unisa.

2.6 THE SIGNATURE COURSES PEDAGOGY

The Signature Courses were introduced at Unisa in the 2013 academic year. These Signature Courses are introductory fully online modules designed to engage students in an interactive and enriching learning experience (Baijnath & Ryan, 2014:194). The signature courses are based on a theory of learning called heutagogy, which, according to Baijnath and Ryan (2014:194), is defined as a theory in which adults take responsibility for their own learning, and in so doing develop skills such as communication and teamwork, creativity and innovation, and positive values. Heutagogy is basically a model allowing for a more student-centred learning, in which students are co-creators of knowledge instead of being passive recipients of information (Baijnath & Ryan, 2014:194). Heutagogy has been proposed as a theory appropriate to emerging technologies in distance education and for guiding distance education practice and the ways in which distance educators develop and deliver instruction using newer technologies such as social media (Hase & Kenyon, 2013).

The renewed interest in heutagogy is partially due to the ubiquitousness of web 2.0, and the affordances provided by the technology (Blashke et al. 2014; Canning & Callan, 2010). With its learner-centered design, web 2.0 offers an environment that supports a heutagogical approach, most importantly by supporting development of student-generated content and student-self-directedness in information discovery and in defining the learning path. According to Blashke et al. (2014), in heutagogic learning there is partnership in the learning process between students and the lecturers. Further, Mischke (2010) posits that Signature Courses are student-centered and assessment-driven because they use alternative ways of assessment namely, graded discussion forums, wikis, blogs, group tasks, PowerPoint presentations, portfolios, video clips taken by students, etc. In the Signature Courses, students are expected to complete a significant number of assignments per semester (on average students do 8-13 assignments). In other words, students are paced through the work by means of assignments (Mischke, 2010). Unisa envisaged that the implementation of these Signature Courses might have a negative impact on disadvantaged students who have

little or no access to the Internet. The Signature Course team, after careful and lengthy research, resolved to make the course materials available on what are called Unisa digi-bands (Mischke, 2010). The acquisition of this technology is crucially important because it enables Unisa to deal with the challenge of limited Internet access for large numbers of rural and semi-rural students as well as urban students not served by broadband access. The central feature of the digi-bands is to allow the student to work offline (Baijnath & Ryan, 2014:05; Mischke & Le Roux, 2012). Such digi-bands consist of a rubber wrist band containing a memory stick uploaded with specifically designed software. These digi-bands hold all the needed course materials that are used online and include the full spectrum of assignments, tests, quizzes, and discussion forums.

Once a digi-band is plugged into a computer, students can undertake the necessary work in the learning program, and are only required to go online periodically at an Internet destination of their choice (e.g. Unisa regional computer labs) in order to synchronise their work with the institution's LMS (MyUnisa) and to interact with peers and teachers (Baijnath, 2014a/b). The use of dig-bands makes Unisa distinct from other open universities around the world and it is tied to Unisa's unique local circumstances (Mischke, 2010). Although the technology is not without its problems, it presents an opportunity for students to take a big leap into the digital future by undertaking a fully online course and being compelled to familiarise themselves with ICTs which support and enhance their learning. Intrinsic to the Signature Courses and in line with Unisa's mandate to provide education to the masses, it is anticipated that making better use of the affordances offered by digital technologies makes it possible to provide access to most of its students including those from disadvantaged and marginalised communities.

As technology has become extremely important in all spheres, Unisa would like to ensure by means of its Signature Courses that every Unisa graduate is able to function effectively in the digital age (Baijnath, 2014a/b). In the Signature Courses lecturers and teaching assistants interact with students via the MyUnisa portal. MyUnisa is Unisa's online portal used as a virtual classroom where lecturers and students interact (Baijnath, 2014a). Through myUnisa, lecturers act as online facilitators, intervening when there is need. Lecturers are able to introduce courses to students, and in turn, students are able to access tutorial letters, study guides, and information on how to access textbooks or prescribed books. Further, MyUnisa is intended to align the university to the ODeL context where transactional distance is minimised. There are

tools that are used in MyUnisa announcements and discussion forums, which are popular with students because they use them to exchange views regarding their studies (Mischke & Le Roux, 2012). According to Baijnath and Ryan (2014:199), “the Signature Courses allow students not only to interact with their lecturers and teaching assistants, but to also interact with one another”. Further, they posit that the heutagogical model of teaching used in Signature courses is both flexible and empowering.

2.6.1 Student assessment in Signature Course pedagogy

Before discussing Unisa’s Signature Course assessment pedagogy in detail, it is important to describe the ways in which the Signature Courses differ from the usual Unisa modules and to consider in what ways the Signature Course assessment design differs from the design of more conventional Unisa assessment practices. Do they offer the answers to assessment challenges faced in open distance and e-learning? To answer these questions, it should be made clear that what lies at the heart of the Signature Courses is a very simple design component: students are divided into online groups at point of registration, their size is deliberately limited, and each group is assigned a teaching assistant (Baijnath & Ryan, 2014:198). In addition, and of equal importance, the relative percentage of formative and summative weighting is different from conventional Unisa modules and this has particular implications for effective teaching and learning. Under the old print model, the emphasis was on summative assessment with, in varying cases, one, two and sometimes three formative assignments during the year. The Signature Courses operate on a switched-over model where formative assessment constitutes 80% of the final mark whilst summative assessment, which is non-venue based in most cases, constitutes 20% (Baijnath & Ryan, 2014:198).

In the Signature Course pedagogy, formative assessment occurs regularly and frequently, weekly or bi-weekly, and is designed to be peer-driven so as not to exert pressure on markers or on the system (Baijnath, 2014 a/b; Mischke & Le Roux, 2012). Further, in the Signature Courses, final examinations are aimed at being non-venue based. Non-venue based examinations are those examinations that are written by candidates anywhere and anytime at a venue of their own choice provided that learners have access to computers and Internet connectivity. In the Unisa context, non-venue examinations have the potential to save a lot of resources such as money for hiring

examination venues, printing examination question papers, and paying the invigilators as is the case in the traditional invigilated examinations (Bajjnath & Ryan, 2014).

However, it should be stated that the issue of non-venue based examinations come with some pertinent problems like lack of proper invigilation and also verifying the identity of person who is writing the examination. Even though there are some universities that are using software to identify the authenticity of the person seating for the non-venue examination, this technology is not yet available. In formative assessment, the Signature Courses have made the process of feedback provision easier with the result that the turn-around time for feedback is drastically reduced. In the Signature Course pedagogy, lecturers are not limited to standardised annual assessments, instead they have the chance to provide feedback at virtually every step of the learning process and use the regular evaluation to gauge progress toward educational objectives for individual learners. This alternative assessment not only opens up additional opportunities for summative assessment but also for formative assessment (Unisa Alternative Assessment, 2015).

Though the Signature Courses do not offer all the answers to the challenges of ODeL, their implementation at Unisa has made the process of lecturer-student interaction and collaboration easier, firstly through the immediacy of online communication, and secondly through relatively small groupings each with their dedicated teaching assistant (Bajjnath & Ryan, 2014). A further innovation occurred during the process of designing and developing the Signature Courses, when the design team resolved that in order to reap the optimum benefit of the heutagogical model that had been decided upon, it was necessary to appoint knowledgeable co-workers in the form of TAs to support academics with the facilitation of learning and the grading of students (Bajjnath, 2014 a/b). A TA is an individual who assists the lecturers who design the online courses with tasks such as guidance with online assignments, grading of formative and summative online assignments, giving online feedback on assignments and responding online to student queries. The heutagogical model relies much on the role of the teaching assistant and allows regular interactions between students, faculty and teaching assistants who render student support (Bajjnath, 2014b). The rationale behind the appointment of teaching assistants is that academic staff should design courses, assessments and generally direct the learning process. According to the Unisa policy regarding TAs, the role of the TA is defined as follows: to facilitate subject-related

students online discussion, mark (grade) student online assignments, respond online to student queries, provide student support online, be familiarised with the pedagogical approach followed to teach the course, give feedback on student online assignments, interact frequently online with the lead lecturer, participate in online teaching assistant training sessions, facilitate subject-related student online discussion, monitor student online learning for up to 300 students, attend and participate in contact teaching assistant training sessions, be familiar with the myUnisa learning platform (Baijnath, 2014 a/b).

To be considered for the job as TA, applicants apply online and should meet the following minimum requirements: On-going access to a computer, daily access to the Internet at own cost, advanced computer skills, sensitivity to deadlines, passion and commitment to student-centred learning, advanced communication skills and proficiency in English, be available online for a minimum of 20 hours per week. The TA does not develop the course, nor does he/she develop the assignments or the marking rubrics. In sum, the TAs' responsibility is to assist the academic staff with facilitation of online learning. All TAs work under the guidance of a course leader, the person who designed the course and devised the assessment strategies (Baijnath, 2014 a/b). In the Unisa context for effective teaching and learning to take place students are divided into small groups of fifty (50) who participate in focused, formative, weekly assessment tasks. On registration, students are divided into groups of 50 and assigned to a teaching assistant who in turn takes responsibility for four groups of 50 students (a total of 200 students per TA). The advantage of this arrangement is that students are placed in a cohort wherein they can bring knowledge to the group from their own experiences (Baijnath & Ryan, 2014:194). In this case, the affordances of digital technologies sustain student-lecturer and, even more importantly, student-student interaction. The capability of a responsive interaction at a distance in small cohorts means that new instructional concepts, such as heutagogy, can be tested. Quality assurance of the work of TAs is overseen by the lecturer who designed the course.

2.6.2 The significance of the Unisa Signature Course pedagogy

The introduction of the online Signature Courses at Unisa has brought a lot of fundamental changes, for example, Signature Courses led to a reduction in student drop-out. Furthermore, the 2014 results of Unisa traditional assessment stood at 70%

when compared to Signature Course pass rate of 77% for the same period (Mischke, 2015). Furthermore, the process of dividing students into small groups of 50 proved to be very effective since it encouraged students to interact and collaborate with each other which at the end led to the emergence of a large student learning community which under the traditional Unisa pedagogy was not going to be possible. Most students find the use of technology a major advantage because of easy access to materials and the teaching staff. From the outset it is important to indicate that of all the major change initiatives hosted by Unisa, the Signature Courses are at the cutting edge of innovation. First, the Signature Courses situate teaching and learning within the context of the students' communities or their own life-worlds, thereby assisting them in becoming self-determined co-creators of knowledge in the learning process. This innovation alone marks a decisive departure from conventional teaching and learning practices, which have traditionally been paper-based learning materials in which students read texts and submit one or two assignments per semester with little or no interaction with the educator or with their peers.

The heutagogical approach chosen for the Signature Courses emphasises student engagement in deep learning as the very basis for improved learning outcomes (Baijnath & Ryan, 2014). Heutagogy improves critical thinking through self-directed learning, guided by carefully designed courseware which is mindful of the diversity of our students and their different contexts (Blashke et al. 2014). Furthermore, the Signature Courses provide students with opportunities to learn how to learn, particularly through weekly tasks or tests and by encouraging intensive interaction with their peers. Consistent with best practice models of effective on-line learning environments, the Signature Courses address three types of engagement: students-content, student-student, and student-lecturer engagement (Baijnath, 2014 a/b). The student-student component is especially important since it has been consistently shown to improve student learning outcomes and student success. This superior performance can be attributed to the fact that student-student engagement invites learners to be engaged as co-teachers who are invited to bring their own experience, their own life-world context and their own learning strategies into the overall learning process. In the Signature Courses, the content of each module is meant to develop academic skills, life skills and research skills, and should be relevant to the surrounding community and the outside world. In other words, students are exposed to the situations they will be part of when they graduate (Baijnath, 2014 a/b). Often cutting across individual courses and

institutions, signature pedagogies help students build a habit of mind that allows them to think and act in the same manner as the experts in the field (Shulman, 2005:52). In Baijnath and Ryan's (2014) view, whatever approach is taken, Signature Courses must develop critical and creative thinking and challenge students from the beginning. This strategy thus impacts on the learning success of each learner individually as well as collectively. This, on its own, makes the Signature Course project remarkable since it allows for more student interaction with the learning materials and with each other through continuous formative assessment. Using Christensen's (2010) concept of 'innovative disruption', Baijnath and Ryan (2014:197) posit that the Signature Course pedagogy at Unisa is intended to improve the retention rate of our distance students on the grounds that more support, more practice, more discussion, and more peer mentoring will give students a fair chance of succeeding, since the work they do on a weekly basis will add to their store of knowledge, contribute to their year mark and provide a steady and cumulative acquisition of knowledge and skills (Baijnath & Ryan, 2014).

Given Unisa's expressed commitment to improve the learning success of its students, the heutagogical approach is an important expression of the university's aspirations for its students and their success as Unisa students and as lifelong learners. In summary, Unisa has already begun to harness key technological innovations that have significant potential to improve the quality and reach of educational opportunities for our students. Currently, Unisa is building ICT infrastructure that will enable it to harness key technological trends more easily, most notably the concept of bring your own device (BYOD) and learning analytics. It is also envisaged that the availability of ICT infrastructure will provide a suitable enabling environment for students that will make it possible for them to communicate with their peers and the university when need arises.

To sum-up this section, Unisa hopes to make better use of the affordances of digital technologies in educating digitally illiterate students who find it difficult to insert themselves in the labour market without appropriate digital skills. In addition, Unisa hopes to use this digital platform to better support its students, and especially to reduce the high drop-out rate which ultimately affects the throughput and success rate, especially at undergraduate levels (Baijnath, 2014a/b). The Signature Courses are meant to chart the waters in this transition. They show that making better use of the affordances of digital technologies is possible for institutions such as Unisa, that is,

institutions with high student enrolment and catering for students who come from less privileged backgrounds. Within this developing economy, it is clear that technologies are having, and will continue to have, a major impact on all aspects of teaching, learning and assessment. By contrast, more traditional assessment at Unisa does not provide students with the luxury of interacting regularly either with their educators or peers because the lines of communication between the two parties are blurred, that is, they are not clearly defined. Further, traditional assessment is aimed at assessing learners on what they know about the subject matter instead of testing them on how to apply the knowledge in real-life situations. In traditional assessment, the emphasis is therefore, on assessing knowledge acquisition rather than knowledge application. In the Signature Courses, students are paced so that they keep on working towards achieving the objectives of that particular course or module. They are expected to participate in the discussion forums, blogs and even wikis. Furthermore, as has been mentioned, 80% of what they do is assessed formatively and the remaining 20% requires students to present a portfolio made up of all that has been done throughout the semester (see section 2.8.2 in this chapter).

Given that the Signature Course initiative is constructed as an online ODeL model of teaching and learning, various initiatives were launched to inform Unisa students of the online nature of the courses. Such initiatives also alerted students to the increased need to have access to a computer to be able to successfully participate in the learning process. Against this context, the Signature Courses are intended to assist students in acquiring 'important skills needed in the world of work, and to function in society as responsible citizens' (Baijnath & Ryan, 2014:194). Furthermore, Unisa is aware that in order to re-invent itself as a fully-fledged online university it must overcome a number of internal and external barriers. The external barriers include the uneven access of students to the Internet due to technological and cost reasons while the internal barriers suggest that the use of ICTs at Unisa in student assessment is very limited (Baijnath & Ryan, 2014). For instance, knowledge pertaining to student access to computers is unclear, and is exacerbated by not profiling in advance all students who are to start with this online learning and assessment.

In 2014 the Directorate for Information and Statistical Analysis (DISA) profiled students' access to ICT and found that about 80% of the student population had access to laptops and smart phones, 71% to desktop computers, 31% to tablets and 10% to

notebooks. However, the fact that Unisa students can be resourceful and can make alternative arrangements to access various forms of ICTs does not necessarily translate into access issues being resolved. While laptops and desktops remain key devices, students are increasingly making use of smartphones for study purposes. Lack of experience in using online learning technologies is also an obstacle for learners who need to participate in effective e-learning. From a managerial viewpoint Unisa experiences a lack of technical support staff, plus hardware and software support. Further, trainers also lack support, both technical and administrative. As Unisa has been teaching largely through print, very few opportunities have been cultivated to practice basic research in online teaching and learning (DISA, 2015). In summing-up this section it should be said that the current Unisa business model marks an institutional departure from open and distance learning towards open distance and e-Learning (ODeL) but at present this is in part a theoretical step as Unisa has not yet fully migrated to online learning. Next, a discussion regarding student assessment practices in some of the world's most well-known mega ODeL universities is presented.

2.7 ASSESSMENT IN OTHER MEGA ODeL UNIVERSITIES

The purpose of this section is to demonstrate how some of the world's most famous mega universities have used technology as a tool to enhance assessment and feedback in open distance and e-learning contexts. According to Daniel (1996), a mega university is defined as a distance teaching institution with over 100 000 active students in degree-level courses. There are a number of mega universities across the world of which some of them include the following: the Open University of the United Kingdom (OUUK), Athabasca Open University in Canada, Indira Gandhi National Open University (IGNOU) in India, the Open University of China in Beijing, the Open University of Terbuka in Indonesia, Anadolu Open University in Turkey, Payame Noor University (PNU) in Iran, Universidad de Nacional de Educacion a Distancia (UNED) in Spain, Sukhothai Thammathirat Open University (STOU) in Thailand, Korea National Open University (KNOU) in Korea, Centre National'd Enseignement a Distance (CNED) in France, Western Governors University (WGU) and the State University of New York (SUNY) in the United States of America. Although there are many differences between these mega-universities, the most important common feature is that they all use distance education technologies to promote open learning. Even though these distance teaching universities share numerous similarities, they are not identical in their mission

or practice. For convenience, the researcher divided these universities into two categories, the first including those universities that are open in terms of their admission criteria, and the second including those universities that have admission criteria but which have considerable experience in reaching rural or dispersed students using online resources. From both categories, the researcher has made a selection of those universities most relevant for this study. These are: Western Governors University (WGU), State University of New York (SUNY) in the United States of America, the Open University of the United Kingdom, Athabasca University, Indira Gandhi National Open University (IGNOU), and China Open University in Beijing, China. These universities were selected because, like Unisa, they are collectively embracing pedagogical models that actively engage learners through the utilisation of technology as a tool to enhance teaching and learning.

2.7.1 The Western Governors University (WGU)

The Western Governors University (WGU) was developed at a Western Governors Association in 1995 and is accredited by the Distance Education and Training Council (DETC). The university was started specifically to take advantage of the internet and new technologies to serve large numbers of students from a distance and at a low cost. The university fills an important niche in higher education today by serving a non-traditional student population (Mendenhall, 2012:116). WGU is the only regionally and nationally accredited non-profit university in the USA granting online, competency-based degrees to students in all fifty states. The university is particularly attractive to working adults who do not have time to attend class at traditional times in a brick-and-mortar institution. WGU was designed to use technology to provide education that is accessible, flexible, and affordable without compromising quality.

As the university public relations explains WGU wanted technology to take a transformational role in education in order to change the way how learning is measured and takes place anytime, anywhere (Mendenhall, 2012). The researcher has included the WGU in this literature review because its policies advocate for the utilisation of technology to transform the way teaching could be improved. Further, WGU appears to have managed the difficult challenge of providing high quality education at a relatively low cost (Case, 2008). It was realised that the only way to individualise instruction is through the use of technology so that content is available when students need it and

where they are able to make progress independent of a set time and place, thus truly enabling competency-based learning (Testa, 2008). Technology at WGU is used to teach students in an independent learning environment. Furthermore, technology allows the university to shift the use of labour by having the technology deliver instruction, changing the faculty role to that of a mentor who guides the student rather than delivering content. Interestingly, the pedagogy employed by the WGU is similar to the Signature Course pedagogy which puts emphasis on using technology to improve student-tutor and student-student interactions. Lecturers use technological language to support learning communities, facilitate discussion, work with students one-on-one, and determine where time is best spent in group chats and outreach. The shift provides each student with individualised help and support. WGU uses assessment to measure progress and student knowledge required for each competency (Testa, 2008).

As an online competency-based university, WGU requires that students demonstrate competence in given content areas through a series of assessments. WGU employs a number of assessment techniques, including objective assessments, performance assessments, portfolios, projects, capstones, and observations to determine a student's competency. Assessments most often are performance based or objective assessments that are developed in accordance with specific content objectives. Objective assessments generally assess lower-level cognitive skills such as basic recall of knowledge, while performance-based assessments generally assess higher-level cognitive skills by asking students to apply their learning in an approximation of real world situations. Each element of an assessment aligns with, or corresponds to, specific objectives (Mendenhall, 2012:124).

Unlike most academic institutions, WGU does not offer courses in the traditional sense. Students are expected to master competences through independent study, exploration, and collaboration (Case, 2008). This model presents a unique situation for students. In a traditional academic institution, knowledge is imparted to students through an instructor, who acts as a filter (Testa, 2008:1). The instructor selects which content areas to cover and which to exclude in a given course, constructing a syllabus that outlines those topics as well as the resources that will be used in the course. These decisions are influenced at least in part by the instructor's experience and personal perspective, which are reinforced through the lectures and discussions that typically occur during the course. Instructor perspectives are the result of a similar filtering

process that occurred during their own education and experience. Thus, instructors reproduce the knowledge and perspective that were etched in them (Testa 2008:2). Similar to the Unisa Signature Course pedagogy, WGU recognises that students bring unique knowledge, skills, abilities, and experiences to their chosen fields of study. Because the university is completely online, students are able to access learning materials anytime, anywhere. With technology able to deliver content whenever and wherever students need it, access is expanded to include everyone with access to the internet, and the focus shifts to learning rather than trying to figure out how to fit classes into everyday life (Mendenhall, 2012:125). Every operation that can be automated allows faculty and student-support services to spend more time directly working with students.

To sum-up this discussion on WGU it is important to indicate that university was started with the mission to utilise technology to develop a new competency-based model in higher education, to make higher education more affordable while improving educational quality, and to expand access to populations that are traditionally underserved by higher education. Furthermore, the model used at WGU could serve as a good example for bench-marking Unisa and other mega ODeL universities that are aspiring to use technology for teaching and learning processes. Through WGU's achievement over the years, one can with confidence say that technology does not just increase productivity for student learning, it also plays an important role in automating functions within the university to make it more productive. This literature review found that WGU's teaching and learning model is unique because of its use of competency-based model that gives students a voice.

2.7.2 State University of New York (SUNY)

The State University of New York (SUNY) has 64 campuses across the state of New York and follows a decentralised model with each campus being fully autonomous in terms of authority. SUNY is comparable to Unisa in terms of student numbers. They have a student body of about 423 000 students and approximately 88000 staff, including their teaching assistants. Currently Unisa has a population of just over 400 000 students scattered across the country and approximately 6 000 members of staff including teaching assistants or tutors. Most SUNY campuses have a template-based, team work approach to course development. Heutagogy is adopted as basic

pedagogy (techno-heutagogy for online courses) with a focus on presence, interaction and action. At SUNY, student, teaching assistant, lecturer and peer presence, interaction and action in the learning space provide the foundation for learning. SUNY has an extremely well-resourced centre, the Centre of Professional Development (CPD) that provides professional development and training for staff throughout the 64 campus of the SUNY system. At Unisa, the Centre of Professional Development is located at the Directorate for Curriculum Learning and Development (DCLD) which is mandated to provide training to the staff on how to improve their teaching practice in distance education. In terms of assessment administration, SUNY's assessment administration resembles that of Unisa. For instance, they use teaching assistants to assist academic staff with the facilitation of online learning and the grading of students' assignments using rubrics under the supervision of a lead lecturer. Furthermore, the teaching assistants are fully responsible for the provision of feedback to students, contribute to online discussion forums and respond to student queries.

Formative assessment marks are not centrally held but it is the responsibility of each college to determine rules and procedures for assessment and to maintain grades. It is only the final mark made up of a combination of formative and summative assessment mark that is reported centrally. However, at Unisa's Signature Courses, students are assessed regularly online and 80% of the assessment is done formatively with only 20% is done by compiling a portfolio of evidence which must be submitted at the end of the year or semester. In both institutions courses and assessment are designed to optimise learning. It is important to indicate that lecturers who are responsible for learning facilitation in online courses report superior performances from students and an increased pass rate in the online environment because courses are designed to ensure the presence of students, peers, teachers and teaching assistants in the teaching and learning space.

2.7.3 The Open University of the United Kingdom (OUUK)

Despite its high-class universities, the UK's larger higher education system was underdeveloped in the post-war context. For adults, far fewer learning opportunities existed at the degree and diploma level. Deliberations among politicians led to the formation of the OUUK by official Royal Charter in 1969 (Open University, 2012). The OUUK is the only university devoted to distance learning. It is also the UK's largest

university with over 200,000 students overall (Dillon, Reuben & Coats, 2005). Around 150,000 of these students are studying undergraduate level courses. The OUUK has standard assessment types which include the following: assignments, oral or practical assessments, examinations, portfolios, group discussions, contact sessions, seminars, hands-on activities, and fieldwork. These are the most commonly used assessments from a range of more innovative assessment practices. OUUK modules usually have two assessment components: assignments completed during the module known as continuous assessment, and an examination or other examinable piece of work such as a project, portfolio or dissertation (Chaudhary & Dey, 2013). The examinable component is usually a proctored three-hour paper which is usually referred to as end-of-module assessments (EMAs). The most common form of student assessment is continuous assessment which is made up of tutor-marked assignments (TMAs) and computer-marked assignments (CMAs) (Dillion et al. 2005). Online computer-marked assessment presents an opportunity to assess and provide personalised and immediate feedback, even to large classes. It can motivate and engage students and provide information to educators about their students' learning. Advantages of CMAs are that they are the least expensive of assignments and provide rapid feedback to students. However concerns have been expressed as to the authenticity of assessment of this type.

OUUK modules are often assessed using an equal weighting of examinations and coursework (Dillon et al. 2005:2). When a student registers for a particular module or course, he/she is normally expected to complete all the assessment activities and finish the module in line with the cut off dates provided in the assessment policy and procedures manual or study planner (Sharples, McAndrew, Weller, Ferguson, Fitzgerald, Hirst & Gaved, 2013). It is compulsory for students to do all the formative assessments which are submitted online or on paper. If a student has submitted online he/she receives an email informing him/her when it will be marked and ready for collection. When a student receives the marked assignment he/she also receives a separate assessment summary which contains the tutor's overall comments on the TMA (Sharples et al. 2013). At the OUUK students prefer to submit their assignments online because they like getting back their feedback more quickly than if they are submitting paper (Nicol, 2007; Open University, 2014). In most forms of distance education, feedback on frequent assignments is the main interactive component of teaching and the OUUK has placed great emphasis on frequent assignments, training and paying

tutors to provide comprehensive feedback, and monitoring the quality of this feedback. For some OUUK students this is their only contact with their tutor. This is in line with Gibbs and Simpson's view (2004:3) which states that "students can cope without much, or even any, face-to-face teaching, but they cannot cope without regular feedback on assignments." Because regular assignments and comprehensive feedback are understood to be central to distance education, these have largely been retained, as a result today's OUUK students may receive fifty times as much feedback on assignments over the course of an entire degree programme as do students at conventional universities (Dillon et al. 2005; Butcher, 2008).

When considering the OUUK's assessment strategy, there are obvious similarities to Unisa's Signature Course assessment strategy in the use of teaching assistants. For instance, Unisa students are placed into small manageable groups of 50 under one teaching assistant whose responsibilities include among others to facilitate learning and monitor student interaction with the group or peers and who report to a course lecturer. At the OUUK, students taking a course are assigned to an associate lecturer who will have a group of up to 20 students. Depending on the course and the geographical distribution of the students, the associate lecturer provides face-to-face tutorials, telephone tuition, and online support via email or conferencing. The associate lecturer is also given the task of marking the assignments (known as tutor-marked assignments, or TMAs) of the students in the group and gives feedback on performance. It is worth noting that though Unisa is adopting similar procedures with the Signature Courses in relation to the provision of feedback using the above strategies, there is a need to include the lead lecturer in the grading of students instead of only making use of the teaching assistants.

Similarly, at the OUUK TAs are not involved in the development of teaching materials for the course they tutor; their role is to support courses by running tutorial sessions either face-to-face or by means of tele-communications (Open University, 2012). At Unisa, TAs are expected to facilitate student interaction through the use of the myUnisa student portal but there is no face-to-face contact between the teaching assistant and the student. In both institutions, the examinable component for many modules consists of a hand-written examination, usually lasting three hours and is supervised by an invigilator. Both universities set up examination centres throughout the country including those outside their physical boundaries. Students sitting for examinations in these

established centres do not need to pay an examination fee. However, for students who live or are temporarily working outside these areas, examinations are arranged on request, at what are called non-established examination centres. Having a system of online or at home examinations or weighting the assessment component in favour of formative assessment is obviously more cost-effective and more convenient for students and institution alike. In this regard, the Signature Courses at Unisa are exemplary. While this researcher believes that comparing Unisa's assessment practices with that of the OUUK is useful, it is increasingly difficult to compare these two mega-universities because of the differences in terms of technological development. At the OUUK access to Internet is not an issue whereas Unisa is still faced with the challenges of accessibility and affordability. Although there is a gap between the two institutions in terms of technological advancement, the researcher believes that procedures can be improved and ensured in both institutions by the implementation of web-based formative assessment and the integration of formative assessment and final examination.

2.7.4 Athabasca Open University

The origins of the University of Athabasca (AU) lies in the 1960s' rapid increase in university students enrolments, which augmented strongly for a fourth Alberta University. In response to the pressures, AU was created in 1970 by an order in council of the government of Alberta. AU was formed specifically to provide education to post-secondary students who wanted to pursue their educational goals without leaving their homes, jobs or families (Kannepohl, Ives & Stewart, 2012). AU is Canada's open university dedicated to the removal of barriers that restrict access to and success in university-level studies and to increasing equality of educational opportunity for adult learners worldwide. It offers more than 700 courses as well as bachelors' degrees, masters' degrees and undergraduate and graduate certificates and diplomas (Athabasca University, 2013). Between the 1970s and 80s AU delivered its study materials in print-based form, and student support was done through the use of telephones. With the advent of the emerging technologies, AU made it possible for its students to submit their assignment electronically rather than through the postal system. This electronic submission of assignments makes it possible for students to receive immediate feedback. A critical factor in student success is student engagement. Further, AU provides student engagement opportunities through a well-designed interactive course delivery design. The availability of technologies makes it possible for

the teaching assistants or tutors to interact and participate in online discussion forums (Kannepohl et al, 2012:162). This is similar to what Unisa is doing through the Signature Course pedagogy. Similar to other distance education universities around the world, AU evaluates or assesses its students by their submitted work, interaction with the teacher/tutor, and invigilated examinations.

2.7.5 The Indira Gandhi National Open University (IGNOU)

The Indira Gandhi National Open University (IGNOU) was established by an Act of Parliament in 1985 with the vision to provide access to higher education to all segments of society and to offer high quality, innovative and need-based programs at different levels. In 2004 IGNOU was identified as the world's largest mega university in the democratic world (Kanjilal, 2013:221) with its student population of over 4 million students scattered across the world (Perris, 2012). Most of the programs are offered using blended mode such online delivery mode, print, and audio-video along with the face-to-face counselling support (IGNOU, 2001; Sharma, 2001; Sharma, 2003). With regard to assessment, IGNOU follows a three-tier system of evaluation: (a) self-assessment activity in the form of self-assessment questions, (b) assignments, and (c) term-end examinations (Chaudhary & Dey, 2013). Self-assessment activity along with assignments constitutes the continuous assessment component of the IGNOU assessment system. Their main aim is to help the learners assimilate the subject knowledge while motivating them to learn.

The second tier of student assessment is made up of assignments (Murugan, 1994) of two types: (1) tutor-marked assignments (TMA), and (2) computer-marked assignments (CMA), similar to the way that OUUK and Unisa assess their students. The functions of an assignment in the IGNOU context are: to assess the academic achievement of a student, to facilitate long-term and short-term information retention, to provide feedback (to students/institution), to sustain motivation and break isolation, and to establish two-way communication (IGNOU, 2006). Considerable attention is paid to the preparation of assignments, computation of grades awarded and the turn-around time. There are five main purposes of the assignment component at IGNOU: First, assignments are meant to help the isolated learner to learn by encouraging regular systematic study and discourage last-minute cramming just before the term-end examinations, to initiate two-way communications between learners and the teaching assistant or tutor through

feedback which gives learners a necessary confidence and encourages them to take the course of their study successfully, to provide early warning of any problem or weaknesses in the concepts or the methodology of their study (Chaudhary & Bansal, 2000). The methodology of assignments is built up in such a way that there is a sufficient interaction between the distance instructor and the student. However, besides grading the academic performance of a student, assignments are presently being used to monitor the whole learning process of the students. Assignments and term-end examination constitute 30% and 70% respectively of the total weighting. At IGNOU, formative assessment has been and still is used as a means through which the academic performance of a student is measured. In many instances, formative assessment comprises assignments, the personal contact program and workshop related activities such as the practica, community participation, field experience, hands on activities, group discussion, etc (IGNOU, 2006).

At IGNOU there are tutors who are called academic counsellors who are expected to perform the affective functions of student support. These tutors provide support to learners by clarifying their doubts, elaborating difficult points, explaining concepts and demonstrating processes, etc. Again, tutors are expected to perform the following roles and functions: to provide a personal point of contact for the distance learner, to monitor the progress of learning by distance learners, to evaluate their assignment response and provide feedback, to prepare them for examination among others (Chaudhary & Dey, 2013; IGNOU, 2001; Wei, 2008). In terms of student assessment, IGNOU offers both proctored and online examinations which are mostly made up multiple-choice questions, especially at undergraduate levels. At IGNOU, summative assessment comprises term-end examinations, which take place twice a year, normally one in June and the other in December of a particular year. Further, it has become customary at IGNOU to use a 3-hour written examination for purposes of term-end assessment and self-assessment (Chaudhary & Dey, 2013). In order to cater for the millions of students registered at IGNOU, the university is embracing technology in order to reach its students. However, there are problems inherent to the IGNOU system, for instance, accessibility and affordability to the internet is still a big issue. Though the Indian Government is trying to provide the necessary technological infrastructure to provide Internet connection, there are still millions of students who do not have access to Internet connectivity (IGNOU, 2015).

Despite this, IGNOU is implementing the use of technology for learning and teaching purposes because it makes online student-teacher interaction easier. Like, all the universities under discussion in this section, IGNOU makes use of teaching assistants to grade students under the supervision of a counsellor or tutor. The issue of access and success has prompted IGNOU to innovate a blended means of teaching and learning. The university has now resorted to the use of social media like blogs, wikis, Facebook, twitter, whatsApp to reach its students. At IGNOU, there seems to be a general agreement to offer most of the courses through blended, web-enhanced and fully online modes. Another cutting edge innovation at IGNOU is the integration of digital tools that accommodate learners' mobile life style and individual learning style. While IGNOU equips its students to function in a digital age, it again provides its academics the opportunity to practice good pedagogy. The researcher concludes this section by arguing that this has been a useful comparison because IGNOU is a university operating in a developing nation like South Africa with similar problems of unreliable electricity supply and internet access.

2.7.6 The Open University of China (OUC)

China Central Television and Radio University (CCRTVU) was officially founded in 1979 and became The Open University of China (OUC) in 2009. OUC has been identified as one of the world's largest distance teaching university system (Latchem, Abdulla & Ding, 1999), which in actuality can be considered the largest university in the world. The OUC has adopted various media formats like radio, TV, textbooks, audio materials, computer files, and Internet to conduct open distance education nationwide (Wei, 2008). By 2010, China had over 4.5 million students enrolled in open distance education, and 2.8 million students (61.7%) were at the OUC (Zhiyong, 2010; Perris, 2012). OUC is a new kind of higher education institution that offers open and distance education supported by information technology and with a focus on both degree and non-degree continuing education (Ministry of Education of the People's Republic of China, 2010:21). Although OUC offers far fewer programs than IGNOU, it has placed emphasis on greater use of online learning, an outcome that has reached nearly all programmes at OUC (Perris, 2012). OUC has made it its duty to provide lifelong learning services for everyone; it provides a diverse range of flexible education opportunities and has undertaken the social responsibility of promoting equal access to education. As OUC

president Yang Zhijian claims in promotional material entitled: “The Open University of China-making lifelong learning a way of life”:

... The OUC has six major types of online content, namely: core online courses, an online learning space, an online teaching team, online support, online assessment and an online management system. It supports the integration of multiple platforms in the cloud, including tablet computers, smartphones, TVs, desktop computers and even classroom itself. It offers a fresh learning model that combines web-based autonomous learning, distance learner support and face-to-face tutorials, and enables the management of learning portfolios, credit transfer and certification (Zhijian, 2010).

By leveraging the advantages of computers and other web-based technologies, and promoting the development of an online learning assessment system that supports a range of assessment methods, the university is able to establish a distance education assessment system that matches the educational characteristics of adult learners. The system combines formative and summative assessment; self and group assessment; and online and offline assessment (Open University of China, 2010). With the support of the digital learning devices mentioned above, learners can change their television into a special set top box. Learners can access the OUC homepage via remote control in order to access degree and non-degree courses. For busy professionals, portable devices like tablet computers provide easy access to learning. After registering and logging into the OUC’s system, learners have access to teaching affairs management information, examination information, books and course resources (Chaudhary & Dey, 2013:207; Open University of China, 2010).

Having studied the learning characteristics of working adults, the university has changed the traditional assessment mode of one examination for everyone and has set out to establish a more flexible method of assessment. This increases the proportion of formative assessment and decreases the proportion of summative assessment, while also increasing assessment of knowledge application. This innovative method of assessment, which combines learning-based assessment with course-based examinations, and open-book examinations with closed-book examinations, meets the diverse needs of a range of students (Chaudhary & Dey, 2013). Further, the OUC, like

Unisa, has a section or department responsible for the recognition of prior learning (RPL). This department or section opens up the learning door to those learners who did not have the chance to get their qualification through formal education but who managed to get the necessary experience at the work place.

2.8 CHAPTER SUMMARY

The purpose of this chapter has been to highlight a number of salient issues and guiding principles that underpin assessment practices in open distance and e-learning. This literature review has further demonstrated that when designing a pedagogical model, it is prudent to consider the contemporary technological levels, as well as the context and historical models, in addition to the key aspects of open learning. Examples of actual good practice have been provided to illustrate how certain initiatives have addressed challenges and sought to engage learners in an effective manner. Using a constructivist-interventionist framework followed by an overview of studies on theories of distance education that have a bearing on assessment practices in open distance and e-learning, the chapter further reviews conceptualisations of assessment practices including the influence that technology has on student assessment and the provision of feedback. Most importantly, special attention was given to those studies that paid more emphases on how technology can be utilised to enhance and influence student assessment and feedback in open distance and e-learning contexts. The emphasis in this literature is not only on the measurement of student learning, but on assessment as a means to enhance learning and support an engagement in assessment dialogue. The review lays emphasis on the provision of constructive and timeous student feedback as this is central to supporting further learning which is seen as a positive factor for student success.

In addition, this literature review has indicated that, despite differences in studies conducted regarding assessment practices, most authors and researchers believe that assessment enhances student learning and feedback. Further, this review shows that assessment related dialogue between students and lecturers is vital in enhancing student learning and fostering a common understanding around the purposes of assessment. This literature review also provides an overview of how technology, through effective pedagogies, can enhance assessment and feedback by using Unisa's Signature Courses as exemplar. Further, this review compared Unisa's assessment

processes with those of other mega ODeL universities in order to find ways and means of improving its assessment using available technological affordances. To conclude this discussion, it should be noted that the introduction of the Signature Courses curriculum at Unisa played an important role by charting the way for Unisa to make more comprehensive use of the digital technologies. There is little doubt that the Signature Courses have achieved much. In fact, the assessment-driven instructional design seems to be particularly appropriate given the context and tradition in which Unisa students find themselves. Owing to its transformative nature, the Signature Courses curriculum programme provides fertile ground for further research. Such research results have the potential to steer future strategies for ODeL at Unisa. At the same time the Signature Courses provide a space for all students to reflect on central issues of their discipline in the context of social transformation. The linkage between technology and reflection lies in the affordances provided by online learning. It is important to acknowledge that this study is undertaken at a developing country which still experiences problems of unreliable power supply. The unreliability of power supply becomes a challenge to the majority of Unisa students since this has a negative impact on accessing technology. As can be summarised from the above discussion, increased use of technological affordances can fast-track student feedback and reduce lecturer-workload regarding marking and administration of student assignments. In the next chapter the researcher provides an outline of the research design and methodology.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

Research methodologies were briefly discussed in Chapter 1. Chapter 2 presented a detailed literature review based on student assessment practices in ODL environments. This chapter outlines the research design and methodology in detail. First, it provides the philosophical framework or paradigm underpinning the study. This is followed by a discussion of the research methodology including the design, the study population and the sampling procedures. Thereafter, the methods of data collection and data analysis are outlined. The trustworthiness or data validation of the findings is considered next. Finally, issues of ethical considerations that are related to and associated with the study are addressed. The research design and methodology used in this study are aimed at answering the following research questions:

- What are Unisa lecturers' and first-year students' experiences, attitudes and beliefs toward ICT integration into the Signature Course curriculum to enhance student assessment practices at Unisa?
- What role does ICT play in student engagement and interaction?
- Are Unisa lecturers and first-year students pedagogically and technologically ready for e-learning and e-assessment?
- How can ICTs be used to improve student assessment in distance education environments?

Furthermore, the research approaches that are used to answer the research questions posed above assist in achieving the aims and objectives of this study which are:

- To explore Unisa lecturers' and first-year students' experiences, perceptions, attitudes and beliefs regarding ICT integration in student assessment in ODL.
- To encourage student engagement and interaction in learning processes.
- To ascertain whether Unisa lecturers and first-year students are pedagogically and technologically ready for online learning.

- To establish a framework for effective student assessment in open distance and e-learning environments.

3.2 RESEARCH PARADIGM: INTERPRETIVE SOCIAL CONSTRUCTIVISM

First, this research study uses a social-constructivist theory as its research paradigm and, further, uses an interpretivist lens embedded in the social constructivist paradigm to extract information from the participants who are come from different life worlds (Cresswell, 2009). The nature of this study, with its focus on understanding Unisa lecturers' and first-year students' experiences regarding the effectiveness of using technology for assessment purposes, is consistent with an interpretive epistemological position and a constructionist ontological orientation. By using a constructivist-interpretive lens, the researcher acknowledges that due weight will be given to the participants who have different but unique credentials and experiences derived from their unique contexts or life-worlds whilst also acknowledging that this researcher approached the topic with his own experiences and values, and that whatever conclusion is reached, it will be based on the interpretation (as balanced and as accurate as is possible) of the conversations the researcher bears witness to.

To understand interpretive social-constructivism as a paradigm, the researcher will first outline what is meant by constructivism before explaining social constructivism in detail. Constructivism emerged as a result of a paradigmatic shift that rejects the views from behaviourist and cognitivist schools of thought and leans toward the premise that people construct their own knowledge through their personal experience rather than knowledge transmission and the recording of information conveyed by others (Johanssen, 1991). In constructivism students are more active in building and creating knowledge, individually and socially, based on their experiences, cultural factors and interpretations. The role of the lecturer in constructivism is to try to understand how students interpret knowledge and to guide and help them to refine their understanding and interpretation to correct any mistaken understandings and improve learned knowledge quality. Constructivist pedagogy sees students as active participants in their learning experiences rather than as passive vessels to be filled with information (Brunner, 1995; Cooper, 1993; Atherton, 2009; Hussain, 2012; Lincoln & Guba, 2000). The student is, therefore, not a blank slate as it is alleged in behaviourism since the student brings past experiences and cultural factors to the learning process (Merril,

1991; Johanssen, 1998; Bandura, 2005). Constructivists believe that individuals seek understanding of the world in which they live and work, developing subjective meaning of their experiences directed towards certain objects or things (Cresswell, 2013:8). Scholars such as Denzin and Lincoln (2008:28) argue that a constructivist approach not only enables participants to describe their stories about reality, but also to identify potential actions to overcome certain barriers. Further, Denzin and Lincoln (2008) argue that human beings do not construct their interpretations in isolation but within the context of the social environment in which they are actively engaged (Borich & Tombari, 2004). Therefore, constructivism is recognised as a learning theory that highlights the interaction of persons and situations in the acquisition and refinement of skills and knowledge.

Constructivism is divided into two types that are relevant to teaching and learning namely, cognitive and social constructivism. Social constructivist theory views learning as a dual agent: First, the student and the lecturer engage each other in order to construct knowledge, and second, their decisions scaffold each other (Silcock, 2003). Moreover, such interactions provide opportunities for students to scaffold their own understanding through the immediacy of shared interrogation both with and by peers and staff (Torrance & Pryor, 1998). In contrast to Piaget's (1968) assertion that children's development must precede their learning, Vygotsky posited that social learning is likely to precede development. Vygotsky's (1978) social cognition learning model views culture as playing a key role in the development of cognition. It is Vygotsky's (1962) social constructivist paradigm that is the focus of this study. In attempting to make sense of the social world, social constructivism views knowledge as constructed as opposed to created. A social constructivist perspective is viewed as a socially negotiated process which results in some behaviour that shows the individual's interest and cognitive and affective engagement (Kukla, 2000).

The basic principle behind social constructivism is that knowledge is constructed through social interaction, interpretation and understanding and is the result of social processes (Young & Collin, 2004:373; Vygotsky, 1978). Social constructivism also allows for a majority of the activities and lessons to be student-centred and requires that lecturers should be facilitators of knowledge working to provide students with opportunities and incentives to construct knowledge and understanding. Further, the lecturers' role is to create experiences within which students will learn and then guide

the students through their life experiences. Taking a social constructivist stance can enable lecturers to create an environment in which students can become intrinsically motivated to learn. The form of intrinsic motivation referred to here, is defined as an on-going engagement in learning that is propelled and focused by thought and feeling emerging from the learners process of constructing knowledge. To sum-up this section it could be said that social constructivism places great emphasis on everyday interactions between people and how they use language to construct and interpret their reality.

At this juncture, the researcher provides a brief discussion based on the relationship between social constructivism and interpretivism. While social constructivism and interpretivism may share common philosophical roots, social constructivism is distinct from interpretivism (Lincoln & Guba, 2000). Interpretivism is closely associated with Max Weber's *Verstehen*, with understanding being the core of the interpretivist social constructivist paradigm. An 'interpretivist' position is concerned with how the social world is understood or produced and is based on ways of collecting data which are sensitive to their social context. In common with constructionists, interpretivists in general focus on the process by which meanings are created, negotiated, sustained and modified (Schwandt, 2003).

Interpretive-social constructivism approaches rely heavily on naturalistic methods such as interviewing, document analysis, participant observation and non-participant observation (Smith, 1992). These methods ensure an adequate dialogue between the researchers and those with whom they interact in order to collaboratively construct a meaningful reality. Epistemologically, the assumption from interpretive researchers is that knowledge is gained through personal experience and in this case this knowledge will be solicited inductively from lecturers and first-year students involved in Signature Courses. Furthermore, interpretive researchers believe that reality is socially constructed by people's experiences and understanding of their world-view (Ernest, 1994:25). Therefore, the ontological assumptions of interpretivism are that social reality is seen by multiple people who interpret reality differently leaving with multiple perspectives of an incident. It is these different perspectives that are the focus of this study. The philosophical base of an interpretivist paradigm is hermeneutics and phenomenology (Giorgi & Giorgi, 2003). Hermeneutics is the study of the theory and practice of understanding and interpretation (Given, 2008:385), that is, making meaning

and interpretation in historical texts. Hermeneutics is built on the assumption that interpretation is not a straight forward activity even though people do it all the time when they interact with others and the world. As a philosophical approach to human understanding, hermeneutics provides the philosophical grounding for interpretivism. Hermeneutical or interpretive phenomenology concentrates on interpreting the meaning in the phenomenon that is concealed, and thus not immediately revealed to direct investigation, analysis, and description.

In this study, the researcher will be responsible for conducting individual and focus group interviews with the participants. Furthermore, the interviews will be digitally recorded and then transcribed so that the researcher will be able to interpret the discourse into a narrative that is faithful and true to the participants' original ideas. However, the researcher has used interpretive social constructivism because the context in which the study is undertaken is complex and varied. Further, the researcher acknowledges that the participants in this study arrive at their opinions about the topic under study from their subjective viewpoints which emerge from their respective and different life-worlds. The researcher is aware that the interpretive paradigm has been criticised for abandoning the scientific procedures of verification and therefore its results cannot be generalised to other situations that are applicable to a wider spectrum of contexts and situations because it rests on multiple subjectivities. Nevertheless, the researcher has responsibility to give a faithful account of the participants' narratives and weigh these against what he considers to be the objective reality of teaching and learning within an ODL context.

It is this researcher's wish that with this study a balanced account of what really happens in traditional assessment against that of the Signature Courses will be provided. Further, the researcher hopefully aspires to arrive at a meaningful and reliable outcome. To contextualise the approach to this study (interpretive and social constructivism paradigm), the researcher has described the Signature Course pedagogy which is based on a theory of learning called heutagogy (See Chapter 1), which is defined by Baijnath and Ryan (2014:194) as a theory in which students take responsibility for their own learning, and in so doing develop skills such as communication, team-work, creativity and innovation, and positive values. Heutagogy is basically a model allowing for a more student-centred learning, in which students are co-creators of knowledge as is the case in the Signature Courses.

In summing-up this section, interpretive social-constructivism has been chosen as a research paradigm for this study, because it aligns with an approach which encourages students to get involved in their own learning and this is echoed in the cooperative and collaborative learning which is at the core of the Signature Courses pedagogy. The ultimate objective of the Signature Courses pedagogy at Unisa is to foster the development of effective citizenship amongst its students. While social constructivism offers a number of intriguing possibilities for teaching practice, especially in ODL contexts, it requires further deliberations on reappraisal of the student-lecturer relationship. It is against this backdrop that this research study employed interpretive social-constructivism as its research paradigm to explore the ways in which specific technologies can be used to enhance and influence student assessment in ODeL contexts. Working from an interpretivist social-constructivist paradigm the researcher has chosen an inductive analysis to guide this study. Given the philosophical paradigm adopted in this study, a sequential exploratory mixed methods research design conceptualised within a pragmatic philosophy of life was considered the most appropriate. This mixed methods research approach will be used to address lecturers' and first-year students' experiences, perceptions, attitudes, and beliefs toward ICT integration into the Signature Courses curriculum to enhance student assessment practices at Unisa.

3.3 RESEARCH METHODOLOGY: MIXED METHODS RESEARCH

This research study is premised within a mixed methods research approach primarily to explore Unisa lecturers' and first-year students' experiences of using technology as a tool to enhance student assessment in ODL. Cresswell and Plano Clark (2007), Greene (2007), Teddlie and Tashakkori (2009) define mixed methods research as a type of research that uses two or more methods in a research project yielding both qualitative and quantitative data. For example, when different approaches are used to focus on the same phenomenon and they provide the same result, a high degree of study credibility is achieved. According to Cresswell (2008:9), 'Mixed methods research is both a method and methodology for conducting research that involves collecting, analysing, and integrating quantitative and qualitative research in a single study or a longitudinal programme of inquiry'. Furthermore, mixed methods research uses a method and philosophy that attempt to fit together the insights provided by qualitative and quantitative research into a workable solution (Johnson & Onwuegbuzie, 2004:19).

The purpose of this form of research is that both qualitative and quantitative research, in combination, provide a better understanding of a research problem or issue than either research approach alone (Cresswell, 2009). Furthermore, Cresswell (2009) posits that in mixed methods research quantitative data is collected by using instruments, checklists and records, whereas qualitative data makes use of interviews, observations, documents, and audio-visual materials (Ivankova., Cresswell & Stick, 2006). In quantitative research data is analysed statistically, in order to describe or compare variables in the phenomenon being investigated. In a qualitative study data is analysed through the use of text and image for coding, for theme development for relating themes (Cresswell, 2009). For example, a researcher might conduct an interview with the participants (qualitative) and after the interview conduct an experiment (quantitative) to see how they viewed the experiment and see if they agreed with the results. For the purposes of this study, mixed methods research is apposite since it has the potential to discover something that would have been missed if only a quantitative or a qualitative approach had been used (Onwuegbuezie, 2007:281; Cresswell, 2009). The two approaches complement each other and allow for a more complete analysis of the research problem (Tashakkori & Teddlie, 2003). As is the case with this thesis, this type of research involves collecting quantitative data after a qualitative phase in order to explain or follow up on the qualitative in more depth. Mixed methods research is used:

- To compare results from quantitative and qualitative research.
- To use qualitative research to help explain quantitative findings.
- To explore using qualitative research and then to generalize findings to a large population using quantitative research.
- To develop an instrument because none are available or useful.
- To augment an experiment with qualitative data (Cresswell, 2008:13).

In the context of this study, the first and qualitative phase of the study involved the collection of data from Unisa lecturers and first-year students using individual and focus group interviews. The secondary phase used a quantitative instrument (questionnaire) to triangulate the findings that emerged as a result of the focus group discussions conducted with Unisa first-year students registered for Signature Courses. Again, in the context of this study, using a mixed methods research had several advantages primarily because it offered the potential for generating new ways of understanding the complexities and contexts of the problem under investigation and the addition of the

quantitative phase refined the original qualitative data. What follows is a comparison of qualitative, quantitative, and mixed methods research. First, mixed methods research is formally defined as a class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study (Johnson & Onwuegbuzie, 2004). It therefore uses inductive (or discovery of patterns) or deductive (testing of theories and hypotheses) approaches. It is inclusive, pluralistic, and complementary. Looking now at the differences between quantitative and qualitative research, quantitative researchers most often work from a positivist or post-positivist paradigm (Johnson & Onwuegbuzie, 2004) where research conducted is expected to be objective, free of value, and hypotheses driven. Qualitative researchers, on the other hand, work from within a constructivist or interpretivist paradigm which supports the notion that there are many realities that are constructed as the researcher engages with participants (Cresswell, 2009; Holloway & Jefferson, 2000). In qualitative research, the major characteristics are induction, discovery, exploration, theory/hypotheses generating, and the researcher is the primary instrument of data collection, and analysis (Marshall & Rossman, 2011; Johnson & Onwuegbuzie, 2004). Qualitative researchers

... stress the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and...emphasise the value-laden nature of inquiry...[Qualitative researchers note that] quantitative studies emphasize the measurement and analysis of causal relationship between variables, not processes...within value-free framework (Denzin & Lincoln, 2005:10).

It is against this background that this study utilises mixed methods research (qualitative and quantitative) to solicit lecturers' and first-year students' experiences of technology as a tool for enhancing and influencing student assessment in ODL. Next, the study looks at the research philosophy which led to the use of mixed methods research.

3.3.1 Pragmatism as research design

Methodological choice does not exist within a philosophical vacuum. Brannen (2005) views the choice of research method/s as being driven by philosophical (ontological and epistemological) assumptions. One of the first tasks a researcher needs to undertake is

to position himself paradigmatically. According to Mertens (2005:7) 'A paradigm is a way of looking at the world. It is composed of certain philosophical assumptions that guide and direct thinking and actions.' Neuman (2006:81) refers to paradigm as 'A general organizing framework for theory and research that includes basic assumptions, key issues, models of quality research, and methods for seeking answers.' Denzin and Lincoln (2008:22) describe paradigm as follows, 'The net that contains the researcher's epistemological, ontological, and methodological premises may be termed a paradigm...All research is interpretive, it is guided by the researcher's set of beliefs and feelings about the world and how it should be understood.' It is important that the paradigm (s) upon which a research proposal and design is based are fully understood and made explicit in the research itself (Maxwell, 2005:36; Mertens, 2005:7; Neuman, 2006:81).

There are a number of paradigmatic stances that are usually associated with mixed methods research. These include the following: a-paradigmatic stance, substantive theory stance, complementary strengths stance, multiple stance, dialectic stance, and single paradigm stance. This study is therefore premised within a pragmatic or context driven design (Greene & Caracelli, 2003:96). Pragmatism in its simplest sense is a practical approach to a problem and has strong associations with mixed methods research. Pragmatism can be considered a bridge between paradigm and methodology or what Greene and Caracelli (2003) refer to as a particular stance at the interface between philosophy and methodology. Many mixed methods researchers and theorists draw strong associations with mixed methodology and pragmatism (Bazeley, 2010; Greene & Caracelli, 2003; Maxcy, 2003; Tashakkori & Teddlie, 2009). Johnson and Onwugubuzie (2004) summarise the philosophical position of mixed methods researchers:

... We agree with others in the mixed research movement that consideration and discussion of pragmatism by research methodologists and empirical researchers will be productive because it offers an immediate and useful middle position philosophically and methodologically, it offers a practical and outcome-orientated method of inquiry that is based on action and leads, iteratively, to further action and the elimination of doubt, and it offers a method for selecting

methodological mixes that can help researchers better answer many of their research questions.

The rationale for settling on pragmatism as the research design for this study was influenced by the fact that mixed methods research involves integrating qualitative and quantitative methodologies and the pragmatic approach allows coexistence of both the objectivist and constructivist viewpoints as they apply to methodology. Mixed methods researchers work with participants from an objective or subjective point of view, depending on whether they are engaged in the qualitative or quantitative aspect of the study. This researcher's decision to include quantitative as well as qualitative approaches within a mixed methods design was based on a desire to triangulate the findings from interviews by means of a questionnaire sent to selected participants.

3.3.2 Population of the study

Before discussing data collection approaches, the researcher started by providing some necessary contextual information about the study and the participants. First, this study was conducted at the Unisa, a dedicated public ODeL institution. The university comprises seven colleges, namely (1) College of Agriculture and Environmental Sciences, (2) College of Law, (3) College of Human Sciences, (4) College of Economic and Management Sciences, (5) College of Accounting, (6) College of Science, Engineering and Technology, (7) College of Graduate Studies. Unisa introduced the Signature Courses curriculum in the 2013 academic calendar year. Signature Courses are online courses done by all first-year students. Through the implementation of these Signature Courses, Unisa wishes to make sure that all its students are supported through the use of interactive technologies. The participants of this study were Unisa lecturers and first-year students drawn from the colleges mentioned above. First, the study used lecturers who were responsible for teaching Signature Courses as well as other more conventional courses at Unisa. Likewise, the students interviewed are registered for one or more of the Signature Courses and are most likely doing other more conventional courses at Unisa. This lent itself to useful comparative data as shall be noted in Chapter 4 (See section 4.4). Second, the study used first-year students from six of the colleges because at the time of collecting this data, the seventh college was not yet formed. The first part of this study's methodology used purposive sampling and snowballing, as selection interview criteria.

The first group of participants were Unisa lecturers responsible for teaching the Signature Courses. Before the introduction of the Signature Courses some of these lecturers had been involved in outcomes assessment and had held formal roles, such as departmental assessment representative, member of the faculty assessment committee, assessment coordinator, and so on. These lecturers were however, taken for online training in order to allow them to be able to function properly in an online environment since Signature Courses are online modules. Although most of the lecturers were computer literate, the training offered provided them with the opportunity to learn how to teach, receive and provide student feedback using online delivery system.

The second group of participants was made-up of Unisa first-year students who had registered for the Signature Courses for the 2014 academic year. The selection criteria for the focus group discussions were based on self-confidence in discussions and their interests in the study. These students came from different backgrounds, for instance, some of them were computer literate and some did not have any knowledge on how to operate a computer. A small proportion of these students were not aware that they are expected to do their modules online, despite the several attempts at broadcasting the need to prepare for online learning. More information on this point will be found in Chapter 4 of this study. Next, data collection and sampling procedures used when undertaking this study are explained.

3.3.3 Study sample and sampling procedure

Sampling designs comprise two main components: sampling scheme and sample size. In mixed methods research, the researcher must take sampling scheme and sample size considerations for both the qualitative and quantitative phases of the study. Data for this study were collected between the 2013-2016 academic calendar years. The researcher started this study by doing reflexive bracketing. Bracketing is the process in which the researcher brackets or puts aside his or her personal experiences in order to understand those of the participants in the study (Kvale, 1996). Bracketing typically refers to an investigator's identification of vested interests, personal experience, cultural factors and possible assumptions that could influence how he or she views the study's data and mitigates possible prejudice and/or subjectivity. This is in line with Moustakas' (1994:35) assertion that the primary way by which a researcher can investigate an

educational organisation, institution or process is through the experiences of individuals who make up the organisation or are involved with it, untrammelled by the investigator's own experiences. In order to select participants who had first-hand experience on Signature Course pedagogy, the researcher employed purposive sampling. In purposive sampling people or other units are chosen, as the name implies, for a particular purpose that is of interest for a particular study-though this does not simply imply any case we happen to choose (Denzin & Lincoln, 2000:22; Booth, Colombo & Williams, 2008). In order to trace additional participants or informants, the researcher utilised snow-ball sampling. Snowballing is a method of expanding the sample by asking one informant or participant to recommend others for interviewing (Babbie & Mouton, 2001:85). The reason for using snowball sampling was because it was anticipated from the start that participants could also help in the identification of relevant data sources by asking knowledgeable people for referrals (Smith et al. 2009:49). Through snowball sampling, the researcher was able to obtain referrals that assisted in locating people who had a better understanding of the Signature Course pedagogy. Before selecting the participants for this study the researcher used the following inclusion criteria:

- Lecturers were expected to have experience of teaching first-year undergraduate students through the use of technology-enhanced online platforms like myUnisa.
- Further, they should be willing to engage in an interview process which would involve follow-up interviews by means of which the researcher could gain access to a particular perspective on the phenomenon under investigation.
- Students who took part in this study were to be registered for any of the Signature Courses.

This process allowed the researcher to find a defined group for whom the research problem and objectives have relevance and personal significance.

3.3.4 Data collection instrument (Individual and focus group discussions)

The researcher mentioned in the previous sections that this study was conceptualised within a sequential exploratory mixed methods research approach. Being a mixed methods research study, the researcher started by exploring qualitatively lecturers' and first-year students' experiences regarding the utilisation of technology as a tool to enhance student assessment in ODL contexts using individual and focus group

discussions, followed by a quantitative approach in which a questionnaire was used to triangulate the findings of the results obtained from focus group discussions.

3.3.5 Data collection methodology (Phase 1 – qualitative approach)

After reading research books by authors like Babie and Mouton (2001), Barbour (2007), Crabtree and Miller (1999), Creswell, (2009), Collaizi (1978), Creswell (2009), Denzin and Lincoln (2011), Gay, Mills & Airasian (2006), Giorgi (1999), Gubrium and Holstein (2003), Mensch (2001), Merriam (2009), Moustakas (1994), Strauss and Corbin (2003), the researcher was persuaded to engage in qualitative research because an accurate and authentic description of lecturers' and first-year students' experiences, perceptions, attitudes and beliefs regarding the use of technology to enhance and influence student assessment practices in Signature Courses was required. In selecting a research methodology, Denzin and Lincoln (2011) suggest that it is proper to select that paradigm whose assumptions are best met by the phenomenon being investigated.

Like other research methodologies used by social science researchers, the qualitative descriptive approach asks questions about the phenomenon under study and looks for deeper understanding of particular aspects of life experiences. Using qualitative descriptive inquiry as a research methodology means to study the ways humans experience the world and how they make meaning out of their experiences. Further, the researcher judged that such an approach would allow a greater opportunity to understand, from as well-rounded a perspective as possible, the phenomenon under investigation.

A qualitative descriptive research approach has the potential to provide a logical and systematic way to collect data, analyse information, and report the results of the study in great depth (Denzin, 2010:271) while remaining differentiated from quantitative research with which it is conventionally contrasted. In the context of this study, qualitative research is defined as research methods that seek to understand things in their natural environments or natural settings. Because of the naturalistic settings characteristic of qualitative research, it is frequently referred to as naturalistic research, naturalistic inquiry or field research. The evolving definition by Denzin and Lincoln (2011:3) suggests that:

... Qualitative research is a situated activity that locates the observer in the world. Qualitative research consists of a set of interpretive, material practices that makes the world visible. These practices transform the world. They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings, and memos to the self. At this level qualitative research involves an interpretive, naturalistic approach to the world. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meaning people bring to them.

Qualitative research therefore, seeks to understand the nature of that setting; what it means for participants to be in that setting, what their lives are like, what's going on for them, what their meanings are, and "what the world looks like in that particular setting" (Patton, 1985:1). Like Denzin and Lincoln (2011), Patton (2001:39) says qualitative research uses a "naturalistic approach that seeks to understand the phenomena" in context-specific settings, such as "real world settings where the researcher does not attempt to manipulate the phenomenon of interest." Authors like Creswell (2009), Babie and Mouton (2001) define qualitative research broadly as any kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification. According to these authors qualitative research is the kind of research that produces findings from real-world settings where the phenomena of interest unfold naturally. Creswell (2009:15) defines qualitative research as "an inquiry process of understanding based on methodological traditions of inquiry that explores a social or human problem." In this stance Creswell is supported by Crabtree and Miller (1999:14) who posit that in qualitative research, the researcher is a participant observer who is completely immersed in everything that is taking place. This is particularly apt in that the researcher is currently immersed in the process of teaching and learning, with a keen interest in student assessment, particularly in an online environment. This immersion positions and allows the researcher to study the phenomenon of student assessment from an invested vantage point since the researcher has the privilege of selecting the study participants from within an institution with which he is familiar.

Merriam (2009), Giorgi and Giorgi (2003:45) posit that qualitative researchers draw data from various sources such as observations, interviews, focus groups, and available documents. In this study, the researcher has used all of these research tools to unmask

and understand how people make sense of their lives and their experiences (Conceicao-Runlee, 2001:4; MacMillan & Schumacher, 2006; Maxwell, 2005). As a rule of thumb, when adopting a qualitative descriptive approach the researcher does reflexive bracketing before data collection. The main aim of doing this bracketing was to allow the voices of the participants to be heard when they share their experiences and perceptions without being influenced by the researcher's personal understanding of the assessment process in distance education. By means of this bracketing operation, the researcher tries to eliminate bias and in so doing to achieve a direct contact with human experience as it relates to the research questions. This reduction in bias does not result in the complete disinterest of the researcher but rather in the suspension of all narrowly confining interests preceding attention to the phenomenon, in order to become fully interested in the phenomenon itself (Giorgi, 1985:91).

3.3.5.1 Individual and focus group discussions

When the researcher began this study, he had interviewing experience from previous work, but none within the context of an ODL institution, so it became necessary to start by having a pre-test interview with some of his colleagues who were seasoned researchers at the institution in which the research is being undertaken. The rationale behind the use of colleagues in this pre-test interview was to allow people who were experienced to critique the researcher's style of interviewing before conducting the actual face-to-face interviews. At the end of the first interviews, the researcher realised that the pre-test interviews served two purposes: they not only provided useful feedback regarding interviewing skills, but, they were very useful conversations, especially the responses received about student assessment and interaction in Signature Courses that make use of technology as a delivery tool to reach students in open distance learning. The list below outlines what the researcher learned in this first phase of interviewing. This information has been included here as an example of the reflections made throughout the researcher's exploration in order to improve his research methods. After being critiqued by colleagues about the researcher's interviewing style he was advised to:

- Use individual semi-structured interviews so that he could obtain good insights into the interviewee's actual feelings. The researcher also discovered that if he

made use of structured interviews they might be easier to analyse but they would reveal very little information about the topic being investigated.

- Prepare a paper before starting the interview. The rationale behind this was to make sure that all the questions to be asked were covered.
- Expect to be a participant observer in the interviews (Kvale & Brinkmann, 2015) but to avoid talking more than necessary or to influence what the interviewee might say.
- Digitally record each interview and use a journal or notebook to take notes because one cannot be in a position to remember everything that has been said after the interview unless one has kept a record of the proceedings.
- Start recording before explaining anything (e.g. the purpose of the interview, that it will be recorded and that all results will be anonymous). Ask the participants if they understood what you have said so as to have a record that informed consent was obtained to the interview and methods used to gather data.
- Begin each recording by saying the date, time of the interview and a way of uniquely identifying the interviewee, preferably not using their real name (for confidentiality and ethical reasons).
- Allow enough time for all the interviewees to talk as long as they wanted, but be prepared to stop if they seem to have exhausted the topic as this will be shown by repeating what they have already said.
- Be very careful to avoid leading questions. Instead look for various ways of asking neutral questions.
- Transcribe the recording as soon as possible after each interview to avoid forgetting impressions which might be explained briefly in one's notes or retained in one's mind.
- Allow interviewees to wander if they want to, but be able to bring them back to the intended subject matter. Try and sum up at the end the points particularly relevant to the interview subject and any controversial points. Give interviewees the opportunity to retract if they wish to do so.
- Ask them if they want to see the transcription manuscript of the whole interview (but do not push it unnecessarily or imply that they can change what they have said, they can add further/later thoughts).

Through this peer-review process the researcher was able to practice interviewing, transcription and data analysis practices. According to Barbour (2007), the focus in the peer-reviewing process is not to train the researcher, but to challenge the researcher's personal assumptions about the collected data, manage subjectivities of the researcher, and provide alternative interpretations in order to create knowledge that is more robust and vetted than the researcher could produce if he/she was working alone. The primary concern for a qualitative inquiry approach is to elicit rich, detailed, and first-person accounts of experiences and phenomena under investigation (Charmaz, 2006; Denzin & Lincoln, 2005). When conducting this study the researcher rooted his research methodology in the views of Kvale (1996:3) who uses the metaphors of the "traveler" and the "miner" to approximate the qualitative interview process. Just as the traveler encounters many people in unknown lands engaging in conversations Kvale reminds the reader that this means 'wandering together with', asking questions and so learning about different ways and customs. He/she returns home replete with new knowledge and renders these conversations into narratives. So, the qualitative interviewer reports what he/she hears and observes in a nuanced yet accurate manner. At the same time, the interviewer as a traveller is changed by the encounters and conversations so that the final result is an amalgamation of interpretation and analysis, a creative end piece resulting from an intertwined process.

The researcher was largely influenced by Steinar Kvale's (1996:3) statement which reads: "If you want to know how people understand their world and their life, why not talk to them?" This statement made the researcher to realise how important it is to interview people especially if one wants to understand why people behave or do things the way they do. This made the researcher to decide to use semi-structured interviews to get more information from the participants. On the other hand, the miner analogy, suggested by Kvale (1996) is more concrete and more purposeful. The interview is seen as a process whereby knowledge about the topic is 'mined or dug-up' out of a subject's pure experience untarnished by any 'leading questions' or undue subjectivity on the part of the miner/reviewer (Kvale & Brinkmann, 2015:138). According to this explanation, the collected data is owned by the researcher who in turn interprets the story of his or her discoveries, or re-tells his or her tale to his or her peers, and possibly his or her fellow wanderers (Kvale, 1996:3).

In the above paragraph, Kvale and Brinkmann (2015) describe one way of approaching and conducting a qualitative enquiry. Many different forms of interviewing exist. Interviewing is a conversational practice where knowledge is produced through the interaction between an interviewer and an interviewee or a group of interviewees (Rubin & Rubin, 2012). Interviews are a key to obtain in-depth information about people's perceptions, beliefs, knowledge, meanings, definitions of situations, and constructions of reality (Punch, 2005). Interviews can be formally conducted in surveys, through Internet, over the telephone, or in face-to-face interaction, and they can be informally conducted, for example, as part of ethnographic fieldwork. Research interviews can be more or less structured.

Unlike everyday conversations, the research interview is most often carried out to serve the researcher's ends, which are external to the conversation itself (e.g. to obtain knowledge about a given topic or some area of human experience). In-depth individual interviews allow the researcher to enter into the inner world of another person and to gain a better understanding of that person's views (Nunokoosing, 2005:698). Interviews can result in more accurate and honest responses because the interviewee has opportunities to explore related or tangential issues allowing the interviewer to clarify specific issues and obtain a well-rounded perspective of the problem from the interviewee's responses (Mertens & Ginsberg, 2009). Further, an interview guide approach is used in the interviews (Annexure 4; Annexure, 5). Tutty, Rothery and Grinnell (1996:56) explain that semi-structured interviews, which use "predetermined questions or key words" as a guide, "are particularly appropriate when one wants to compare information between and among people while at the same time one wishes to more fully understand each person's experience."

The interview guide consists of overarching interview questions aimed at having participants describe their perceptions and experiences regarding the impact that technology has on student assessment and provision of timely feedback in open distance and learning contexts (See annexure 4). The researcher started data collection by utilising individual semi-structured interviews because it was believed that this was the only relevant method that could allow the participants to vividly elaborate on their experiences regarding the use of technology as a tool for enhancing and influencing student assessment and feedback in Signature Courses. The rationale for utilising the individual interviews was that it allowed the researcher and the participants to engage in

a dialogue in real time. At the planning stage of the interviewing process, the researcher planned to interview 30 participants, from various Colleges, that is, interviewing five participants per College. Further, the researcher felt that this number would provide him with an adequate sample from which to gauge lecturers' experiences of digitised assessment practices in the Signature Courses curriculum. However, the researcher was mindful that this was a qualitative research study which does not necessarily need a large study population as suggested by authors like Lincoln and Guba (2000), Babie and Mouton (2001), Creswell (2009), Denzin and Lincoln (2011), Giorgi and Giorgi (2003), Krueger and Casey (2010), Kvale and Brinkman (2015), Strauss and Corbin (2003). To ensure that the interviews were conducted in accordance with ethical considerations, the researcher applied for ethical clearance from the Office of the Vice Principal: Research and Innovation, and the University's Ethics Committee for permission to interview the participants (See Annexure 2 for ethical clearance). The researcher made use of informed consent (See Annexure 3) in which the rationale and purpose of the interviews were explained to the participants as suggested by, Kvale (1996:171), Kvale and Brinkman and (2015). Based on their recommendations, the informed agreement consent form included the following information (see Annexure 3 for more complete information):

- The purpose of the research
- The consequences of the study for participants
- The risk and benefits of the research
- Permission to withdraw from the study without any penalty
- Procedures on how to protect the confidentiality of the interviewees
- An undertaking was made to make sure that the interview information provided by the participants will be used for research purposes only
- To ensure or foster anonymity, the study did not collect any identifying information, such as participant names, email addresses or physical addresses
- The voluntary nature of research participation

Most of the potential participants signed the consent form and those who did not were not pressurised to participate in the study (see Annexure 3). By ensuring privacy, the researcher hoped to promote a sense of safety and confidentiality among the participants. To maintain confidentiality and anonymity throughout the study all

participants were assigned pseudonyms. Before undertaking this study, the researcher reached an agreement with the participants that whatever information they shared with him would be used for research purposes only. The researcher made use of emails, personal visits and telephonic inquiry to the offices of various lecturers offering Signature Course modules to set up appointments for doing the interviews. The researcher started the interview by introducing himself so that the participants could feel welcomed. The sampled participants were asked questions which required them to share their experiences, perceptions, attitudes and beliefs regarding assessment practices in Signature Courses. Further, in the selection criteria the researcher did not identify the participants either by age, sex, creed or race because the idea was to get the views of all the various racial groups studying at Unisa. The researcher designed an interview guide meant to explore lecturers' experiences regarding student assessment (See Annexure 4 attached).

As a pre-cautionary measure, a digital voice recorder was used to record everything that was said during the interviews in order to provide the context for the rest of the study which Kvale (1996:171) calls 'traveller's tales.' Furthermore, following on the advice received from the researcher's colleagues, a notebook or journal was kept in which all the major points or statements that emerged from the participants during the interviews were written. This notebook was kept as a back-up to the researcher's audio-recordings. A number of experts (e.g. Glesne & Peshkin, 1992; Maxwell, 2005) recommend writing short notes, because it gives the individual researcher chance to discover things that he/she did not know were there. Using a notebook is one of the most effective research tools to mine the rich personal experiences and emotions of participants' inner lives. When sensitive or taboo topics are being discussed, notebooks often allow participants to feel comfortable with their degrees of self-disclosure. Further, writing about what was going on in the research study helped to clarify the particularities of a given situation, which was an important step in identifying possible ways to proceed. Looking back on the use of the notebook, it became obvious that it provided the researcher with a sense of emotional security. The notebook naturally became a place to bring together participant data, notes on the methodology literature, researcher's thoughts and ideas, and reading responses. The researcher's interview style was consistent with the advice that he got from the colleagues and those from Kvale and Brinkmann (2015). The researcher interviewed the participants until data saturation was reached as this was shown by the participants' failure to come-up with

new information about the phenomenon being investigated. However, to be satisfied if indeed data saturation had been reached, the researcher conducted one more individual interview. After verifying that data saturation had been reached, the researcher stopped whole interview process. Immediately after each individual interview the researcher listened to the recording and transcribed the recordings verbatim as soon as possible to avoid forgetting important impressions which might be only briefly explained in one's notes or retained in one's mind. At the end of the interview processes participants were reminded about the researcher's need for a second contact to discuss the study's findings and to make sure that the study findings reflected their personal experiences (member-checking). The primary reason for doing this was to allow the voices of research participants to be heard. In order to make sure that the transcriptions of the interviews were clearly clarified, the researcher opened a file with divisions for the various interviews and filed the following hard copy documentation:

- The informed consent agreement
- Notes made during the interviews
- Any notes made during the data analysis process
- The draft transcription and analysis of the interview
- The confirmation of correctness and/or commentary by the participants
- Data storage includes audio recordings
- Field notes and filing of hard copy documentation

The interview transcriptions and field notes were also stored electronically. The researcher also took into consideration the advice of Bentz and Shapiro (1998:96); Kensit (2000:342), who caution that the researcher must allow the data to emerge in their most unadulterated form. Once the interviews were completed and transcribed the researcher began the process of analysing the study by looking at the emergent themes using Collaizi's (1978) thematic data analysis framework. This framework was chosen because it has the ability to provide clear easy-to-follow step-by-step data analysis stages, and again, it is the only framework that calls for a validation of data or results by returning to the participants.

In addition to individual interviews, which have been discussed in the previous sections, the researcher also used focus group discussions interviews with Unisa first-year

students (See annexure 5). The primary aim of a focus group is to describe and understand meanings of a specific issue from the perspective of the participants of the group (Kitzinger, 1994; Krueger & Casey, 2010; Rubin & Rubin, 2012). The researcher has chosen focus group interviews as one of his data collection approaches because it complements a social constructivist paradigm. The focus group discussions were also aimed at finding out about their experiences including the pedagogical and technological preparedness for online learning. It was realised that should the researcher not use focus group interviews, there would be a possibility that he would not be able to capture a contrary view from that obtained through individual interviews. The choice of focus group technique in this research study was made on the basis that the focus group approach would generate rich and diverse views, opinions, and experiences from multiple participants. At its simplest, a focus group is an informal discussion between groups of selected individuals about a particular topic. In a group, people develop and express ideas they would not have thought about on their own (Krueger & Casey, 2010). The focus group interview is less structured as compared to the three categories of interview already discussed in the preceding section. This is because of the difficulty in bringing structure into a group; however, rich data can emerge through interaction within the group, for example, sensitive issues that could have been missed in individual interviews, may be revealed.

Krueger and Casey (2010), Kvale (2006), recommend that the membership of an ideal focus group should range from six to twelve subjects. Usually, the decision to use the method of focus group as the means of data collection is determined by the research question. The following section provides the various steps followed when conducting the focus group discussions. The sample for the focus group discussions was made-up of 6 groups of first-year undergraduate students and each group had 10 (ten) members. The participants came from Unisa's six colleges, namely: College of Accounting Sciences (CAS), College of Agriculture and Environmental Sciences (CAES), College of Economic and Management Sciences (CEMS), College of Education (CEDU), College of Human Sciences (CHS), College of Law CLAW), and the College of Science, Engineering and Technology (CSET). The researcher used these focus group discussions as a tool that could assist to generate responses in relation to the students' experiences regarding technology-enhanced assessment in Signature Courses. To increase the usefulness of the focus group discussions, the researcher targeted first-year students who were placed in similar groupings in their Signature Course modules.

Secondly, the researcher tried to set up groups in which most of the students were friends and/or study mates who could relate with ease to each other about actual experiences in their daily lives. When the researcher began with these focus group discussions, it was thought that most of the students would be based in the urban centres and this was partially a valid assumption. However, the researcher discovered that although all of them reside in and around Pretoria (a metropolitan urban centre), most of them came originally from different regions in South Africa but had made arrangements to stay in Pretoria in the hope that residing in close proximity to the university would enable them to have access to a variety of study resources. As in the first individual interviews, all the participants were allocated pseudonyms in order to protect their identity and confidentiality both during the initial and follow-up interviews. The focus group discussions took place on the university campus on different days in one of the rooms in the library building at the Unisa Sunnyside Campus, Pretoria. This sub-campus is always frequented by a large number of students because of the availability of a library and other study facilities.

The researcher began each focus group with a preamble that included welcoming the participants, outlining the purpose of the discussion (length, audio-recording, and transcribing), assuring confidentiality, and informing participants that there are no right or wrong answers, rather, their ideas, opinions, and experiences are important for the researcher to hear (Krueger & Casey, 2010). This was done to create a relaxed atmosphere in which they could be able to talk freely. In selecting participants for the focus group interviews, several issues were considered, including, the researcher had to decide whether the focus group should be composed of homogeneous or heterogeneous group. Homogeneous groups share a common background or experience (e.g. all members are first-year students registered for Signature Courses). In contrast, a heterogeneous group can bring together a more diverse set of participants, whose different experiences and viewpoints can stimulate and enrich the discussion. By introducing new ideas and potentially conflicting perspectives, participants may inspire each other to consider the topic under discussion in a different light (Gubrium & Holstein, 2003).

Against this back-drop, the researcher selected a homogeneous group as his research participants. In summary, the most important idea was to include participants who have ideas, opinions, and a full-understanding of the Signature Course curriculum.

Furthermore, these participants would be more comfortable with voicing their views in a group setting. Prior to the discussions, the researcher requested the participants to complete a consent form in which they were agreeing to participate in the study even though they were at liberty to withdraw from the study if they so wish (see Annexure 3). The interview was scheduled to last between forty minutes to an hour at the most. In order to solicit information through the use of a focus group discussion, the researcher designed an interview guide aimed at investigating the experiences and perceptions of first-year students regarding using technology for assessment purposes. The participants were assured that the information collected will be used for research purposes only (See Annexure 5). The researcher started the focus group discussions by explaining the confidentiality of the data to be collected and how the results of the study would be made known to the participants. The researcher designed questions for focus group discussions aimed at soliciting information from first-year student registered for the Signature Courses (See Annexure 5). On the basis of the above, the researcher was able to identify the following important themes: Lack of technical skills and infrastructure for online learning, lack of experience in using online technologies, students' attitudes towards information communication technologies (ICTs), organisational readiness for e-learning. These themes will be discussed in detail in Chapter 4 of this study.

The first focus group discussion conducted was with students from the College of Education (CEDU) who were doing a Signature Course named: Being a Professional Teacher (BPT 1501). In this module students learn what it means to be a professional teacher and how to make a difference in students' lives. They also learn how to create environments conducive for teaching and learning and understand the challenges associated with the curriculum and the learning process. Though it has been previously indicated that the ideal focus group needs to have between 10-12 participants, the researcher decided to use the minimum number of participants required for a focus group discussions to take place which is six participants because it was thought that if the group was too big it would not be able to provide the quality information the researcher needed.

The second focus group discussion was composed of students from the College of Human Sciences (CHS). They were all registered for a Signature Course called Language through an African Lens (AFL 1501). In this course, students are expected to

learn how to interact successfully in a multi-cultural society, including how to demonstrate sensitivity to their own language usage and that of others. The module also gives students the opportunity to learn to interact across cultures with knowledge and respect. The third focus group discussion was students from the College of Law (CLAW) who were doing a Signature Course called: Social Dimension and Justice (SJD 1501). In this course students are introduced to the South African context in which they will have to perform as a future legal and criminal justice functionaries. Students develop a basic understanding of what shapes our legal system, the nature of the South African law and criminal justice system, and how it is applied and administered. The fourth focus group conducted was with students from the College of Economic and Management Sciences (CEMS) who were doing a Signature Course named Sustainability and Greed (SUS1501). In doing this course students have the opportunity to apply selected ethical traditions to contemporary social themes, including sustainability and greed. It is anticipated that through online participation and deliberations, students will develop critical thinking skills and a sense of ethical citizenship.

The fifth focus group interview conducted was with first-students from the College of Agriculture and Environmental Sciences (CAES) registered for a Signature Course named Environmental Awareness and Responsibility (GGH 1501). In this module students learn more about a variety of environmental principles that will assist them in becoming environmentally aware and responsible. Through global case studies they learn how human activities impact on the environment. They are guided in establishing an environmental issue/problem from their vocational field and should be able to demonstrate ways in which they can reduce the negative impact of human activities on the environment. The researcher noticed that by the time the fifth focus group interview was conducted, participants were already repeating what has been said in the previous groups, and as a result, the researcher stopped the interviewing process.

Further, to be completely certain that data saturation had been reached the researcher conducted one more interview with students from the College of Science, Engineering and Technology (CSET) who were doing a signature course named Ethical Information and Communication Technologies for development solutions (EUP 1501). Students who successfully complete this module should be able to present critical arguments around ICTs for development. They learn to appreciate ethical dimensions within an information

society in relation to copyright, intellectual property rights, privacy and general conduct. In addition, students are asked to demonstrate their ability to maintain efficient, organised and secure electronic working environments by managing digital files, systems and application software. They also develop capabilities engaging with textual and numerical data and presenting such information in various formats.

The main purpose of doing the last focus group discussion was to use it as a barometer to check if indeed data saturation has been reached. There were valid reasons why saturation-point was reached. For example, the researcher used the same interview guide across all the focus group discussions because the intention was to get different views from various groups using the same measuring instrument. The researcher resisted the temptation to use different questions on the same phenomenon being studied, because it was feared that there were possibilities of getting responses that could not help to answer the research question and achieve the objectives of the study. Since the interviews were aimed at understanding first-year students' perceptions and experiences of using technology to enhance and influence student assessment and feedback in open distance and e-learning, participants were encouraged to talk freely and tell their perceptions and experiences in their own words until they seem to have exhausted the topic. In order to have a record of what transpired during the focus group discussions, the researcher recorded the conversations using a voice-recorder.

As in the individual interviews, a notebook was kept in which all important ideas which emerged were written. At the end of the interviews, participants were given time to make additional remarks and to comment on how the discussions went. The reason for doing this was to allow the participants to ascertain if the whole interview process had truly captured their personal experiences. At first the researcher did not want to digitally record the follow-up discussions because the researcher thought that all the information needed has been collected as confirmed by the participants. However, the researcher realised that failure to capture experiences and add-on information from the participants during the follow-up discussions would affect his study when a report is to be written at the end of this study, so the researcher did voice recordings of the follow-up discussions.

In analysing these focus group discussions, the researcher discovered that the participants acted as both co-participants and co-researchers because they were

interacting and engaging with each other in the process of sharing experiences on how technology affects and influence student learning and assessment in Signature Courses. During the interviews students described their perceptions and experiences ranging from their lack of experience to use online technologies for learning purposes, their attitudes towards ICTs, lack of technical skills and infrastructure for online learning, organisational readiness, and timely feedback, to mention a few. After conducting the focus group discussions, the researcher immediately transcribed all the digital recordings verbatim in order to form a basis for the study's content analysis. Before embarking on the analysis, the researcher had to make certain that all the focus group discussions were transcribed verbatim and the transcript proof-read. Next, the researcher presented data analysis from both individual and focus group interviews.

3.3.5.2 Data analysis for individual and focus group discussions

In qualitative research, there are a variety of established procedures for analysing data (Bogdan & Biklen, 2003). Generally, these procedures involve converting raw narrative data into partially processed data (e.g., transcripts), which are then coded and subjected to any one of a number of analysis schemes (e.g., key theme analysis, constant comparative). Data analysis is a systematic search for the meaning contained within the data as related to the research concerns, and it involves organising what has been seen, heard, and read so that sense can be made of what is learned or investigated (Glesne & Peshkin, 1992). Bogdan and Biklen (2003:145) define qualitative data analysis as “working with data, organising it, breaking it into manageable units, synthesising it, searching for patterns, discovering what is important and what is to be learned, and deciding what one will tell others”. Merriam (2009) contends that data collection and data analysis must be a simultaneous process in qualitative research. Constatas (1992) argues that researchers should describe their methods of analysis and identify the origin of categories. Researchers are expected to reflect on how they come to know what they know, and the chronicle of one's thinking contained in a research notebook potentially facilitates such awareness. Creswell (2009) claims that qualitative data analyses primarily entails classifying things, persons, events and the properties which characterise them. Typically, throughout the data analysis process qualitative researchers index or code their data using as many categories as possible (Merriam, 2009). They seek to identify and describe patterns and themes from the perspective of the participant(s), then attempt to understand and explain these patterns and themes.

During data analysis data are usually organised according to categories, taking care to keep to a chronological order. They are also reviewed several times. During this phase, a list of major ideas that surface will be chronicled, as suggested by Merriam (2009). The purpose of data analysis is to find patterns in the data, including themes, relationships, and convergence of interpretations of experiences from one informant to another (Van Manen, 1997). A research design utilising a qualitative inquiry approach should be able to collect descriptions while preserving the spontaneity of subjects' experiences (Giorgi, 1989a:39). Further, people who have experienced the reality of the phenomenon being investigated provide the only legitimate source of data through which the researcher can access this reality (Thorne, 2000:68). The process of qualitative data analysis involves making sense out of the discussions that form the data. It involves preparing data for analysis, conducting different analyses, moving deeper and deeper into understanding the data, and making an interpretation of the large meaning of the data (Fouché & Delpont, 2002).

In basic qualitative inquiry data analysis is a continual process that begins after the first interview is conducted, the first observation completed, or the first document is collected and continues throughout the study to ensure that no information is overlooked that might be critical to answering the research question and the research objectives (Giorgi, 1989b:71; Creswell, 2009). In a qualitative research inquiry data analysis begins with a description of the researcher's experiences of the phenomenon (Cohen, Manion & Morrison, 2007). If the transcript is from an interview, it is helpful to listen to the audio-recording at least once while first reading the transcript (Collaizi, 1978). Furthermore, Giorgi (1989b:71) suggests that readers should see the raw data as well as the processed data. The first step of qualitative analysis involves immersing oneself in some of the original data as suggested by Kvale (1996:3) when he posits: "When travelers return home from their conversations with people they met, their tales may enter new conversations with the research community and the general public."

Guided by Kvale's (1996) analogy, the researcher analysed the gathered data based on the interviews conducted with the participants. Prior to describing the analytical procedure of the dataset, the researcher made a brief description of how he embarked on the process of data collection and the transcriptions of the interviews. Transcribing interviews from an oral to a written mode structure is in itself an initial analytical

process. To analyse the data the researcher followed the essential processes that characterise a qualitative inquiry analysis as described by Collaizi (1978:48), Kvale (1996:171), Giorgi and Giorgi (2003:249). The researcher's first analysis emanated from the individual interviews conducted with lecturers responsible for teaching undergraduate Signature Courses at Unisa. The researcher's second analysis came from the focus group discussions conducted with first-year undergraduate students doing Signature Courses. Before analysing the data the researcher ensured that all the interviews were digitally audio-recorded and transcribed verbatim. As previously mentioned in the preceding sections, the researcher kept a notebook as a back-up to the audio-recordings. Guided by Collaizi's (1978) thematic data analysis framework, the steps used to analyse data for this study are presented:

- **Reading the interview transcription to obtain a sense of the whole**

In this study, the researcher personally conducted each of the interviews, which helped made it possible for him to gain a sense of the whole experience of each participant. The researcher initially listened to the audio-recordings a number of times in order to get a clear picture of the participants' experiences. Further, each transcription was read several times to get a feeling of what is contained in them or to get a sense of the whole transcription and to become more familiar with the words and the order in which they had been spoken. The researcher tried to remain true by engaging with the words of the participants, and did not make any attempt to interpret the meaning of what the participants said. Collaizi (1978) advocates that the researcher should read and listen to the participants' narratives of their own experiences regarding the phenomenon under investigation.

- **Identifying and extracting significant statements from field texts**

This stage was achieved by reading and re-reading the transcripts and then identifying areas of the interview which highlighted the participants' experiences and perceptions in relation to the topic being investigated. After reviewing the interview transcripts several times, the researcher then broke the whole transcription into several parts in order to determine the meaning expressed in every word relating to the experiences. For every significant statement extracted, the researcher formulated meanings based on the participants' experiences. Once the units had been isolated, the researcher indicated, in

a clear, simple manner, the theme which dominates each unit. Although there are a number of computer programmes that researchers can utilise for data analysis purposes, in this case the researcher chose to analyse and extract significant statements manually. The main themes and sub-themes which emerged from the data were: technology-enhanced learning, student engagement, student feedback, lecturers' and students' attitude towards ICTs, lack of experience to use online technologies, workload, time constraints, lack of technical skills and infrastructure for online learning, and organisational barriers. These themes are elaborated in detail in Chapter 4 of this study where findings of the study are discussed.

- **Formulation of meanings from significant statements**

Immediately after the reading and re-reading of the transcription, codes and quotes were organised into common categories of themes (see study results in Chapter 4). A summary that incorporated all the themes elicited from the data provided a holistic context. Further, this process involved transcribing the interviews that were digitally recorded through the use of a voice-recorder. Therefore, this stage of data analysis involved looking at both the natural units and the central themes. When the researcher repeatedly asked the research question, it was found that the same points were arising on a number of occasions. As a result, a number of important themes from all the transcripts emerged.

- **Meanings are categorised into clusters and themes**

Immediately after all the formulated meanings were sorted into clusters of themes, the process of grouping all these formulated meanings into categories was initiated. Relevant codes were clustered together according to their meanings to consolidate their expression of the experiences into themes. After that, groups of clusters of themes that reflected a particular issue were incorporated together to form a distinctive construct of themes. For the purpose of this research study, an example of interpretive process is illustrated for the emergence of the categories in Chapter 4.

- **Description of individual and general experiences**

In the fifth stage of analysis, Colaizzi (1978) advocates that the researcher should integrate all the ideas into an exhaustive description of the same phenomenon. In relation to this study, the exhaustive description was presented as a descriptive account, and contained all the dimensions of the lived experiences as they are told by the participants. This step is similar to step four above, however, the difference is that no exhaustive meanings were sought. In this step a reduction of findings was done in which redundant, misused or overestimated descriptions were eradicated from the overall structure. At this stage the researcher applied some amendments to generate clear relationships between clusters of themes and their extracted themes, which included also eliminating some ambiguous structures that weakened the whole description.

In order to understand lecturers' experiences and perceptions of student assessment in open distance and e-learning, the researcher had to move from individual structure to the general description of situated structures. It is through this process that the researcher was able to identify several themes from each participant and then cluster them into a number of general themes that appeared to be common to all the participants' descriptions. From the textural and structural descriptions an integration of the meanings and essences of the phenomenon was constructed. This included making use of verbatim examples from the transcribed interviews.

- **Describing the structure of the phenomenon and returning to the participants**

Colaizzi (1978) suggests that the final validation stage of data analysis in qualitative research should involve returning to the participants for a further interview, to elicit views on the essential structure of the phenomenon to ensure that it represents their perceptions and experiences. However, Colaizzi (1978) encourages the researcher to take the exhaustive description back to the participants for validation. The researcher felt that it was important to involve the participants at this stage of analytical process in order to allow them to validate their experiences by sending them a copy of the transcript with a comments sheet to return if they felt they wanted to add anything. The feedback received demonstrated that all the participants agreed with the interview

transcript as it represented what they had said during the interviews and was true to their experiences. Their comments are presented as part of the findings in Chapter 4 of this study (See section 4.4). To validate or achieve the trustworthiness of the study findings, the following strategies were used: credibility, confirmability, transferability, dependability, member-checks, peer-debriefing, methodological triangulation, and ethical considerations. Individual and focus group interviews were used because they were regarded as the most suitable methods for answering the research questions.

3.3.6 Data collection methodology (Phase 2 – quantitative research)

The researcher used exploratory mixed methods research approach to understand Unisa lecturers and first-year students' experiences regarding technology-enhanced assessment in ODL contexts. The study made use of individual and focus group discussions because they suited the aims and objectives of the study. The researcher also opted for the questionnaire survey because it was relatively economical, had the same questions, and ensured participants' anonymity. According to Punch (2005), Johnson and Christensen (2008), a questionnaire survey aims to discover information which includes background and biographical information, knowledge and behavioural information. The questionnaire used in this study covers measures of technical skills and knowledge of ICT, attitudes, values, opinions, and beliefs regarding their understanding of ICT use to enhance and influence student assessment in open distance learning contexts. In this questionnaire survey, participants were required to respond to the statements by selecting any answer of their choice from the alternatives given (see Annexure 6 attached).

In order to encourage a quick and reasonable response rate from the participants, the researcher made sure that participants were provided with an electronic version of the questionnaires. Further, it was easy for the researcher to get hold of the participants since they were identified when focus group interviews were conducted. Descriptive statistics and a frequency table summarising participants' responses to the questionnaire items can be found in section 4.7 and in Annexure 6, respectively.

3.3.6.1 Data collection using a questionnaire

Although the main methodology used to conduct this study was qualitative in nature, the researcher also used an anonymous questionnaire with Unisa first-year Signature Courses students to triangulate the findings obtained using focus group interviews. The questionnaire used enabled the researcher to gather responses from a larger sample relatively quickly and at a lower cost. According to Cohen et al. (2007), an anonymous questionnaire is believed to be an appropriate tool for enabling students to explain in their own words what the topic means to them. The survey instrument was distributed using an online delivery system since the Signature Courses are fully online. This online questionnaire containing a total of 30 variables was distributed to 105 first-year students who were registered for Signature Courses. In this questionnaire survey, the researcher was interested in knowing or understanding first-year students' experiences, perceptions, attitudes and beliefs towards the use of technology as a tool to enhance student assessment and feedback in Unisa's Signature Courses. Before administering the survey instrument (questionnaire), a three-stage process was instituted to assess its validity and reliability. This was done in order to ascertain if the instrument would be able to assist in achieving the objectives of the study. The survey instrument invited participants to take part in a series of follow-up interviews.

3.3.6.2 Analysing the questionnaire survey

Data analysis in quantitative and qualitative research typically includes one or more approach depending on the nature of data and research question. Within quantitative studies, two basic approaches are commonly used: (a) descriptive statistics for summarising information, and (b) comparative statistics for examining differences between groups and /or relationships between variables (Babie & Mouton, 2001). From the total number of 105 questionnaires distributed, only sixty (60) were returned for analysis. The questionnaire data was analysed using a Statistical Package for Social Sciences (SPSS) program version 23. Initially the questionnaire had a 5 Likert scale but during data analysis the clusters were grouped into three scales so as to accommodate analysis. The results of this data collection strategy have illustrated how the questionnaire and interview data complemented one another. The questionnaire data produced descriptive information that concurred heavily with the results that emerged from focus group interviews. The preceding analysis demonstrates how questionnaire

and interview data were used together to explore lecturers' and students' experiences in a distance education context. This analysis also illustrates that the two approaches produced richer insights about the participants' views regarding the phenomenon under study. The findings of this analysis are discussed in detail in Chapter 4 of this study (Section 4.7).

3.4 STUDY TRUSTWORTHINESS

In qualitative research, trustworthiness has become an important concept because it allows researchers to describe the virtues of qualitative terms outside of the parameters that are typically applied in quantitative research. One of the biggest concerns that the researcher had was the issue of this study's trustworthiness. Conostas (1992:253) argues that researchers should make all aspects of their analysis open to public inspection. In considering study trustworthiness in any qualitative inquiry, there is a need to determine whether the study is believable and accurate, and whether it is useful to people beyond those who participated in it (Maxwell, 2005). Assessing the accuracy of qualitative findings is not easy. However, there are several possible strategies and criteria that can be used to enhance the trustworthiness of qualitative research findings.

Trustworthiness is the corresponding term used in qualitative research as a measure of the quality of research. It is the extent to which the data and data analysis are believable and trustworthy. This necessitates a consideration of the concepts of validity, reliability and generalisability. However, according to Lincoln and Guba (2000:143), the customary evaluation criteria of validity, reliability, generalisability, and objectivity in quantitative research are not applicable in qualitative inquiry. Lincoln and Guba (2000) suggest that for qualitative inquiry to be trustworthy the four concepts namely, credibility, transferability, auditability and confirmability should work together. In the present case however, trustworthiness was achieved by using the following methods: credibility, confirmability, transferability, dependability, member-checks, peer-review, methodological validation, and ethical considerations (Lincoln & Guba, 2000).

3.4.1 Credibility

Credibility in qualitative research is defined as the extent to which data and data analysis are believable and trustworthy. Credibility refers to the degree to which a

study's findings represent the meanings of the research participants (Lincoln & Guba, 1985:15). A study is said to be credible when it presents faithful descriptions, and when readers or other researchers confronted with the experience can recognise it. Credibility is used to consider how well the participants of the research are accurately identified and described (Drisko, 1997:191; Lincoln & Guba, 2000:143). Credibility evaluates whether or not the representation of data fits the views of the participants studied; whether the findings hold true (Denzin & Lincoln, 2008:147). Qualitative research is valid to the researcher and not necessarily to others due to the possibility of multiple realities. It is upon the reader to judge the extent of its credibility based on his/her understanding of the study. From an interpretive perspective, understanding is co-created and there is no objective truth or reality to which the results of a study can be compared. In this study, the inclusion of member-checking into the findings, that is, gaining the much needed feedback on the data, interpretations and conclusions from participants themselves, is one method that was used to increase credibility. Although it has its own limitations, Lincoln and Guba (1985:314) consider member-checking into the findings as "the most critical technique for establishing credibility."

3.4.2 Confirmability

Confirmability refers to the adequacy of information reported from the research question and protocol for data collection, through the raw data, through various stages in the analysis of data, to the interpretation of findings. One of the ways research can be shown to be sound is for the research process to be clear, so that another researcher can understand the methods and process of the researcher and research. Both dependability and confirmability are established through an auditing of the research process. In order to make auditing possible by other researchers, it is advisable that the researcher archives all collected data in a well-organised retrievable form so that it can be made available to them if the findings are challenged. To increase the reliability of the study, the researcher provided an audit trail of how data was collected from the participants (Denzin & Lincoln, 2008). This was followed by the researcher's disclosure of his personal orientation and context. This exercise was done because the researcher did not want the outcomes of his research to be contaminated or influenced by his personal biases regarding the phenomenon under investigation. Further, the researcher increased the reliability of his data by having intensive engagement with the material and iteration between data and interpretation. In addition, a research notebook was kept

throughout the data collection and analysis stages. This notebook became a valuable tool when the researcher started with the process of condensing information from the lived experiences of the participants so that the findings of the study could be written. Aside from the methodological steps provided in this study, the notes were written during the interviews and analysis processes. Since the researcher used individual and focus group interviews which were explanatory in nature, and one that was captured on a voice recorder which is playable over and over again to ensure authenticity of the findings, it was thus anticipated that a high level of validity would be achieved.

3.4.3 Dependability

Secondly, Lincoln and Guba (1985) use the notion of dependability which is claimed to parallel the idea of reliability in quantitative research. Reliability means that if the research were to be conducted again, then similar results would be produced. Of course, a social constructionist perspective would argue against the possibility of doing the 'same' research again because researching the issue the first time would have unavoidably changed things so that the second round of research would unavoidably produce different results. Reliability relates to validity just as dependability relates to credibility in that research could be seen as dependable (or reliable in quantitative terms) but produce not very credible (or valid) results. Clearly if the research does produce credible (or valid) results, then it is more likely that the research is dependable (or reliable).

3.4.4 Transferability

Transferability implies that the results of the research can be transferred to other contexts and situations beyond the scope or confines of the actual study context. 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 (Creswell, 2011). Transferability is regarded as 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. To increase transferability, qualitative researchers should focus on two important

considerations: (1) how closely the participants are linked to the context being studied, and (2) the contextual boundaries of the findings.

Further, qualitative researchers can use two strategies to increase transferability of a study. The first is through thick description (Collaizi, 1978). Thick description means that the researcher provides the reader with a full and purposeful account of the context, participants, and research design so that the reader can make their own determinations about transferability. The second methodology is through the use of purposeful sampling. Here, participants are selected because they most represent the research design, limitations, and delimitations (Lincoln & Guba, 1985). To achieve a high degree of transferability in this research study, the researcher provided a detailed description of the context in which the study was undertaken in order to provide the reader with sufficient information so that he/she could be able to make informed decisions about the applicability of the findings to other settings that they know. Therefore, it is a requirement that the researcher documents and justifies the methodological approach, and describes in detail, the critical processes and procedures that have helped him construct, shape and connect meanings associated with the phenomena being investigated.

3.4.5 Member-checking

Member-checking, also known as member-validation can be described as a research phase during which the provisional report is taken back to the site and subjected to the scrutiny of persons who provided the information (Lincoln & Guba, 1985:236). Letting participants speak for themselves was a way to show readers what the researcher had found. Lincoln and Guba (1985) described member checking as an optimal means of assessing the validity of a qualitative study because the first step of many qualitative projects is to accurately understand the participant's worldview. During this process, the persons who provided information are able to determine if the researcher has accurately reported their stories. Furthermore, participants can be seen as functioning as the researcher's conscience to assist with researcher reflexivity (Creswell, 2009). By being told that they have told the story incorrectly, researchers are given the opportunity to reflect on their own biases and other sources of misinterpretation. In this process, the participant is provided with relevant sections of a research report and is invited to comment on the accuracy of the report (Koelsch, 2013). During the planning phase of

the interview processes an interview guide document was designed in which the aims, objectives, and questions that all my participants were to answer were included (see Annexures 4; Annexure 5).

Prior to the member-check interviews, all the participants were requested to read the transcription in order to check if the researcher had vividly and accurately portrayed their experiences and perceptions. Apart from answering the questions, the researcher expected the respondents to express their opinions about the questions, in other words participants were to check whether a true and authentic representation was made of what he or she conveyed during the interview. To complement the transcription, the researcher provided them with the voice recordings of the interviews conducted with them. Further, the researcher informed the participants that they could alter the transcription from the interviews if there was need to do so. The member check interviews were semi-structured and began with a general inquiry into the accuracy of the transcription. Specifically, the researcher asked if he had managed to portray their stories accurately. Next, the researcher asked if they felt that the transcription treated them fairly and respectfully. Finally, the researcher asked if the participants had anything else they would like to tell which they were unable to say during the first interviews. After presenting the interview transcripts and voice recordings to the participants for their review, most of them agreed that indeed the transcription was a true reflection of what they said. However, there were some participants who did not confirm or agree if indeed the experiences reflected in the transcriptions concur with what they told the researcher. To deal with this challenge, the research did not include their experiences in the research report.

3.4.6 Peer-debriefing

There are six major types of debriefing in qualitative research: peer-debriefing, debriefing the participants on completion of the study, debriefing the gate keeper, debriefing among multiple researchers involved in the same study, debriefing the focus group moderators, and a new type of debriefing involving debriefing the researcher. Peer-debriefing, also called analytical triangulation, is the process whereby a researcher calls upon a disinterested peer, a peer who is not involved in the research project, to aid in probing the researcher's thinking around all or parts of the research process (Given, 2008: 213). Through peer-debriefing, the researcher attempts to keep her or his bias out

of the study. Furthermore, peer debriefing can motivate the researcher to delve deeper into the data so as to understand more fully the participants' perspectives. Another purpose of peer debriefing is to resolve methodological issues. This probing includes, but is not limited to, methodology, interpretation, and analysis of data. Denzin and Lincoln (2000:147) maintain that peer-debriefing increases "the credibility of a project." Further, they point out that peer-debriefing helps focus on the correctness and accuracy of research interpretations and conclusions, guards against researcher-bias, provides evidence of collaboration of stakeholders, and enables distribution of findings. Lincoln and Guba (1985) describe four areas important to peer-debriefing. First, it helps restrict bias in the interpretation of information.

Second, peer-debriefing allows the researcher the opportunity to develop new ideas with a peer. In this study the researcher made use of peer-debriefing to enhance the credibility of his research study by engaging the services of two experienced researchers to review the relevance of my interview data and provide a check against my biases as a researcher. Before the peer-reviewers were used, the researcher took time to orient them to the research and data. To achieve this, the researcher regularly met with the peer-reviewers in person for necessary probing, questioning, and considering opinions that could be misinterpreted through the use of phone call and emails. Face-to-face meetings promoted a collaborative environment that was essential for establishing report and role clarifications. Through peer-debriefing the researcher was able to reflect on his own thoughts, epistemology and subjectivity. The researcher became aware of all the potential influences and was able to step back and take a critical look at his own role in the study. The most important goal of being reflexive was to improve the quality and validity of his study and recognise the limitations of the knowledge that is produced, thus leading to more rigorous research. It was through peer review that the researcher came to understand better how he should go about conducting his individual and focus group interviews. This is something the researcher would not have known had he not engaged the services of these colleagues.

3.4.7 Ethical considerations

This study was conducted in accordance with all the requirements of ethical considerations. A number of ethical matters were considered during the data collection process. These were, amongst others, informed consent, right to withdrawal without

penalty, confidentiality and anonymity, lack of deception, security and safety to prevent any emotional or physical harm (See Annexure 3). Further, the researcher applied for an ethical clearance certificate from the university's Ethical Committee (see Annexure 2). To promote a sense of privacy, safety and confidentiality among the participants, the survey did not collect any identifying information, such as participant names, email addresses or even physical addresses which could compromise anonymity. In cases where participants' names were used the researcher made sure that participants were assigned pseudonyms to maintain confidentiality. Those participants who agreed to take part in the study were given a consent form to append their signatures as a sign of agreeing to the terms and conditions of the research study (see Annexure 3). Participants were also allowed to review and confirm or alter the research data to correspond to their perceptions of the phenomenon being studied. Finally, an undertaking was made to make sure that the information provided by the participants was used for research purposes only.

3.5 CHAPTER SUMMARY

This chapter has explained the choice of research paradigm, research methodology and design. This was an interpretive research study whose theoretical underpinnings were largely based on social constructivism which puts emphasis on the understanding that meaning is constructed by individuals using language resources provided by culture and affected by the cultural and personal history of the individuals involved. A sequential exploratory mixed methods research inquiry was used as an approach to unmask the experiences of lecturers and first-year students regarding assessment practices at Unisa, a single mode distance education institution. This study used individual and focus group discussions to solicit information from key participants, namely, lecturers and first-year student. Purposeful sampling was utilised to select participants in the study. Further, the study used a quantitative research instrument (questionnaire survey) to triangulate or confirm if the findings or results obtained through the use of a qualitative approach (focus group discussions) concur with those from focus group discussions. The inclusion and exclusion criteria for data collection, sample description and methods for data analysis and interpretation were clearly presented. Various approaches, including ethical considerations were taken into account to ensure the trustworthiness of the study. Findings from the two mixed methods research used

(qualitative and quantitative) in this study are presented in an in-depth manner in Chapter 4 of this study.

CHAPTER 4

PRESENTATION OF THE FINDINGS AND DISCUSSIONS

4.1 INTRODUCTION

This study, using an exploratory mixed methods research (qualitative and quantitative), examines lecturers' and first-year students' experiences, perceptions, attitudes, and beliefs regarding the use of technology as a tool to influence assessment and feedback practices in open distance and e-learning contexts using Unisa's Signature Courses as a particular example. Presently, there is a gap in the literature on how Unisa lecturers and first-year students perceive and understand the use of technology for teaching and learning, and how technology affects and impacts on assessment in Unisa's Signature Courses. In this research the researcher has recorded lecturers' and first-year students' experiences regarding the use of technology as a tool that enhances student assessment in ODL contexts. This chapter presents findings sourced from individual and focus group discussions.

Second, the study used a questionnaire survey to triangulate the findings that emerged from as a result of the focus group discussions. This chapter therefore, reports on the results of the data-gathering approaches used to collect data in order to provide a more comprehensive picture of Unisa lecturers' and first-year students' experiences, perceptions, attitudes and beliefs regarding assessment practices. The results of these interviews, together with the research performed into digitised assessment practices, will feed into the overall purpose of the study which is to establish and develop an assessment framework that can be used to enhance student learning in ODL environments. As outlined in the previous chapter, the researcher locates the findings of this study within an interpretive social-constructivist paradigm. In this study the researcher utilises Heidegger's (1982) and Husserl's (1981) descriptive-interpretive approach because it has the potential to allow the researcher to identify the essence of human experiences about a phenomenon, as described by participants, on the understanding that meanings are not directly available to us but are interpreted. In Heidegger's (1982:119) view, basic qualitative inquiry starts with "things as they are experienced, with other people as we are related to them and with the way people live."

Heidegger (1982) showed that our primary relationship with things is through experiences and that every form of human awareness is interpretive. The study population for this study is Unisa lecturers and first-year students who were involved in the Signature Courses. In this study participants were selected by using purposive and snowballing sampling procedures (Denzin & Lincoln, 2000; Booth et al. 2008). The researcher applied for the permission to conduct interviews with both Unisa lecturers and first-year students. The ethical clearance was granted by the office of Vice Principal: Research and Innovation. After being granted the ethical clearance, the researcher requested all the participants to sign a consent form in which the participants declared that they were participating in the study voluntarily and that they understood the purpose and objectives of the study (see Annexure 3). Both the researcher and the participants signed a privacy binding form aimed at keeping all the information provided confidential and used solely for research purposes. To solicit those experiences the researcher designed an interview guide (see Annexure 4; Annexure 5, and Annexure 6). This study therefore, presents the findings which emerged as a result of the individual and focus group interviews. Furthermore, the study also presents the results from a questionnaire survey completed by students.

4.2 PRESENTATION OF THE FINDINGS FROM INDIVIDUAL AND FOCUS GROUP DISCUSSIONS

As previously mentioned, this is an exploratory mixed methods research project aimed at unmasking Unisa lecturers' and first-year students' experiences of using technology to enhance student assessment in ODL contexts. In this study, relevant literature was also used to support, compare or highlight important points and relevant issues in order to ground or locate the study in interpretive social-constructivist paradigm. The basic outcome of the methods used was the description of the meaning of an experience through the identification of themes and sub-themes that emerged from the data. What follows next is a discussion of the study findings from individual and focus group interviews sourced from Unisa lecturers and first-year students. The findings presented here were also triangulated through the use of a questionnaire survey to be discussed in detail in the latter sections of this chapter. These individual and focus groups interviews were aimed at understanding participants' experiences, perceptions, attitudes and beliefs regarding the use of technology as a tool that could be used to enhance student assessment in ODL.

As mentioned in Chapter 3, this study uses Collaizi's (1978) thematic data analysis framework, but also incorporates some key stages of framework analysis described by Ritchie and Spencer (1994). The rationale for using Collaizi's (1978) thematic data analysis framework was the fact that it provides a series of steps, which guide researchers in managing the complexity and amount of qualitative data. All the participants who took part in the study were divided into groups where they were allocated numbers to identify them. For example, participants were identified as P1, P2, or P3, etc. On the basis of the analysis conducted, the researcher was able to identify the following important themes: Access to information communication technologies (ICTs), lack of technical skills and experience in using online resources, lecturers' and students' attitudes towards information communication technologies (ICTs), and organisational readiness for e-learning. Next, themes and quotes from selected participants are followed by a discussion of the raw data together with excerpts or verbal quotations which are briefly highlighted in the text.

4.2.1 Theme 1: Access to ICTs

The issue of ICTs has been highlighted in the chapter containing the literature review (Chapter 2). The first theme that evolved from the individual and focus group interviews was the issue of access to technology. In Chapter 2 of this study technology was defined as methods and materials which are relatively machine-dependent and which include the following: computer software packages; computer assisted learning (CAL); computer-based learning materials (CBL); networks; video; hypertext; hypermedia; simulation; multimedia; scientific visualisation and virtual reality. Further, it was also briefly mentioned in Chapter 2 of this study that an important driver of ODL success is access to and the effective utilisation of ICT by the institution and the ability of students to engage with such ICTs to enhance learning. The use of technology for educational purposes has always been at the forefront of most cutting-edge ODL systems. Technology-supported teaching and learning has helped enormously in overcoming the physical distances between teachers and students, enabling the flexible delivery of education at a distance, anyplace, anytime. On engaging the participants on this issue, participants revealed that technology has become a game changer in distance education. This study found that a number of influences have brought assessment and feedback to the forefront of institutional and educational agendas, resulting in an increasing imperative to enhance assessment and feedback practices through

technology (Duncan, 2007). Further, literature has shown that technology is filtering into assessment and feedback practices. For instance, the introduction of the Signature Courses curriculum paves the way for students to become computer literate and technologically savvy, enabling them to operate effectively and efficiently in an online environment (see also Davies, 2003; Hatie & Timperely, 2007). The study revealed that currently Unisa is investing in ICTs making it theoretically possible for students and lecturers to interact and bridge the gap that currently exists between the lecturers and the students, students and the institution, and the students and their peers. Participants demonstrated that digital technology has completely changed the way teaching, learning and assessment are managed in open distance and e-learning contexts. For example, P1 explains how teaching and learning have been affected by technology affordances:

... These days it looks like technology is a buzz word in distance education. It's like there is a tsunami. Previously we used to send learning materials to our learners using hard copies, but that is now changing because of these emerging technologies. There is no way that teaching and learning cannot be affected by technologies. If teaching and learning are affected by technologies consequently this will also affect assessment practices. Now you can download learning materials the same day you register. What a change?

The explanation given in this extract is very significant because the proliferation of technologies is seen as a powerful and irresistible force which is happening rapidly. There is a sense that the phenomenon (in this case the arrival of information technology compared to a tsunami) is unstoppable. The researcher is interested in the above quotation because it clearly shows the growing perception that the move towards the use of the new technologies is inevitable in the teaching-learning processes. By implication, this also suggests that those who do not adopt the use of these technologies will eventually find it difficult to continue teaching in this digital age. When interpreting how this tsunami (technology) is going to affect lecturers, it seems obvious that lecturers need to become digitally competent so that they are able to teach in this technology-enhanced environment. It should be noted that the success of any initiative to implement technology in any educational programme depends on the support and attitudes of lecturers involved, so gaining an appreciation of the lecturers' attitudes

towards ICT use may provide useful insights into computer technology integration and acceptance and usage in teaching and learning (Czerniewicz & Brown, 2009). Another participant indicated that for one to be able to work in an online platform one needs to be digitally savvy, that is, one must have skills and knowledge to operate a computer with ease. The following quote expressed P2's sentiments:

... If we did not attend all the workshops on to how to integrate technology in our teaching pedagogy we should have been experiencing a lot of problems now. Look now, we are able to interact with our students online anytime anywhere.

The participants also revealed that access to ICT is becoming an increasingly important link between student learning and student success as the university is moving towards an ODeL model of teaching and learning (digital learning). This issue was emphasised during the "Unisa is changing" campaign between 2011 and 2012, which was meant to inform the public and other stakeholders Unisa's shift towards online teaching and learning (Unisa, 2015). Another important aspect that emerged through this sub-theme was the issue of using technology to conduct non-venue based examinations. The use of non-venue based examinations has the potential to ease student overcrowding during examination times and improve the efficiency of summative assessment. P4 indicated the ways in which non-venue-based examinations could solve some of the assessment problems that Unisa is currently experiencing:

... I should have mentioned that when examination times come our institution finds it very difficult to deal with this large number of students who come to sit for their examinations. It is then that one thinks of what I call non-venue based examinations. If all our students were having computers, and were connected to the internet, they were going to write their examinations at home and this was going to solve the problem of over-crowding at the examination centres around the country. Further, the university will save a lot of money since there will be no need to budget money to pay the invigilators.

As a result of summative assessments which are venue-based, in the 2014 academic year, there were 652 cases of students who were found guilty by the Student

Disciplinary Appeals Committee (SDAC) for either cheating or having brought illegal materials into the examination rooms when they were writing summative examinations. In the 2015 October-November examinations, there were 44 students who were suspended at Unisa for committing offences ranging from cheating during examinations to falsifying their identities. Listening to these students' reasons for why are they involved in cheating during examinations, most of them indicate that they have pressure exerted on them by summative assessment.

In order to address this challenge, Unisa is exploring the use of alternative assessment because it has been found that the current summative assessment has some flaws as it affects the integrity of the examination processes (Baijnath, 2014a/b). It is interesting to note that through alternative assessment, the university is contemplating strategies which will include among others self-assessment, portfolio assessment, peer-assessment, group assessment, and non-venue assessment (Unisa Alternative Assessment, 2015). Since writing examinations at a specific venue involves several complex logistical arrangements, using non-venue-based examinations is an obvious advantage for the institution. However, the sub-theme revealed that non-venue based examination has its pitfalls. For example, during examination times it is critical to establish whether the person writing the examination is verifiable as the person registered for the course. Again, there is a possibility that non-venue based examinations could encourage students to cheat because of the absence of an invigilator. It was revealed by the participants that for non-venue based examinations to achieve their objectives, specific technologies must be in place in order to mitigate this possibility.

... If Unisa provides the technical infrastructure and support staff, it would be easy for us to write all our examinations at home. It is just unfortunate that as a University we are still facing some challenges that need a lot of money to be addressed. I'm positive that we shall end-up getting there since technology is the way to go.

In the Signature Courses context, the emphasis is on trying to encourage students to work with each other when doing their assignments. Currently, Unisa is benchmarking its assessment practices with those of other world-known distance education universities like the Open University of the United Kingdom, Athabasca University in

Canada, Indira Gandhi National Open University, etc. Another participant identified as P3 shows the importance of technology and how it promotes student-lecturer interaction:

... Students post their assignments using the myUnisa student portal and we are expected to mark them online, meaning that technology is sort of reducing the wasted time of going to the post, it is economical because we do not print papers and assignments do not get lost.

One of the participants identified as P5 indicated that the MyUnisa student portal plays an important role because that is where TAs and students interact with each other. This is how he put it:

... Through myUnisa, teaching assistants link-up with all students in a particular course or module. In this way, students are able to help one another and are able to communicate (as individuals or as a group) with their tutors at any given time. Furthermore, students are able to form study groups, and can also motivate and advise one another. Therefore, students have the opportunity for engagement with the university and one another through this technological facility.

In the context of the Signature Courses pedagogy, the TAs are linked-up with their allocated groups of 50 students. The main reason for dividing the students into small groups of 50 is to make sure that the TA is able to interact with the students easily unlike when the group is too big to control (Baijnath, 2014a/b). However, the myUnisa portal is also used in other modules that are not online but only as a tool to make announcements to inform students about assignments due dates, time-tables, etc. The findings in this section show that lecturers are in the main favourably disposed to using digital technologies to assess students. However, some of them are still under the impression that their students have difficulties in accessing appropriate technological devices and access to internet. While it is crucial that support services are made as accessible to students as possible, there is need to make sure that technology does not become a substitute for the face-to-face support services that provides vital help for students throughout their academic journey. Furthermore, these individual and focus group interviews identified access to a computer and to Internet connectivity as

explanatory variables for student success. The interviews revealed that students who have their own computers and access to an Internet connection stand a better chance of doing well in their examinations than those students who had to access computers and Internet from other sites. For example, the study found that majority of Unisa students come from disadvantaged and marginalised communities that do not have readily available Internet access. Despite this, participants indicated that technology has completely changed the way teaching and learning takes place in distance learning. Another participant identified as P10 made the following comment regarding accessibility to technological infrastructure:

... The area in which I live does not have technological infrastructure like electricity, we depend on generators to supply us with power, and secondly, we do not have centres where we can access the internet. For one to access Internet we have to travel for about 20 kilometers.

From the above statement, the focus group discussions revealed that students are faced with infrastructural and technical challenges that are beyond their control. The students surveyed in this study firmly believe that access to ICTs has a significant role in supporting and enhancing their learning experiences. Most of the participants who participated in this study believe that they see the use of ICTs as potentially going well beyond the use of the Internet to search for resources and the use of email to stay in touch with lecturers and fellow students as indicated in this comment by P22:

... I believe that internet helps a lot as it makes it easy for me to search for information that I need to do my assignments. ICT has more advantages over books because I can access more up-to-date information faster than that found in text books.

Further, this study found that students' current use of email and the Internet to support their studies is clearly high. It can be seen from the data obtained that a high proportion (90%) of the students surveyed use email as a basic form of networked learning. Students also clearly valued the speed with which factual questions could be answered using Internet for learning purposes as shown in this comment by P13:

... Before I start with any of my assignment or project, I use the Internet to search for information that could be of use to my topic. Using the Internet makes searching for information very easy since I have the opportunity to use all the search engines available.

It also emerged during the interviews that students who do not have access to laptops or desktop computers are now reliant on the use of their personal mobile phones, particularly smart phones to access the Internet. On this basis, institutions of higher learning should explore the use of mobile technologies on the understanding that this technology has the potential of expanding educational opportunities for disadvantaged and marginalised students in making information readily available. The use of mobile technologies for education has empowered more people in South Africa because it has the ability to connect less privileged people to information as part of a wireless infrastructure. To underscore the importance of mobile phones for distance teaching and learning P35 made the following comment:

... When I registered for Signature Courses, I didn't know that one should have a computer with internet connectivity so that one can be able to work online. Fortunately, I used my smart phone to access internet.

Mobile devices such as Internet-enabled phones are very popular and are increasingly being used for blogging and social networking; this, in turn, helps improve user attitudes towards online learning. Students prefer to carry mobile phones in terms of Internet access because they are portable and easily accessible. Further, the interviews revealed that most students have invested a great deal of time learning about the features of the mobile phones, how to navigate them, as well as the limitations of the phone. Smart phones are currently being used for learning purposes because they consist of numerous educational applications that enable one to access information while on the move. However, the participants revealed that there are challenges that are associated with mobile smart phones such as the relatively small screen that makes reading awkward, and a limited memory. Currently, students are relying on their smart phones to access Internet anywhere, and anytime. The preceding statement is supported by P33:

... My smart phone has helped me when my computer was out of order and even when there was no we power. If I need any information to be used in my assignment, the only thing I need to do is to use my smart phone and visit the website to access the information I need to do my assignment.

This was a critical point in the researcher's investigation because currently students prefer to carry smart phones than moving around with laptops, or, more commonly, they are not owners of laptops, which are expensive, so they use they phones as preferred devices. Findings from this theme showed that a small proportion of students reported not believing that ICT tools can assist in their learning process, whereas the majority of the students who took part in the study believed that access to technology gives them the opportunity to acquire new knowledge and enhance their learning experiences. Upon the introduction of the Signature Courses curriculum, it was feared that many students would be denied the right to learn since not all of them had access to computers and Internet to access their learning materials. However, a few months after the implementation process, it was found that students, supplied with digi-bands, were very comfortable with doing the courses online since the technology used allows them to share information, collaborate with their peers and become critical thinkers as evidenced in this comment by P18:

... I enjoy using ICTs because I get the opportunity to interact with fellow students. An interaction with your fellow peers makes one to understand a lot since you are all striving for one goal and therefore work hard to get better results. With your peers' help, you easily understand some questions because different people understand things differently and become easy to understand when your fellow peers explain to you.

The focus group discussions found that most of the students who had skills and experience regarding ICT were coming either from former ³Model C or private schools where computer literacy is part of the school curriculum. Furthermore, the study found that the emergence of technology as a tool for learning has made collaborative learning possible, as shown in this comment by P13:

³ Model C schools were schools specifically reserved for whites during the apartheid era in South Africa.

... A few years ago, we were expected to wait for a long time to receive feedback from our lecturers because we didn't have the technology that we have now. Now we are able to share information and communicate online without having to travel to meet each other at a particular place.

It is clear that access to technology plays an important role in promoting student learning and motivation. The above quotes confirm the perception that the emergence of various educational technologies have helped to bridge the gap or distance between student-student, lecturer-student, student and the institution. The availability of online technology has made it possible for students to form online learning communities in which they are able to help each other with assignments and also to work in groups. Again, it was found that in terms of technological advancement in South Africa students have been affected by the high levels of educational inequality which had given rise to large earnings inequalities. The legacy of apartheid education, with racially segregated schools and under-resourcing of schools for blacks in particular, is still evident in large educational differentials between whites and blacks.

In summing-up this section, it could be argued that even though Unisa is migrating to online teaching and learning, there is still a long way to go because historically Unisa did not make sufficient investments in providing adequate facilities for online teaching and learning, as it has been teaching largely through print. As a consequence very few opportunities have been cultivated to practise basic research into the potential for using online environments for teaching and learning. There is clearly a need for further research to investigate topics related to the development of ICT pedagogy to avoid occurrences where technologies are adopted without a matching pedagogy that copes with the features and demands of the new tool. It is, also evident that in order to embrace technology for teaching and learning there is need to start by altering people's attitudes so that all stakeholders are prepared to accept and to be educated within the new context.

4.2.2 Theme 2: Lack of technical skills, knowledge and experience to use online resources

This theme relates to the technological skills and experiences lecturers and students need in order to be able to operate effectively and efficiently in an online environment.

The response regarding this issue has shown that having ICT skills is the most enabling factor to operate in a digital world, though this is often overshadowed by challenges of unavailability and inadequacy of access. Some of the participants quoted (anecdotally) instances where their fellow lecturers not involved in the Signature Courses held negative attitudes towards the adoption of ICTs as shown in this comment by P10:

... I don't understand why we have to teach online because most of us are comfortable with the way we have been teaching. I am not comfortable with the use of these technologies because it means that we shall have to go for training again and again. The adoption rate of technology is low among some of us because we still believe highly in print media.

The focus group discussions held with students revealed that most of them were computer literate. Furthermore, the study found that there are lecturers and students who do not have the technical skills and experience to use online technologies for teaching and learning purposes and as a consequence they find it difficult to participate effectively in an online environment. For example, one of the participants, P25 complained about our education system's failure to integrate ICTs in teaching and learning from an early age as shown in this excerpt:

... I think challenges like lack of in-service and re-training in ICTs, lack of technical and appropriate administrative support, lack of appropriate physical environment and ICT infrastructure are to be attended to if Unisa wants to make strides in online learning.

Before the implementation of the Signature Courses in 2013, Unisa undertook a campaign which came to be known as 'Unisa is changing.' This campaign was meant to explain to the university community and the general public that all first-year students at Unisa were expected to have knowledge on how to work in an online environment. Even though the purpose of this specific theme was to find out how lack of technical skills and experience affect students' ability to operate in an online environment, the study also revealed that both the lecturers' and students' ability to use computers for learning purposes was a pre-requisite for working in an online environment. On the issue of those students who are not computer literate, the participants showed that for students to

participate in Signature Course pedagogy there is a great need for them to have skills and knowledge on how to manipulate a computer as is shown in this comment by P30:

... The training that I got helped me to be able to use simple programs like Microsoft Office, how to write and send emails. I love working online because I can learn anywhere, and anytime.

Further, the study revealed that even though Unisa is currently doing everything to embed technology for teaching and learning, there is still a lack of technical support staff. It is evident that there is a huge gap in computer skills training among the students. It also emerged during the focus group discussions that student access to computers differs considerably from student to student. Another important issue which emerged during the focus group discussions was the issue of students' pedagogical readiness or lack thereof for e-learning and assessment because e-learning readiness is critical for the successful implementation of technology as a learning tool. For the success of e-learning implementation, there is a need to acknowledge the importance of assessing student and faculty readiness to adapt this learning style (So & Swatman, 2006). Significant to the students' success in Signature Courses' pedagogy is their pedagogical readiness for e-learning, that is, their ability to make use of e-learning resources and multi-media technologies to improve the quality of their learning.

At the inception of the Unisa Signature Courses project many students were against it because they feared that they would be denied their right to learn because they do not have either the skill or equipment for online learning. However, contrary to the general view that most students are not comfortable with doing Signature Courses using online facilities, this study found that immediately after registering, many students were in fact enjoying working online. Indeed, students who are registered for the Signature Courses find the pedagogy very appealing, so much so that some students like P18 suggested that it be adopted in all the courses at Unisa:

... I wish that all the courses at Unisa are taught online like the Signature Courses because you need not to go a particular place to meet a particular person at a particular time. The only thing you need is a computer, data bundles to access the internet, then, you are done. I find it easy to work online since it allows me to work at my own pace, submit assignment even

at night and receive my feedback there and then. As long as you have access to internet you are able to learn anywhere, anytime.

It also emerged in the interviews that lack of technological skills can affect the success of the student in online learning because for a student to be successful in online environments, the student must be, at the very least, technologically savvy in computer use, as expressed in this comment by P33:

... I am interested in an online program because it allows me to work at my own time. I am able to access learning resources anywhere without having to adhere to strict timelines. I think having computer skills come in handy in situations like this.

The research found it interesting that most of the students who took part in this study were digitally literate. However, contrary to the digital natives, the researcher also found that there were a group of few students who have been dubbed “digital immigrants or strangers.” These are students who have been exposed to computers for the first time and had no access to ICTs whilst growing-up (Brown & Czerniewicz, 2010:861). On the same vein about digital natives and digital immigrants, the focus group interviews revealed that both groups are eager to learn more on how to use technology for learning purposes. In line with students' familiarity with technology, the students interviewed were asked about the advice they would give to a first-year student who is aspiring to register for the Signature Courses at Unisa. Their responses were what the researcher expected but serve to confirm the central position that technology occupies in students' studying practices, as indicated in P15's comment:

... New students should make sure that they have their own laptops so that they could check their emails frequently, learn to type, be proficient with MS office packages and familiarise themselves with the online resources available.

Meanwhile, P42 also advised that:

... The university should improve ICT provision, provide help for students who have their own computers, standardise the availability of online resources across courses and provide a variety of resources.

Despite this finding, some students showed their sentiments regarding the Signature Courses' pedagogy when P48 made the following comment:

... I was highly amazed by the modern manner in which this module approached present-day realities. It always required me to do intensive research over these realities which in turn encouraged me to formulate my own opinions on these matters. This is an excellent way of studying certain aspects of the law as the law is always changing to meet the needs of society. My journey through this module definitely proved to be both a strenuous and a rewarding experience, I continuously spent hours at a time studying concepts and newspaper articles to the best of my ability, as I knew that the end result would be of benefit not only for the purpose of this module, but also as a life-long lesson...I hold deep respect for the founders of this module.

The above comments underline the importance for students and lecturers to possess technical skills, knowledge, and experience needed to work in an online environment. This study has proved that through technology it is possible to send and receive assignments and feedback online anywhere, and anytime. Furthermore, the interviews conducted have shown that it is an undeniable fact that if all Unisa students had access to ICTs and were connected to the Internet, it would be relatively simple to have non-venue based examinations where students could have the opportunity to write their examinations at any place of their own choice (This issue has already been explained in the previous sections). Further, this study found that while having access to the Internet is a pre-requisite for academic engagement at Unisa, elements of ability to navigate and use the Internet effectively are ultimately the key to success. Currently, there is an assumption that the in-coming generations of lecturers at Unisa are digital natives and are therefore much more comfortable in the use of technology for teaching than the previous generation.

Contrary to this assumption, the researcher found that many lecturers are not conversant with the various ways in which technology as a tool can be used for teaching and learning. The interviews also revealed that while most of the lecturers are comfortable with the use of technology for teaching and learning, many are also uncomfortable with the pedagogy of technology because there is generally low capacity in terms of the content knowledge, cognitive skills and manual skills for technology (McConnel, 2002). While lecturers in the Signature Courses are trained and comfortable in the use of digital technologies for teaching and learning, this study found that there are still those lecturers in some departments who are not comfortable. Ideally, they should act as mentors for those lecturers through a cascading effect of knowledge transfer, which was one of the aims of the Signature Courses project. The interviews also found that it is still common to find students who do not have computer skills because they did not have the opportunity to find avenues for training in computer skills.

Another important point which emerged from the interviews was an indication that users of e-learning, particularly lecturers, did not want to show their weaknesses in ICT skills, which led to another problem, that is, resistance to change. Some of the lecturers interviewed, especially those who were previously not involved in the Signature Courses have shown to have negative attitudes towards the adoption of ICTs for learning purposes. In this theme, resistance to change was seen to be associated with fear of adopting new technologies, fear of exposing one's ignorance, low attitude towards e-learning and a perception that e-learning is an extra load. As a sign of resisting change, one of the participants identified as P8 made this comment:

... I do not see any reason to learn all these ICT related skills because I am not going to use all of them. I am an old school kind of a guy who enjoys teaching using a book and a pen. I think I have enough workload and you want to add more? Besides, I can teach my students without having a computer.

From this excerpt, it is clear that the participant is reluctant to embrace technology for teaching and learning even if it has the potential to reduce the workload and make the provision of student feedback much easier and faster. To conclude this section, the researcher provided some personal opinions on the viability and validity of the participants' perceptions and experiences matched against the current reality at Unisa.

The reality at Unisa is that both lecturers and students are ready to embed technology for teaching and learning. It should be acknowledged that although Unisa wants to go online and use the e-learning route, there is a serious challenge that the majority of the students in rural areas will be left out because not all students have access to internet connectivity. Fortunately, most of these students are currently able to access internet through the use of their mobile smart-phones. Although participants revealed that most of the participants concurred in embracing technology for teaching and learning, it also emerged that the use of technology at Unisa is very limited since it is confined to one set of courses/modules, the Signature Courses. Despite these misgivings, the findings brought out by this study suggest that the advent of technology has been welcomed at Unisa because it has the potential to bridge the gap between the lecturer and the student, the student and the institution, the student and his/her peers.

4.2.3 Theme 3: Lecturers' and students' attitudes toward ICTs

In this theme, Unisa lecturers' and students' attitudes towards the use of ICTs to enhance student teaching and learning in ODL were explored. Results from the individual and focus group interviews revealed that there is a belief among lecturers and students that to successfully initiate and implement educational technology in the teaching-learning programmes depends strongly on the participants' support and attitudes. The results reported here were based on the responses they gave to the following open-ended question: What is your attitude towards ICT integration into the curriculum to enhance student assessment at the University of South Africa? Hew and Brush (2007), Keengwe and Onchwari (2008) posit that if lecturers and students perceive technology programmes as neither fulfilling their needs nor their students' needs, it is unlikely that they will integrate the technology into their teaching and learning.

Currently, the University of South Africa is transforming its teaching and learning mode from traditional print-based mode to one that uses information communication technologies (Mishke, 2015). However, the implementation of these ICTs is dependent on the lecturers' attitudes. The development of lecturers' and students' positive attitudes towards ICTs is a key factor in the enhancement of computer integration and avoidance of their resistance to computer use (Watson, 2007). Thus, ICT attitudes are a key issue in technology adoption and diffusion. If lecturers and students have positive attitudes

toward the use of educational technology then they can easily provide useful insight about the adoption and integration of ICT into teaching and learning processes. There is evidence of differing experiences among lecturers and students regarding the use of technology to support their learning. Regarding students' attitudes towards technology and Internet connectivity, students felt that in general students who register for Signature Courses should be able to work online from both their computers and their smartphones because the skills needed to access the Internet from a smart phone are similar to the skills needed to access the Internet using a computer. However, the focus group discussions conducted revealed that students with computer skills and experience have more positive attitudes towards online learning. The majority of the participants viewed e-learning as a tool for providing opportunities for marginalised and disadvantaged students who are unable to attend classes due to physical, social or economic constraints.

Participants' attitudes play an important role in influencing the effectiveness of technology education from a variety of perspectives. Perceptions and attitudes about ICTs are affected by many factors such as the users' experiences, lack of resources, lack of professional training, gender, academic qualification, age, lack of institutional support, and lack of time (Galanouli & McNair, 2001; Watkins, 2003; Zare-ee 2011). These findings are consistent with the literature that reveals that the successful integration and implementation of educational technologies depend largely on the attitudes of educators who determine how ICT is used (Van Reijswoud, 2009; Al-Zaidiyeen, Mei & Fook, 2010; Uslu & Bümen, 2012). In this study, lecturers have shown both positive and negative attitudes. On the positive side, they appreciated the speed at which they are able to retrieve information from the web as shown in this comment by P11:

... ICT makes it easy to surf and download information for use in student teaching and learning. Through ICTs we are able to collaborate with so many people at the same time. You also get your feedback there and then. It is important for us to embrace technology because it comes with a lot of benefits. We must work together as a team if we want our dream to use ICTs for learning purposes to be realised.

The interview results also show that learning experience is enriched through the use of online interaction between student and the lecturer, student and his peers as shown by P 43 in this excerpt:

... Technology is good because it allows us to interact with our students in real time and we are able to provide feedback much faster than it had been the case if we were using traditional delivery mode. Using technology allows us to do more with less and we are able to access all our students simultaneously by sending SMSs to their mobile smart-phones at once.

Further, the study also found that the presence of ICTs has brought a paradigm shift in teaching and learning. Instead of lecturers being the only custodians of knowledge, their students are also involved in the creation of knowledge. Similarly, participants showed how important technology-enhanced learning is, especially in ODL environments as indicated by P14 in this comment:

... When I use ICTs my role is to facilitate learning by enabling students to be more active in the learning process and, contrary to traditional pedagogical practices, the use of ICTs fosters a constructivist framework in which my role shifts from being a source of knowledge to facilitating learning. We learn collaboratively.

This study also revealed that most of the students who are currently studying at institutions of higher learning are digitally savvy and the use of computers is now commonplace and becoming ubiquitous. Student attitudes and beliefs towards ICT, as well as their satisfaction with technology and past e-learning experiences are regarded as success determinants of future e-learning initiatives (Watkins, 2003). Furthermore, the study revealed that students with little skills and experience develop a negative attitude towards computers as shown in the following comment from P52:

... I admit I am an old school pen and paper kind of a guy and very much reluctant to using technologies of the day, which everyone except my-self seems to be so fond of.

The students surveyed firmly believe that technology has a significant role to play in supporting and enhancing their learning experiences. Most of the students believe that technology provides them with an opportunity to use emails, twitter, and Facebook to stay in touch with their tutors and fellow students as indicated in this comment by P48:

... The highlights of my journey through this module were reading my fellow students' views on topics that were given. It gave me a better understanding and knowledge of certain things that were relevant to the topic. Through the emails and Facebook I was able to understand my peers' opinions about the various topics we were engaged with.

Furthermore, the focus group discussions revealed that the use of smartphone has completely changed students' attitudes towards their use for learning purposes. It is clear from the focus group discussions that students have developed a positive attitude towards the use of educational technologies for learning purposes. It is tempting to conclude that, in order to embrace technology for teaching and learning purposes, there is a need to start by altering people's attitudes so that all stakeholders are prepared to accept and to be educated within the new context. The interviews also found that most students prefer to adopt the use of online learning because it has become an ideal delivery vehicle for education and learning. Second, online learning offers both students and lecturers quick and seamless access to information. Third, online learning has the potential to reach those previously denied access (e.g. students with physical disabilities), and, finally, it is the learning approach that can be used to reach a greater number of students. One of the participants, P58 shows why he enjoys doing online courses like the Signature Courses:

... The main reason why this module is my favourite is that it is all online, and it is a great pleasure to see the use of technology within the educational process. I found that using the digi-band and a laptop to study the module is much more pleasant than having to page through a textbook. The aim of the digi-bands is to allow us to work offline. The only thing you have to do is to plug it to a computer so that you can access the necessary work in the learning programme. I found that I remember more information from this module compared to my other modules.

Overall results from the analysis of lecturers' and first-year students' responses to the research question posed above showed that, in the main, the participants held positive attitudes towards the use of ICTs in education. This is corroborated by Bingimlas (2009:238) who claims that the attitudes of students and their lecturers towards the use of ICTs in education will be influenced by their understanding of how students' learning will benefit from the use thereof. Using the MyUnisa portal as a point of departure, this study found that lecturers and students have a positive attitude towards the use of technology as proved by the implementation of the Signature Courses pedagogy. Furthermore, there is positivity about transforming teaching and learning by using technology effectively.

4.2.4 Theme 4: Student engagement in assessment practices

The purpose of this theme was to explore the validity of students' involvement in their own assessment. The interview results have shown that students' involvement in their own assessment is a pre-requisite for successful learning, especially in ODL contexts which is student-centred. Furthermore, the findings from this study show that when students are included in their own assessment, they are not just passive recipients of information but instead they become co-creators of knowledge. This is in line with Mclellan's (2001) findings, in which he emphasised that students should not be left out of their own assessment. This approach according to Stiggins (2008) requires that academics share the responsibility of learning with the students and help the students to develop the intellectual skills necessary to make sound decisions in their academic and personal lives which last well into the future. Assessment becomes not something done to students instead it becomes an activity done with students (Boud, 2007:169).

Flutter and Ruddick (2004:58) conducted a study relating to the impact of implementing student voice and student engagement practices has shown that where academics listen to students' perspectives on their learning experiences, this enhances academics' understanding of how students learn most effectively and has led them to reflect on, and make changes to, aspects of their own teaching practice. Furthermore, the interviews revealed that in the Signature Courses pedagogy, there are two direct ways in which students are involved in their own assessment. This is done either in the form of self-assessment in which students assess their own work. Secondly, it is done through peer-assessment wherein they assess each other's work and give each other feedback. The

resonance of these findings with the literature review shows the importance of involving or engaging students in self-and peer assessment. Student self-assessment occurs when students assess their own performance. By virtue of engaging them in their own assessment, the participants revealed that this helps students to focus on the learning outcomes and reflect on their own performance. The above statement was supported by P19 as shown in this comment:

... I see no valid reason why students should not participate in the assessment of their own learning (self-assessment) and that of the other students (peer-assessment) in their class. Involving students in their own assessment helps them focus on the outcomes and develop a better sense of what it means to achieve them in certain ways. It also helps them reflect on their own performance, and think of ways to improve.

This quotation is corroborated by Nicol and MacFarlane-Dick (2006) who posit that student involvement is important as it can lead to overall improvement. Through the individual interviews conducted, the study found that early intervention of the lecturers is essential to ensure that students understand the importance of their engagement in the process of assessing their own progress as shown by P15 in this comment:

... We have given ourselves enough time to train our students so that they could be able to objectively assess their own work and progress. In the Signature Courses, students are involved as partners in their own learning, especially when they participate in focused formative assessment tasks. In these groups students become co-creators of knowledge which is in-line with the constructivist-theoretical framework used in this study.

Similarly, the above statement was echoed by P8 who made the following comment regarding student assessment in distance learning:

... The nature of our university as an ODL institution does not give our students enough time to get involved in deciding how they should be assessed; they are usually told which areas to cover and concentrate on for their assignments and examination. However, the introduction of

Signature Courses has made it possible for students to engage and interact in collaborative learning with their fellow students.

On the notion of involving students in the process of their own assessment, the study revealed that students can be involved by using for example online quizzes that can provide them with immediate feedback regarding their performance. Through self-assessment, students benefit because the whole process increases their potential for self-awareness through reflective practices. Again, self-assessment increases student's critical reviewing skills enabling the student to be more objective when evaluating their own performance and those of their peers. Through Signature Courses, students are in charge of their learning endeavours as shown by P12's comment in this excerpt regarding self-assessment:

... Signature Courses' involvement of students in their own assessment helps them to take control of their own learning and assessment because it gives them the chance to manage their own learning and development more independently. Further, it encourages them to assist each other since they learn as a group.

The above comment reiterates the fact that both lecturers and students were in agreement with the fact that students should be partners in the teaching and learning processes. The study further revealed that through engagement students become independent and develop skills and knowledge that will sustain their learning beyond formal schooling. The motivation-success cycle will continue if the students witness and reflect on their growth towards learning goals (Haddoune, 2000). Further, it shows that when students understand and apply self-assessment skills their achievement and motivation to learn increases. Students who develop a positive approach about their capabilities are said to possess the power and the faith needed to succeed. This theme therefore, argues that student engagement should further be promoted by providing a supportive and collaborative learning environment that is inclusive and that promotes student involvement in assessment practices. In light of the findings from these interviews, it would be helpful to examine how student engagement in assessment could be interpreted and used in distance education. In summing-up this section, it should be recognised that while much of what has been investigated here has to do with distance learning in higher education, the ideas that emerged can also be applied to

conventional or face-to-face institutions. It could therefore be concluded that Signature Courses are important in student learning and assessment because they have managed to reduce or bridge the distance that normally was an issue before the proliferation of technologies.

4.2.5 Theme 5: Student feedback

This theme is concerned with how student feedback in Signature Courses is affected by time constraints and workload. This theme reiterates the fact that workload and time cannot be seen in isolation because they are both tied to the provision of formative feedback. As Laurillard (1993:61) remarks, “action without feedback is completely unproductive for the learner.” The participants, in line with established researchers, identified the purposes of student feedback as being to improve student performance and to motivate them to do more in their learning process. Feedback is used to keep systems on track and is regarded as a means of regulating student performance (Boud & Falchikov, 2006; Crossman, 2004). It also emerged during the interviews that with the introduction of the Signature Courses curriculum, Unisa brought a new kind of student-lecturer interaction not hitherto imagined, as indicated in the following comment by P9:

... Given the fact that Unisa has implemented the Signature Courses which makes use of technology for teaching and learning, it is now possible that we can interact much faster and regularly with our students, and students can also interact with their peers by using online facilities than it would have been the case in a traditional face-to-face situation.

Further, the interviews revealed that even though our students are at a distance they still prefer feedback that is communicative and easy to understand, in other words they want the type of feedback that talks to them as if they were talking to a human face. Since the advent of the Signature Courses, several hurdles in the provision of timely student feedback have been overcome. These hurdles tend to pertain in Unisa’s conventional courses and they cluster around the following: For example, in the Unisa conventional courses, students are interested in getting a mark instead of receiving their feedback in order to create new knowledge. Furthermore, it emerged that because of the issue of workload, it is difficult to mark and return assignments in conventional

courses at Unisa within the stipulated time, and as a result the students receive their feedback late as expressed in the following excerpt by P29:

... I have been working here for three years and my experience is that we have a lot of students and very few lecturers. Because of these large numbers of students we find that it becomes very difficult for us to mark all the assignments and return them to students in time. However, the type of assessment that we have in the Signature Courses makes it easier to assess and provide students with formative feedback.

In the Signature Courses' model, students are practiced in submitting assignments and tasks on a weekly or fortnightly basis. These students are divided into groups of 50 students and are attended by a TA whose responsibility is to manage his or her group by overseeing group discussion and peer-to-peer exchange and intervening when necessary. The responses from the participants showed that student feedback in the Signature Courses pedagogy is provided in a variety of ways as shown in the comment made by P17:

... There are many assessment strategies for use in distance education. Some are peer-assessment, self-assessment, wikis, blogs, discussion forums, etc. But not all of them are suitable for assessment in Signature Courses.

Contrary to the above discussion on Signature Courses' student assessment feedback, this study found that in conventional courses, students rely on receiving written feedback from the lecturer, and, usually, the emphasis is put on assessing students at the end of the term or semester. Further, the interviews found that in distance education assessment there is little student-student or student-lecturer interaction because for these people to meet there should be a venue organised by a particular person to meet a particular group at a particular time. Further, the study found that the main difference between Signature Courses' assessment and normal conventional courses at Unisa is their delivery mode and their frequency. In the Signature Courses pedagogy, assessment is done solely online and formative assessment takes place frequently in order not to delay the process of providing students with their feedback. Students usually receive their feedback within a period of 48 hours.

The study also found that the implementation of the Signature Courses has changed the face of teaching and learning at Unisa because of the rapid way of providing student feedback. This has become possible because TAs receive students' assignments online and start the process of grading them immediately with the result that feedback is given promptly. Furthermore, it is also easy for the TAs to provide feedback because of the small number of students that each teaching assistant has to work with (50 students per group). This theme also found that the use of technologies and social media such as Facebook, blogs, and Twitter can provide lecturers and students the ability to both give and receive feedback with success in higher education (Greenstein, 2010:87).

4.2.5.1 Sub-theme 1: Time constraints

Despite general agreement and affirmation from all the participants on the critical role that assessment plays in the teaching and learning cycle, there exists a body of opinion on the role that time constraints play in student assessment. Time constraints, as it is used in this thesis, refers to the state of affairs, particularly at Unisa, in which lecturers are unable to mark, provide or correct a student's work in time because of workload and in which students are unable to engage productively with the comments made by lecturers on their assignments because they have already moved onto the next assignment or are approaching the examination period. Given that the majority of the lecturers interviewed were involved in both Signature Courses and conventional courses at Unisa, this issue is still pertinent despite the innovations introduced by the Signature Courses in terms of assessment practices. For this reason, and to highlight the effectiveness of the Signature Course pedagogy, the researcher provided information on these issues for the purpose of comparison.

The participants singled out time as the most important challenge that affects student assessment at Unisa since it affects both teaching and learning in a variety of ways, impacting on both the provision of constructive formative feedback and workload. Most of the lecturers interviewed showed that time constraint is by far the biggest factor linked to student feedback or lack thereof and workload. Lack of time was noted by the majority of the respondents as being the primary challenge, as evidenced by P47 who shared the following experiences regarding how time constraint affects workload and the provision of student feedback:

... The turn-around time for returning assignments to students is always a problem to us because we are expected to return the assignments to students within fourteen days. Due to high numbers of enrolled students it becomes impossible to provide student feedback as expected. It can also happen that our students write their semester examinations without receiving formative feedback from us. By contrast, the introduction of Signature Courses has at least minimised the time greatly because students get their feedback online.

The last comment alludes to the Signature Courses pedagogy in which there is literally no delay in terms of time to deliver student feedback unless there is a technical breakdown in the ICT delivery system. The participants' frustrations with the conventional delivery system for assignments in conventional courses at Unisa pertain also to external factors such as post office industrial strikes. Unisa is the South African Post Office's biggest customer because it uses the post office to deliver students' study materials in the majority of cases, especially those who do not have access to the Internet. Delays at the post office due to industrial strikes have an obviously negative impact on providing students with services from the university.

To overcome this problem Unisa has resorted to the use of private courier companies to deliver study materials as an alternative to the post office, though this has proved to be expensive. The participants believe that it is an anomaly for Unisa to be still reliant on the snail-mail delivery system given the technologies currently available. For example, P26 was apprehensive about the time that is lost because of the post office industrial actions. The participant summed-up by making the following comment:

... Sometimes it is not only the time factor that affects student feedback, but things like workload and industrial strikes at the post office. There just isn't enough time to do justice to everything-when I take the time to plan I don't have the time for marking and provide feedback and likewise when students need to receive and do their assignments they are affected by the strikes at the post office.

In the same vein P19 reiterated P14's comment by indicating the extent to which post office industrial strike has affected student feedback in those modules that are not done online:

... The university has even gone to the extent of employing contract markers to help the lecturers in the marking of assignments. Sometimes it is not only the time factor that affects student feedback, but things like workload and industrial strikes at the post office.

In contradiction to the comment made by P19 and P14, P10 indicated that Signature Courses are not subjected to the problem of time delay because they are offered online, and students can access their learning materials anytime, and anywhere. Furthermore, P10 commented that:

... If Unisa wants to move out of this snail-mail delivery system, it has to invest massively in ICTs. Unisa should provide state of the art ICT infrastructure that is comparable to those found in other ODL institutions.

Participants also indicated that the provision of ICTs for online teaching and learning at Unisa had considerable benefits in the current context in South Africa because it is able to make education accessible to all people, especially the marginalised and the disadvantaged. This study also found out that the provision of mass education in South Africa is affected by the delay that the country is experiencing in terms of implementing the broadband facilities throughout the country. It is this researcher's understanding that once this is achieved, there will be few barriers affecting online learning. For proper teaching and learning to take place time is an important asset. Most of the lecturers overwhelmingly regard lack of time as the main impediment to their ability to fulfil their responsibilities satisfactorily, especially in those courses or modules that are not online. However, all the participants welcomed the use of the Signature Courses model because it saves time and lecturers' workload.

4.2.5.2 Sub-theme 2: Workload

This theme emerged as a response to the way the Signature Courses has reduced lecturers' workload. Again, and for the sake of clarity, it should be noted that the

lecturers interviewed tend to talk about workload in relation to the conventional courses in which they are involved which have an impact on their ability to teach effectively. Although the purpose of this study is on Signature Courses' use of online delivery model, the issue of workload normally affects those modules or courses that are not offered on line. These ideas do not pertain to the Signature Courses but are included here for the purpose of comparison and with an eye to describing the teaching context at Unisa. This study found that workload cannot be seen in isolation since it is associated with time factors and student feedback but it is obviously more difficult to manage modules that cater for very large numbers of students unless specific plans and processes are put in place to remedy the staff/student ratio in these cases.

To add to the academic and logistical difficulties of managing workload and time across the colleges, Unisa is also required by the Department of Education (DoE) to indicate the number of active students for subsidy purposes. This implies the introduction of an obligatory student assessment early in the academic calendar. This obligatory student assessment adds to the lecturers' workload because it is done, in a sense, to satisfy an external body (the Department of Higher Education and Training (DHET)) by providing it with statistics on how many students have registered for the particular academic year (DISA, 2015). To satisfy this external requirement, most of the lecturers use multiple choice questions to assess their students since they can be marked quickly through the use of computer-generated programmes. Further, the university is expected to provide complete statistical information because failure to do that could jeopardise its chances of receiving sufficient subsidy from the government which is allocated according to student enrolment.

It is therefore, important to question what constitutes workload in the Unisa context and to concede that it consists of more than marking students' assignments. For instance, an appropriate workload for faculty at the University of South Africa, as it is at other universities, includes research, scholarly activity, administration, teaching and community engagement. In the Unisa context, workload is primarily associated with student enrolments, time constraints and student feedback. This study found that the issue of workload at Unisa varies from college to college, and from department to department. This study found that there are lecturers who complain about high student enrolment which makes it difficult for them to finish marking on time and as result there

are situations in which students sit for the final examinations without having received their formative feedback as shown in the comment made by P21:

... Sometimes we do not even have enough time to provide students with proper feedback because of the workload and this impact negatively on their success. When using Signature Courses curriculum, assessment is done online and is much faster than in traditional face-to-face situations.

However, it should be noted that P21's comment would not be an issue if the course or the module being taught was being offered online. A further factor which has a deleterious influence on workload is Unisa's current system of semesterisation. In 2007 the Unisa Council took a decision to introduce a modular approach to teaching, learning and assessment as it was believed that assessment workload would be reduced and become more efficient. However, this study revealed that the assumption made was not necessarily correct. From close observation undertaken in this study, it seems that semesterisation has had an impact, not only on academic staff, but on all student support services. A sizeable number of the participants interviewed argued that semester courses are not conducive to formative assessment since they do not provide enough time for lecturers and students to engage as shown by P43 in the following comment:

... You know, I have two views on semesterisation. My first view is against assessing our students on a semester basis because there is a lot of work that has to be done by both students and lecturers. Students are given learning materials including all the assignments at the beginning of the year and sometimes there is late delivery of these learning materials which ultimately affects the turn-around time of assignments from lecturers to students. Imagine students receiving learning materials and within few weeks they are expected to write and submit assignments. I am convinced that year courses are still the best because both of us have enough time to do our work without pressure.

This study found that in contrast to the workload that is usually experienced in the traditional courses, the Signature Courses cater for large numbers of student and have

devised a way of serving these students satisfactorily by appointing extra contract staff called TAs to facilitate the teaching process. The lead lecturer's responsibility is to monitor TAs' work and deal with any problems that may arise. In this way workload is relieved for the permanent staff in a particular department. Contract markers are also appointed for those courses or modules that are still using traditional delivery modes of learning. However, the major difference between the Signature Courses pedagogy and the traditional system is that in Signature Courses the provision of student feedback is prompt and much faster than in traditional delivery mode. Furthermore, there is regular student-teaching assistant and student-peer interaction. Participants were further asked how workload problems could be dealt with in the context of Unisa. P37 commented that:

... As long as the university is not employing more academics, this workload problem cannot be solved anytime soon. However, technology looks like it will help to solve this problem in the near future. For example, if all modules are done like what is happening with the Signature Courses, I think workload would not be a problem at all.

The above comment reveals that technology has the potential to reduce workload since it can be used to provide student feedback within a short space of time. The Signature Course pedagogy differs radically from Unisa's traditional teaching and learning delivery system because it uses the affordances offered by digital technologies. In addition, the digital affordances can be used to better support students, especially to reduce Unisa's drop-out rate (Baijnath & Ryan, 2014). It is interesting that despite the appointment of external contract markers for conventional courses at Unisa, several of the interviewees expressed concern that Unisa does not appoint sufficient academics for teaching and learning.

Although appointing more academics could assist in alleviating the workload problem in conventional courses at Unisa, the researcher believes that technology can and will continue to offer an effective solution in reducing individual workload and speeding up the process of delivering student assessment feedback especially when it is integrated into effective pedagogical solutions such as pertains in the Signature Courses. The solution lies in devoting time and energy to designing online courses with an innovative approach to assessment. Taking economies of scale into consideration, this researcher

believes that it is expensive for Unisa to appoint permanent lecturers. Appointing contract staff is more economical since the university saves on the benefits awarded to permanent staff. However, this is not a particularly ethical way of conducting university business. Moreover, the numbers of contract staff required to service future online courses, if this model is adopted more generally at Unisa would considerably increase expenditure. Moreover, the employment of TAs may not be the expected panacea for effective feedback. For example, P7 complained about the TAs' failure to keep the discussion going as shown in this comment:

... I have been checking student-teaching assistant interaction and found that there is little discussion going on. This problem could be dealt with by either appointing them as full-time employees so that they may not ignore their responsibilities and do other jobs. The interaction between the two does not make me happy.

Clearly the issue of permanent versus contract staff is a vexed issue raising more questions than answers at this stage but it is the hypothesis of this study that effective pedagogy making use of appropriate technology is a possible solution when dealing with large numbers of students and relatively low numbers of staff, be these permanent or contract. The study found that for Unisa to be able to solve the workload problem there is need to have pedagogic strategies aimed at arresting the situation as indicated in this comment by P43:

... In order to deal with assessment load it is important that lecturers concerned should change the assessment strategies of that particular module or course. We can deal with the workload problem by looking at the various assessment strategies at our disposal.

Furthermore, this study found that in the Unisa context, Signature Courses are assessment-driven, whereas in the old print model, emphasis was put on summative assessment. Again, in the Signature Courses, formative assessment constitutes 80% of the final mark, while summative assessment, which in most cases is non-venue based constitutes 20%. Formative assessment is conducted regularly and frequently, and is designed in such a way that it is peer-driven which in turn reduces the workload on the part of the TAs as shown in this comments by P31.

... In traditional education, more attention is paid to summative assessed which comes at the end of a term or a semester. In Signature Courses students are assessed all year round using strategies like peer-assessment, self-assessment, portfolios, blogs, wikis, YouTube, etc. Students interact regularly online where they share ideas regarding their studies.

In the Unisa context, workload affects teaching and learning in a variety of ways. For the purpose of assigning workload at Unisa, activities are divided into the following categories: research, scholarship, teaching, and service or community engagement. At Unisa lecturers are expected to do all these responsibilities regardless of the seniority of the position. To conclude this discussion, it is important to indicate that a workload perceived to be excessive can have a negative influence on student learning. While it is too early to claim with complete conviction, the Signature Course project seems to mitigate the foregoing challenges effectively. As the first concerted effort by all Unisa colleges to present courses which are conceptualised, designed and developed as fully online with online assessment (formative and summative) and online student support, the Signature Courses make it easier for lecturers and students to manage time and workload because, as already described, each teaching assistant is allocated a group of 50 students while the job of the lead lecturer is to monitor the process. The TA's responsibilities include: to answer questions from students, facilitate online group and individual discussions, and mark assignments online. As a further mitigating factor, because students work online in the Signature Courses, they receive frequent opportunities to engage with the coursework and interact with other students, and they receive feedback more swiftly and more frequently than they would via other conventional courses at Unisa because there is a tutor online. So, while the Signature Courses function as formal Unisa courses, the transition to online mode has provided an innovative remedy to the problems of workload itemised in this section. It remains to be seen whether Unisa can migrate the majority of its courses online and whether this is an effective method of teaching and learning.

4.2.6 Theme 6: Lecturers' and students' readiness for online learning

Another important issue which emerged during the individual and focus group discussions was the issue of lecturers' and students' technical and pedagogical

readiness for online learning because e-learning readiness is critical for the successful implementation of technology as a learning tool. For the success of e-learning implementation, there is a need to acknowledge the importance of assessing student and faculty readiness to adapt this learning style (So & Swatman, 2006). Significant to the students' success in Signature Courses pedagogy is their readiness for e-learning, that is, their ability to make use of e-learning resources and multi-media technologies to improve the quality of their learning. E-learning readiness is the assessment of certain organisational and individual factors that should be considered if the organisation hopes to be successful with the introduction of e-learning strategy (Chapnik, 2000; Redmon & Salopek, 2000; Rosenburg, 2001). Before implementing e-learning programmes it is important to measure students' readiness, that is, are they academically ready to engage in e-learning? Are they motivated, self-disciplined, and well-organised? Do they have online skills and what is their level of digital literacy? These and other pedagogic factors play an important role for students to be able to use technology for pedagogic purposes. On the issue of students' pedagogical readiness, the study interviews revealed that Unisa students were technologically ready for online learning as is evidenced in the following comment by P38:

... I like online learning because it improves my performance. Using online learning is a good idea because it allows you to learn anything anywhere at any time without bothering about submission deadlines.

A considerable amount of students who took part in the interviews indicated that Unisa is ready for online learning. This figure needs to be assessed against the current context at Unisa. To indicate Unisa's readiness for online learning, the university's management has provided Internet connection to all its learning centres. As a result students who live relatively close to the Unisa centres have easy access to Internet connection. Producing and teaching an e-learning course effectively entails a web of many resources, each facet or strand of which must be sound to ensure that the course succeeds as a whole (Pirani,2014:2). The support resources required for e-learning are categorised into four areas, namely: (1) technical support, (2) training, (3) course and curriculum development, and (4) help assistance while continuous planning is essential for keeping infrastructure up-to-date and achieving a high return on investment (Garrison, Anderson & Archer, 2003; Bayne & Ross, 2014). For example, institutions must not only provide adequate computer laboratory facilities but also equip them for

multimedia applications as students' needs evolve. It is also important for an institution to make sure that training is provided to the staff so that they can function in an online environment. This training could be done face-to-face in the form of groups or individually. It is also important for an institution to have a help-desk that operates 24/7 as shown in this comment by P31:

... We need to have technicians who are available 24 hours to help students with any technical problems. Sometimes the system crashes because it cannot cope with the large volumes of assignments that we send at the same time.

Other students complained about the computer laboratory that does not operate after hours. There were students who suggested that the computer laboratory should not close so that they could have access to the Internet 24 hours a day as shown by P25 in the following comment:

... It would be good if the computer laboratory is sort of open 24/7 so that one could have an access at any given time of the day.

Furthermore, the interviews revealed that students are now able to access the Internet from their homes using their smartphones, tablets and laptops. From these interviews it could be concluded that the advent of smart phones has gone a long way in solving the issue of student access to the Internet although affordability of the data-bundles is an issue that is still affecting many students. From the above discussion it could be concluded that the success of any e-learning endeavour depends largely on the institution's readiness to provide all the resources necessary for student learning alongside external factors such as costs of hardware and the regularity of power supply.

4.3 TRIANGULATION OF FINDINGS FROM FOCUS GROUPS DISCUSSIONS

In the following section, the researcher provided a statistical summary of the study's results which emerged from the questionnaire survey. However, it should be noted that the results provided here are based on the responses of those students who returned their questionnaires. Like in the previous two approaches used, the study followed all the ethical considerations for social research (See Annexures attached). In this cluster

of technology-enhanced related statements, the analysis of the questionnaire revealed very interesting information regarding the utilisation of technology as a tool that can be used to enhance student assessment in ODL contexts. In this study thirty statements were analysed in order to ascertain if indeed their findings concur with those from the focus group interviews. Before analysing data from the various statements, all the questionnaires were coded so that the respondent's identity remains anonymous.

4.3.1 Teaching and learning in Signature Courses

The first statement with the highest frequency, introduction of the Signature Courses, has shown that 98.4% (n=59) of Unisa first-year students agree that the utilisation of the internet is at the forefront of teaching and learning in distance learning contexts. Further, the survey has also shown that a very small fraction, 1.7% (n=1) did not agree with that notion. Another statement with the highest frequency was student-lecturer, student-peer interaction. In this statement, 98.4 (n=59) of the students who took part in the survey indicated that interaction in distance education is very important because it has the potential to reduce student isolation (See table 4.6). When students interact with their lecturers and with each other, it leads to an improvement in student throughput and success rate.

Further, the questionnaire survey also found that only 1.7% (n=1) of the respondents did not believe that interaction is very important for student success. The third variable with the highest frequency rating was enhancing student assessment using online resources. This statement has shown that 96.7% (n=58) of the respondents confirmed that it is possible to enhance student assessment through the use of online resources. However, the analysis also revealed that only 3.3% (n=2) disagreed that online resources can influence student assessment in distance education. Again, the questionnaire analysis has shown that the majority of students registered for Signature Courses are pedagogically and technologically ready as this is attested by 85% (n=55) of the respondents who took part in the study. However, 15% (n=5) of the respondents disagree that Unisa first-year students are pedagogically and technologically ready for online learning.

Table 4.1: Teaching and learning interaction in Signature Courses

Variable	Disagree	Neutral	Agree
Introduction of Signature courses	0	1 (1.7%)	59 (98.4%)
Student-peer interaction	0	1 (1.7%)	59 (98.4%)
Online Student assessment	0	34 (56.7%)	26 (43.3%)
Pedagogical readiness	5 (8.3%)	46 (76.7%)	9 (15%)

4.3.2 Technical knowledge and skills for online learning

The variable with the highest frequency rating in this cluster is the Internet. This variable has shown that 93.3 % (n=56) of first-year students strongly believe that Internet is a valuable resource for helping distance education students to have the opportunity to learn anywhere anytime. The analysis also found that only a small fraction 6.7% (n=4) were unsure if the internet plays an important role in facilitating student access to online resources. The survey analysis revealed that technical knowledge and skills are the prerequisites for operating in an online environment. Another issue which featured heavily during the focus group interviews was students' pedagogical and technological readiness for online learning. On doing further analysis on the same variable, the analysis revealed that 85 per-cent (n=51) of the students were found to be technologically savvy though there were 15% (n=9) who indicated that not all Unisa first-year students were pedagogically and technologically ready for online learning.

Further, the survey confirmed that lack of technical skills and experience by some students in using online resources are a hindrance for online learning. The survey also found that the variable, social networks, has also a very high frequency rating because 96.7% (n=58) of the students who took part in the study believe that social networks are important in learning since they have the potential to make student-instructor and student-peer interaction possible. This finding concurs with the results from the focus group discussions which showed that students interact and support each other more easier and faster when they are using social networks like Facebook, Twitter, blogs, WhatsApp, etc. A minority of respondents which made up 3.3% (n=2) did not believe that social networks are important for learning purposes. Another variable with a high frequency rating similar to that of social networks was students' attitudes and beliefs towards the use of ICTs for learning purposes. In this variable 96.7% (n=58) of the respondents indicated that one's attitudes and beliefs play an important role in

determining one's success in working in an online environment. Only 8.3% (n=2) of the respondents indicated that one's attitude is not the only determinant of one's success in an online environment. Furthermore, the analysis revealed that currently 98.3% (n=59) of the students who responded to the questionnaire survey access the Internet by using their mobile smart phones. However, a fraction, 1.7% (n=1) did not quite agree that smart phones have the capacity or the potential to connect students to the Internet, citing screen size and memory capacity as the impediments. Figure 4.1 shows technology-related variables used to analyse first-year students' use of technology in Signature Courses.

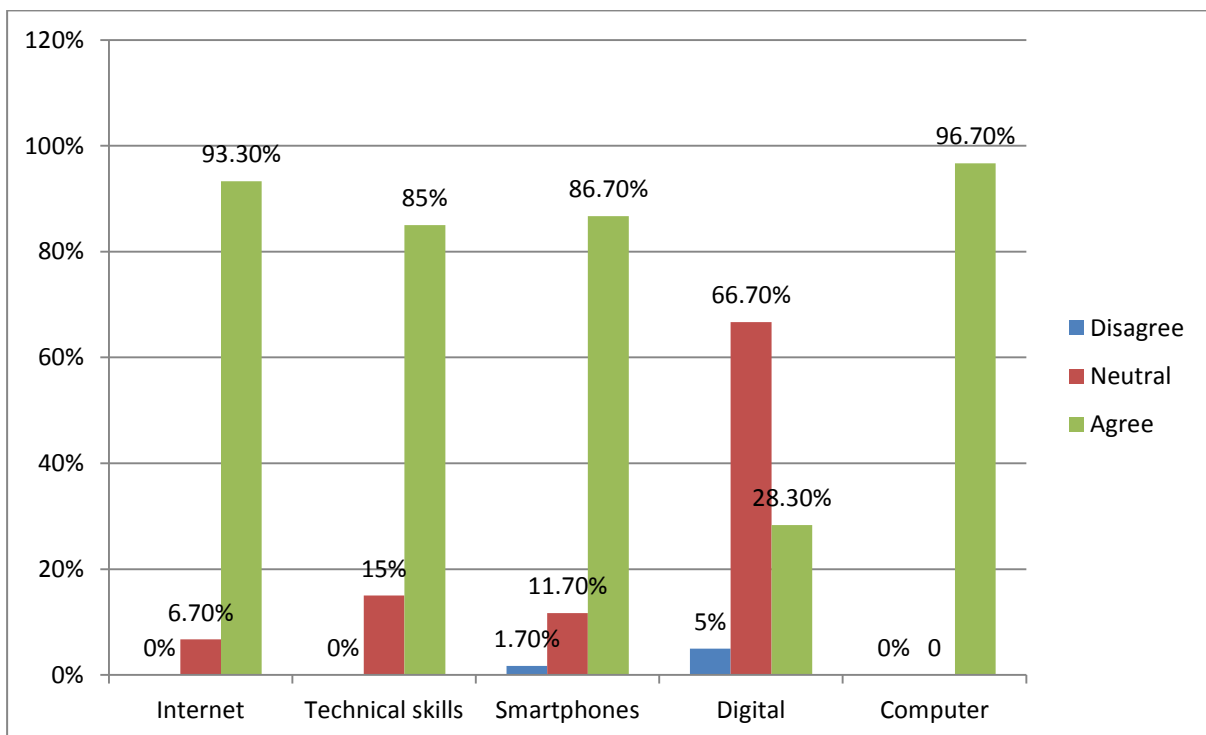


Figure 4.1: Students' use of ICTs in Signature Courses

4.3.3 Correlation of variables

The results reported here forms part of the results generated from focus group interviews. Another important variable with the highest frequency was the use of the myUnisa student portal. MyUnisa is the University of South Africa's online portal used as a virtual classroom where students interact with their teaching assistants and even their fellow students. Through myUnisa, teaching assistants provide student feedback and intervene when there is need. Lecturers are able to introduce courses to students,

and in turn, students are able to access tutorial letters, study guides, and information on how to access textbooks or prescribed books.

This study has taken MyUnisa variable as its departure point because it is the only platform that is most commonly used by students to access their learning materials. The questionnaire survey found that through myUnisa students are able to exchange their views with their peers and the TAs. For example, 91.7% (n=55) of the respondents agreed that myUnisa plays an important role in accessing their learning materials when compared to 8.3% (n=5) of the respondents who did not agree. Significantly however, the respondents who did not agree with the usefulness of myUnisa cited technical glitches as the most important factor affecting learning in the Signature Courses. Despite this, they were positive that if more reliable ICT infrastructure is put in place it will be easy to use the portal for teaching and learning. The majority of variables of importance in the study showed a high significant value as indicated in Table 4.2.

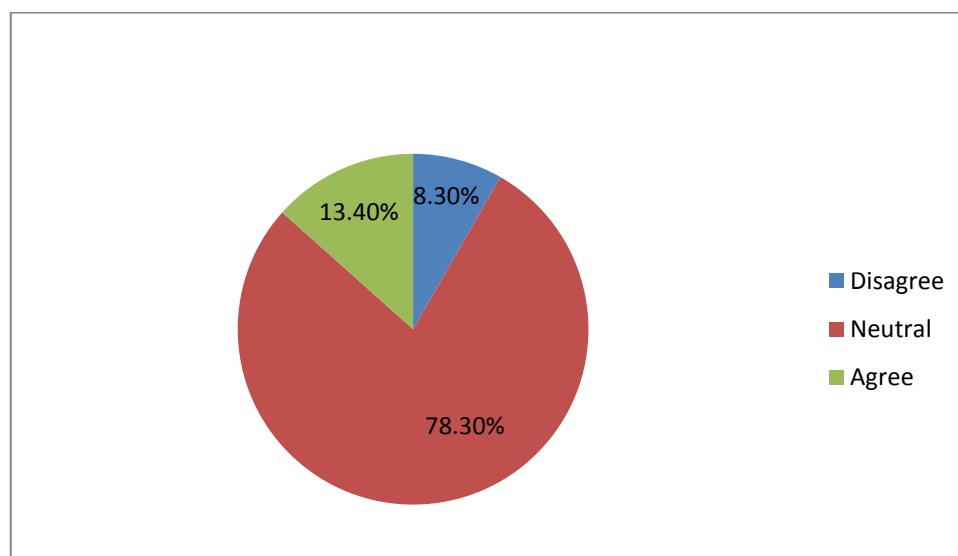


Figure 4.2: Use of MyUnisa in Signature Courses

When conducting a statistical test between two variables, it is a good idea to conduct a Pearson correlation coefficient value to determine just how strong that relationship is between those two variables. In this study Pearson correlation was used to show the relationship that exists between the two sets of data (data collected qualitatively using focus group discussions and data collected quantitatively using a questionnaire survey). In simple terms, the Pearson correlation used in this study was to answer the question: Can the researcher use the questionnaire to represent the data drawn from individual

and focus group discussions? In Pearson correlation, two letters are used to represent the Pearson correlation, (p) for a population and (r) for a sample. In the Pearson correlation scale given in Table 4.2 there was a high significance relationship ($p=0.016$) among students who displayed positive attitudes towards the use of computers in relation to access. The Pearson correlation between the use of smart phones with positive attitude of students was significant at $p=0.000$. Lack of technical skills is a hindrance to learning but the good attitude of students and access to signature courses were highly significant ($p=0.000$). It was also significant ($p=0.000$) that students have a positive attitude towards the use of digi-bands when working offline. Comments from the focus group discussions emphasised that students do download their learning materials using their mobile smart phones, an issue that was also confirmed by the findings of this questionnaire survey. However, the questionnaire survey revealed that myUnisa remains very popular with the majority of students because it allows them enough chance to communicate with each other.

Further, the survey conducted confirmed that students find it easy to access their learning materials especially when they are at the campus because there is free wi-fi. Some of them (students) have even gone to the extent of indicating that they are now accessing the Internet from various places supplied by their municipalities. However, not all students registered at Unisa stay in places that have access to internet through wi-fi. From the above explanation it could therefore be concluded that the findings from this questionnaire survey confirmed that attitudes and beliefs are important in the adoption of technology as a learning tool since it has the implications for pedagogy and student engagement in assessment practices. As this study used qualitative interviews, followed by a quantitative research approach, the researcher can further claim that the study was able to offer and demonstrate results of high frequency and consistency

Table 4.2: Correlation of variables

Variable	Pearson correlation	Pedagogical	Attitudes	Access	Smart phones	Technical	Digi bands
Pedagogical	Pearson correlation Sig. (2-tailed) (N)	1 60	.102 .437 60	.040 .760 60	.034 .794 60	.181 .166 60	.205 .116 60
Attitudes	Pearson correlation Sig. (2-tailed) (N)	.102 .437 60	1 60	.309 .016 60	.487 .000 60	.677 .000 60	.453 .000 60
Access	Pearson correlation Sig. (2-tailed) (N)	.040 .760 60	.309 .016 60	1 60	.339 .008 60	.439 .000 60	.307 .017 60
Smart phones	Pearson correlation Sig. (2-tailed) (N)	.034 .794 60	.487 .000 60	.339 .008 60	1 60	.418 .001 60	.243 .062 60
Technical	Pearson correlation Sig. (2-tailed) (N)	.181 .166 60	.677 .000 60	.439 .000 60	.418 .001 60	1 60	.317 .014 60
Digibands	Pearson correlation Sig. (2-tailed) (N)	.205 .116 60	.453 .000 60	.307 .017 60	.243 .062 60	.317 .014 60	.1 60

*Correlation is significant at the 0.05 level (2-tailed)

*Correlation is significant at the 0.01 level (2-tailed)

4.4 ANALYSIS OF THE STUDY'S FINDINGS

By examining the effectiveness of technology for teaching, learning and assessment purposes using mixed methods research, the researcher was able to get a deeper understanding of the commonalities shared by lecturer-student pairs as well as important distinctions in each pair's experience with regard to alternative assessment. While the emphasis in the Signature Courses pedagogy lies in promoting student interaction using technology, the individual interviews with lecturers paid much attention to their perceptions and experiences regarding student assessment in technology-enhanced teaching and learning. When triangulating the findings from focus group discussions using a quantitative instrument (questionnaire survey), the researcher found that the findings concurred heavily with those from focus group discussions, thus validating the researcher's methodology. On probing the role of the TAs in facilitating a subject-matter related discussion and the approach of the Signature Course team to marking, the researcher found that the focus of the Signature Courses is on promoting peer communication.

From the individual and focus group discussions, the researcher realised that all the participants raised issues of challenges and constraints that Unisa faces in the implementation of ICTs. It is obvious that the potential to engage fully in digitised teaching and learning practices will not be fully realised in the absence of a reliable power supply. More rapid and successful implementation of ICTs is unlikely to occur unless the following barriers are addressed: power, internet connectivity and bandwidth, quality staff development, dedicated lecturers, and sustainability. At the time of conducting this study, South Africa was experiencing a severe power outage which literally affects the growth of our economy.

Further, the potential to increase Internet connectivity has risen substantially in the last few years due to laying and planned installation of communication cables. Yet, increased Internet connectivity and increased bandwidth are not possible if there is no commitment from the government and the private sector, particularly the mobile phone operators. The findings from both individual and focus group interviews revealed that power supply, Internet bandwidth, and computer hardware may all be available, but lecturers need to know how to use them effectively and efficiently. This point accentuated the advantage in having a positive attitude towards ICTs.

While in general, assessment in higher education is used among others, to grade students and to prepare them for the examinations, the Signature Courses curriculum has a different goal, which is to let students know that they can succeed by engaging themselves in collaborative and interactive learning. In pursuing that goal the approach to assessment in the Signature Courses curriculum is distinctly different from conventional courses at Unisa. While the study found that there is considerable peer interaction in the Signature Courses, the researcher also found evidence that in some cases the students in a given group did not engaged minimally with their assigned TAs as shown in this comment:

... No matter how much you post information on the website it will only be few students who are responding. There are podcasts and videos which are posted but you hardly hear students commenting about that information.

This comment was further corroborated by another TA who made the following comment regarding student participation in the discussion forum:

... No matter how much you remind them, they will not respond. They will only ask for the scope for the exam.

These are common comments that usually come from Signature Courses TAs. The researcher thus believes that a lack of student interaction or responsiveness in any given group should not be regarded as an indictment of the pedagogy. Nevertheless, the researcher has included these complaints in the interest of providing an holistic view of the Signature Courses and taking into account all the comments of the personnel involved. Inevitably, there will be flaws in any system or approach, especially in teaching and learning, and the researcher cited this as one of those flaws since it is impossible to control the extent of interaction in online conversation. However, the researcher raised this issue here as a pointer for future investigation so that the Signature Course team can take into account in their iterative thinking about course design. In one case, a TA shared frustration over students who do not appear to appreciate the importance of the resources available to them:

... As a teaching assistant who is paid monthly, I feel that Unisa students are not appreciating the available resources that are given in support of their studies. I am not sure about other modules. My students really are demotivating me because I deal with one and the same students. I have noticed that it is the similar students who are also responding to the tasks.

The same TA continued with frustration when making this comment:

... I sometimes think that the next cohort of students will be better but to my surprise they are all the same. I am not sure if they really are benefitting from me as a teaching assistant. The other frustrating issue is when I have to give a report to the primary lecturer about my interaction with the students. I do however enjoy a lot and also learn a lot from those few that participate.

Turning now to the cost implications of online learning, the researcher believes that the benefits of the Signature Course pedagogy outweigh the costs. This is confirmed by Mumtaz (2000); and by Sharma (2003) who reveal in their studies that financial and limited resources are great impediments for ICT implementation. Both lecturers and students in this study indicated that in order to increase ICT usage at Unisa, the costs on computers, charges on internet and other related consumables should be lowered as suggested by Namukangula (2007), Ssewanyana and Busler (2007). From the findings of this study as presented above, it could be argued that the higher cost of ICTs could not alone affect ICT implementation. This is confirmed by Ensafi, Zamir and Kahami (2007) who reported that the main obstacle in the growth of e-learning is not the high price of computers, but rather lack of government budgets for equipping universities with new computers and suitable hardware infrastructure.

The study also revealed that negative attitudes and fear of new technology are responsible for poor computer usage even when they are readily available and accessible to them. This finding is corroborated by Priscilla, Nida, Khambar, and Wong (2008) who found that lack of technical skills of computer functionality confused educators when attempting to integrate technology in teaching and learning. From the findings of this study it could be argued that to increase accessibility to ICT tools,

stakeholders need appropriate information related to costs so that alternative means of acquiring affordable peripherals can be sought. However, looking at the Signature Course curriculum as a model of an assessment-driven curricular design, it looks surprisingly innovative since it makes use of the new affordances of digital technologies while trying to pitch the level of responsiveness to the realities at Unisa. In conclusion, both interviews and the questionnaire survey conducted have shown that there is much room to improve Unisa's assessment processes by using technology as enabler for online teaching and learning.

4.5 CHAPTER SUMMARY

This chapter presented the analysis, interpretation, and discussion of the findings from mixed methods research (qualitative and quantitative) approach data. These findings were presented under the following major themes: Access to ICTs, lack of technical skills, knowledge and experience to use online resources, lecturers' and students' attitudes towards ICTs, student-engagement in assessment practices, student feedback, time constraints, workload, and lecturers' and students' readiness for online learning. Each of these themes was duly discussed under several sub-themes together with their raw data extractions. The findings of this study revealed that educators perceive and experience assessment as a tool to improve student learning and reflect on their learning practices. On the other hand, students perceive and experience assessment as a tool that assists and motivates them to improve their learning. The findings of this research study have implications for pedagogy and student engagement in open distance and e-learning environments. Next, Chapter 5 presents assessment guidelines for effective student assessment in ODeL environments.

CHAPTER 5

ESTABLISHMENT OF STUDENT ASSESSMENT GUIDELINES FOR ODL

5.1 INTRODUCTION

Chapters 1, 2, 3 and 4 of this thesis dealt with the first objective of this study which is to provide a record of Unisa lecturers' and first-year students' perceptions and experiences regarding the effective use of technology to enhance student assessment and feedback using the Signature Courses as exemplar. The second objective of this study is to establish assessment guidelines for effective student assessment in ODL environments. A major premise of this chapter is that assessment of student learning can generate data to support continuous improvement efforts necessary for documenting institutional effectiveness. It must be noted that institutional effectiveness may be measured in a number of areas including: student throughput and success rate, retention, job placement, physical infrastructure, management and administrative structures. While measurement in these areas is critical, it is not the focus of this chapter. Rather, this chapter will focus on providing assessment guidelines aimed at exploring innovative ways of providing effective student support and interventions through the use of electronic media and technology in an ODL environment.

The guiding idea behind these student assessment guidelines or practice guideline is that, if implemented properly in ODL contexts, they will help to enhance students' responsibility for, and control over, their own learning. In sum, this chapter draws together streams of evidence from the literature review and individual and focus group discussions to create a unified and integrated framework or guideline for providing effective student assessment in ODL. In the previous chapter, the researcher discussed the findings of the study by recording the perceptions and experiences of lecturers and first-year students involved in the Signature Courses at Unisa. These perceptions and experiences paint a picture of student assessment which could be used to plan and implement assessment practices more effectively and efficiently in ODL bearing in mind both the positive ideas lecturers communicated concerning their hopes, ideals and

expectations regarding assessment practices and the negative barriers they experienced in achieving these ideals.

Further, the researcher triangulated the findings of the study by performing a case analysis based on the two approaches used to collect data (a qualitative and a quantitative research approach). Unisa, like any other ODL institution, recognises the key role that assessment plays in the learning and teaching process. Fundamental to the establishment of these guidelines, is the need for an integrated and well-coordinated provision of support to student learning through the use of available technologies. According to Makoe (2010) effective student support is likely to lower the drop-out rates while at the same time increasing throughput and success rates. In this study, throughput and success rates refer to the number of students who enrol in an education programme and who pass the examination at the end of the semester and at the end of the year. At the same time the growing number of students exerts pressure on these institutions to provide a wide range of academic and tuition support services. Such an approach will not only enable universities to produce effective and quality course materials, but also enhance the quality of their graduates (Brown, 2004).

5.2 REFLECTIONS ON THE UNISA SIGNATURE COURSE PEDAGOGY

The literature reviewed in Chapter 2 of this study has shown that assessment plays an important role in teaching and learning. This section is therefore, presented in order to evaluate the Signature Courses pedagogy in terms of their assessment practices and suggests improvements where necessary, gesturing towards the future for Unisa (see section 2.6 of Chapter 2). According to Baijnath (2014a), the focus of the Signature Courses is on a student-centred online teaching and learning approach, with extensive student online mentoring and support, and alternative online assessment practices, while also developing prototypes for fully online courses as the university advances in its digitisation objectives.

In order to establish effective assessment guidelines in a strategic way it is appropriate to reflect on the rationale and purpose of using the Unisa Signature Course pedagogy as a model for future practice in which student teaching and learning is accomplished through the use of online facilities. In line with the global movement towards incorporating more efficient digital processes into teaching and learning, Unisa is in the

process of moving from a print-driven, manual, provider-centred academic architecture to a form of e-learning that is student-centred. The 2012 campaign, “Unisa is changing” was used to conscientise students, staff and the university community about its intention to move from print production and print delivery to an online delivery model. To prepare for this digital migration Unisa needed both ICT and human resource capacity to offer learning programmes and conduct administrative functions online. Further, it became obvious that Unisa would also need dedicated ICT professionals to support this initiative which is linked to curriculum development processes. To realise this intention, Unisa introduced the Signature Course Project in 2013 aimed at a decisive departure from conventional teaching and learning practices, which have been traditionally paper-based learning materials in which students relied on reading texts and submitting assignments with little or no interaction with the instructor (apart from written feedback on assignments) or their peers (apart from institutionally or informally arranged study groups).

In this context, Unisa Signature Courses are meant to encourage students to participate actively and effectively in their own teaching and learning so that they can have access to knowledge and experiences required to allow them to participate effectively in the economic and social growth of the country. Furthermore, the proposed guidelines are based on Siemens’ (2004) and Downes’ (2007) connective learning paradigm which regards technology as an enabler for teaching, learning and assessment practices in distance learning environments. Connectivism, as defined by Siemens (2004) and Downes (2007), is a learning theory suitable for digital technology. It is this digital technology that makes it possible for the students to be able to interact with their lecturers, peers and the institution without being restricted by time or place.

As a learning theory, connectivism places the students at the centre of the teaching and learning processes (see section 2.2.3 of Chapter 2 of this thesis). The use of technology for assessment purposes offers opportunities for the faculty to provide feedback immediately. Technology has the potential to provide improved measures of student knowledge and create more engaging assessment environments. However, this study has noted that whatever technology is used in student assessment, it cannot be a panacea for all assessment problems. To this end, it is now left for Unisa to shift to this new paradigm, connectivism, which is flexible and has other related advantages so as to achieve the ultimate goals of education in the digital age. While this section discusses

some of the facts that were discussed in the previous chapters, the emphasis here is on finding out what makes the Signature Courses so unique or different from other Unisa traditional courses.

5.2.1 The distinctive features of the Signature Courses pedagogy

Signature Courses are fully online undergraduate courses with large student numbers, using an online class model in which the large courses are divided into small groups of students, each of them being supported by a TA. At the inception of the Signature Courses, the idea was that students should register online and proceed digitally from start to finish of the course (Bajinath & Ryan, 2014). These affordances include responsive interaction between student and lecturers, student and peers. It has been discussed in the previous sections, chapters 1 and 2 in particular, that Signature Courses are embedded in a pedagogy known as heutagogy (see 1.13.4). Heutagogy has been defined by Blashke et al. (2014:5) as a means whereby a student takes responsibility for his or her own learning and in so doing develops a series of skills including communication and teamwork, creativity and innovation, and positive values (See section 1.13 Chapter 1). The relationship between the students and the lecturers is often reciprocal and highly collaborative, where the students work together to create shared meaning and to reflect about what and how they learned, and how to practise it (Canning & Callan, 2010).

In heutagogy, the student and the lecturer agree on a contract of learning in which they identify the learning needs and outcomes, negotiate the assessment practices and finally adapt the curriculum. Signature Courses are distinct from other courses offered at Unisa because of their unique pedagogy. For example, the focus of the Signature Courses is that students will be taught according to a heutagogical approach, based on informal learning and peer teaching. In the Signature Course pedagogy, students learn through their interactions and participation with their peers in an environment in which all those who participate are on equal footing—no one is assigned to take the role of the traditional lecturer or student. Essentially, in Signature Courses, students are taught to question themselves and increasingly take responsibility for their own learning (Mischke & Le Roux, 2012).

Signature Courses are defined as courses in which learning comes alive since students take an active part in their own learning (see 2.7.1). The Signature Courses curriculum is student-centred because the student becomes the focal point of any teaching and learning processes that take place. In the Signature Course curriculum, students and lecturers work together as co-creators of knowledge in order to achieve the learning objectives. Further, the lecturers' role is to facilitate the learning process by providing students with possible avenues to further information and knowledge. The issue of placing the student at the centre of the learning experience is a key principle of self-determined learning (Blashke et al. 2014). This principle is the opposite of teacher-centric or curriculum-centric approaches to learning (Hase & Kenyon, 2013).

Contrary to traditional or conventional courses where students are seen as passive recipients of information that is disseminated by the lecturer regarded as the custodian of knowledge, the Signature Course curriculum regards students as important partners in the teaching and learning process since they are involved in the formulation and negotiation of the learning outcomes and objectives. Both the student and the lecturer are active role players in the process of creating knowledge. The shifting of control from the lecturer to the student is one of the key activities in Signature Courses (see 2.7.3). In some of Unisa's traditional courses student learning is lecturer-centred since s/he decides what students should learn and how, whereas in the Signature Course there is co-operative and collaborative learning. In traditional learning, the lecturer also decides how learning should unfold. In this context, it is presumed that the lecturer has all the knowledge which is transferred to students through lectures, discussions or demonstrations.

The designers of the Signature Courses took cognisance of the fact that as much as the courses are done online, there could be students who do not have access to Internet. To mitigate this occurrence, the course designers decided to issue students with digi-bands equipped with all the study materials that students need. These digi-bands have the potential to allow students to work on their study materials when they are off-line, provided that they upload the digi-band when they are at a student centre or post-office or somewhere where they are able to connect to the Internet. Mischke (2015) indicates that the introduction of heutagogy as the pedagogy for Signature Courses, plays an important role because it expects students to be creators of new knowledge which they can share by using the power of digital tools. Furthermore, Mischke (2015) posits that in

the Signature Courses, students share their views with fellow students in online conversation forums and group discussion, do research online and also receive online updates and guidance from lecturers and TAs. Further, Mischke (2015) shows that Signature Courses are not only about lively conversation and interaction with others-the content of the course is just as engaging since they are conceived on a model which reaches towards the students' life-worlds and tackle real-life problems and matters of concern to society. Thus, the content of the Signature Courses is relevant and focuses on societal values and what defines good citizenship. This has already proved to be an effective way of reaching the students if the pass rate is a reliable indicator of student interest, engagement and success. Across the various Signature Courses, Unisa's pass rate increased from the normal average pass rate of traditional courses of 70.7% to 77.6%. A further possible reason for this increase in the pass rate could be attributed to the important role that technology plays in making student-lecturer and student-peer interaction possible, thus stimulating interest and commitment. Also, and importantly, the fact that students are paced throughout their course of study, by means of regular and frequent study tasks, encourages active engagement in their course work. Clearly, frequency of assignments and feedback, together with ongoing conversation online is a more effective way of learning than in conventional courses where students do one or two assignments per semester. On average, in the Signature Courses each student is expected to do a minimum of between 8 to 13 assignments per semester. The higher pass rate in the Signature Courses, then, is attributed to a number of factors including stimulating course content, frequency of assessment, digitally enhanced materials and delivery, engagement in the learning process, and collaborative learning with their peers throughout the course where the students are adjusting to become self-organised and participatory learners, engaging in weekly online tasks in order to accumulate credits towards their final mark.

In summing-up this section, the thrust that underscores the Signature Courses' approach is a desire to go beyond the simple acquisition of skills and knowledge as a learning experience towards a more holistic development in the student of independent capability. For example, the College of Agriculture and Environmental Sciences has a Signature Course entitled-'Environmental awareness and responsibility' (GGH 3708). In this Signature Course, students are introduced to the environmental principles that equip them with the knowledge and skills that will enable them to take care of their own environment. As part of the learning strategy students are physically involved in hands-

on-projects that encourage them to acquire practical skills on how to reduce the negative impact of human activities on the environment. Further, the online mode of delivery encourages interaction and enhances critical and collective thinking. In other words, students are not only exposed to theoretical knowledge, they are also required to show that they can apply that knowledge in the real world.

5.2.2 Student interaction and engagement in Signature Courses

One of the most important factors relating to the implementation of the Signature Courses pedagogy at Unisa is the element of interaction. Interactivity is an important feature that distinguishes the Signature Course curriculum from traditional Unisa distance education courses in its ability to enable high student-lecturer and student-peer interaction. Signature Courses make use of online student-lecturer interaction (STI). In the Signature Course pedagogy, student interaction becomes a focal point because such interaction leads to collaborative learning through the sharing of ideas and information, resulting in student becoming co-creators of knowledge rather than passive recipients of information (see 2.7.2).

Interaction in the context of distance education has traditionally been divided into three categories, as introduced by Moore (1989): (1) student-content interaction (SCI), (2) student-lecturer interaction (STI), and (3) student-student interaction (SSI). In the Unisa context, it is important for the lecturers and the students to have open dialogue because this makes students feel part of the whole teaching and learning process. The introduction of Signature Courses at Unisa has made it possible for regular dialogue between student and their TAs because the assignments are designed in such a way to allow students to interact or engage with fellow students, with lecturers, and with content (see 2.7.2). Student-content interaction has been criticised for its limited capability to include student-lecturer interaction or student-student interaction.

Owing to the absence of the right technology to sustain responsive interaction at a distance, many distance education practitioners and institutions placed undue emphasis on student-content interaction at the expense of student-lecturer interaction, let alone peer interaction yet these three distinct interactions are all important for student learning in both conventional and distance education institutions. In the current study, not all types of interactions are explored since the crux of this study focuses on understanding

interactions that include student-lecturer and student-student interactions. The reasons for not exploring all the types of interactions that we have in teaching and learning is because they are many and varied. Only those types of interactions that are relevant to this study are considered.

5.2.2.1 *Student-lecturer interaction*

Social constructivists posit that knowledge is generated or constructed by the student through his or her interactions in the environment. Social-constructivists believe that learning occurs through social dialogue and shared experiences (Su, Bonk, Magjuka, Liu & Lee, 2005). The lecturer's role in this case is to use various technologies and instructional activities that will help in deepening the student's understanding of the subject matter as well as fostering critical reflection and analysis skills. The high drop-out rate that is normally experienced in distance education institutions is said to be exacerbated by the low level of student-lecturer interaction. Currently, it has been established that the learning facilitation that lecturers are making in the Signature Courses is one of the factors responsible for increasing the pass rate and at the same time also reducing the drop-out rate. But another issue that needs our attention is that the instructor is well positioned to respond to the student's application of new knowledge. In the Signature Courses, the TA plays an important role in providing online counselling, and encouragement to students. Dialogue and interaction between lecturers and students is important because the two parties are able to collaborate and interact with each other.

5.2.2.2 *Student-peer interaction*

The second type of interaction that we find in the Signature Courses is student-student (or peer to peer) interaction. In the context of the Unisa's Signature Courses, students are divided into groups of 50 so that they can help each other when doing their assignments and other projects. The Signature Courses offer interaction between and among peers by making use of tools such as e-mail, discussion forums, blogs, and social media (see 2.7.1). The Signature Courses' mode of delivery has proved that participants' interaction with one another has the potential to overcome their isolation, a cause for concern in distance learning, and strengthen their relationship with the group. In Figure 5.1, the lecturer is at the top of the learning cycle, tasked with the

responsibility of facilitating the learning processes between and among students. However, it should be noted that both of these types of interaction-student-lecturer and student-peer take place in, and are affected by, the environment of the course, which is determined by its content and system.

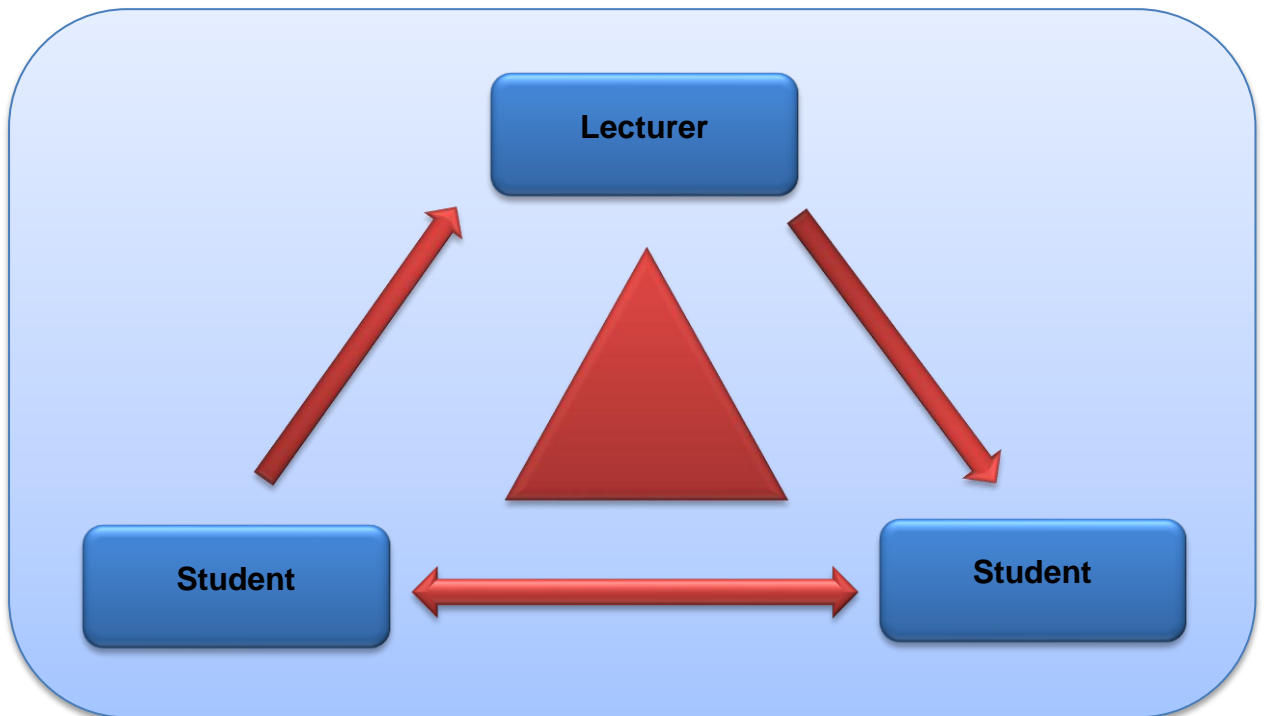


Figure 5.1: Student-lecturer and student-peer interaction

In the Signature Courses, instructional assessment methods are designed to promote student-peer interactions (see section 2.7.2 in Chapter 2). For example, team-based learning methods (dividing students into groups) are important because they help students to work closely with each other on a given topic or project. Participation in the discussion forums as part of assessment pushes students to join group conversations. Involving students in giving feedback and critiquing each other's work, and conducting peer evaluation and assessment all help to establish rich interaction among students. Findings regarding student-peer interaction indicate that students who interact more in online courses may achieve greater learning (Thurmond, Wambach, Connors & Frey, 2002). Also, collaborative group interaction can help in learning the course content and ease the feelings of isolation. The emphasis is on promoting collaborative group activities where interaction among students is essential. The Signature Courses curriculum uses the interactive potential of digital technology to help students reflect on the role of their discipline in the societal transformation of South Africa. For example, in

the Signature module called-Language through an African Lens-(AFL 1501) students learn how to interact successfully in a multicultural society, including how to demonstrate sensitivity to their own language usage and that of others (see Table 2.1 in Chapter 2). Students also learn how to interact with each other across cultures. Students are encouraged to interact with each other on regular basis using social media such as blogs, discussion forums, Face Book, Twitter, WhatsApp, etc. Another good example comes from the College of Economic and Management Sciences where the Signature Course called-Sustainability and Greed-(SUS 1501) provides students with opportunities to work on case studies that empower them with knowledge and skills that help them in taking sound decisions when a choice is to be made. In this module, students are expected to deliberate and participate in online tasks, thereby developing their critical thinking skills (see Table 2.1 in Chapter 2). In this context, instead of students becoming passive recipients of information from the lecturer, students become active and co-creators of knowledge.

Furthermore, Unisa Signature Courses provide students with a platform where they are able to support each other (peeragogy) in manageable small groups, which was not possible when using a traditional distance education delivery system. From this perspective, interacting with others and with learning materials seems vital for students since it affords them with opportunity to construct and create knowledge internally.

According to Bates (2012), interaction is necessary and desirable for successful online learning. Although this study has shown that there is regular interaction between students and their TAs, it has also indicated that not all students were found to be committed in engaging with their TAs all the time. This lack of engagement from the students' side was found to be exacerbated by difficulties of access to Internet connectivity and the high cost of being online. Despite this, the Signature Course pedagogy has proven to be successful in many ways and because the course designers are self-reflexive, they will endeavour to work at flaws and weaknesses that emerge as the courses progress.

5.2.3 The role of management and administration in the Signature Courses

Student support is one of the distinctive features of the Unisa Signature Course curriculum. However, student support cannot be undertaken properly in the absence of

an effective administration. Administration is an extremely important function since, without it, very little productive activity takes place. The concept administration refers to the systems which support the activities of a programme/institution and the people who make these systems work. For example, in the Signature Courses, management should make sure that the university together with the private sector and the government work together to provide our students with the ICT resources needed by students to work online. Good administration makes it possible for all arms of the institution to work together, whereas poor administration is disruptive and discouraging for distance education students. Student support is often seen as something an institution does to help its students to pass examinations. However, student support is far more than just the things the institution does. It includes a whole range of activities and people which surround the student in his or her learning experience. In the context of Unisa, student support is made up of six important sub-systems: The education programme, teaching materials (which is called teaching and learning materials), students' services (which is called student support), management, finance, and evaluation. It is common knowledge that distance education students are mostly separated from their providing institution.

However, the introduction of the Signature Courses has drastically bridged the transactional distance that used to exist between the student and the lecturer, and students and their peers, thereby mitigating student isolation. Currently, student isolation is no longer a major issue since they can interact with each other using online technology. For example, the College of Education's Signature module-Being a Professional Teacher (BPT 1501), teaches students the tenets of being able to create a conducive environment for teaching and learning (see Table 2.1). In this and other Signature Courses, the student and the lecturer, the student and his/her peers work as a team to create knowledge. But this teamwork cannot take place without efficient administrative processes in place: workable registration processes, streamlined assessment processes and ICT efficiency are obvious examples.

It could therefore be said that the success in distance education is as dependent on the quality of the non-teaching staff (e.g. coordinators, administrators, clerical and delivery staff, etc.) managing and executing the system as it is on the quality of the academic staff (e.g. course developers, TAs, examiners, etc.). For the Signature Course pedagogy to be successful there needs to be a holistic process which includes all the stakeholders or everyone involved in management, administration, registration,

dispatch, material development, curriculum, counselling, library services at whatever level, as well as those involved in providing teaching.

5.2.4 Student assessment and feedback in the Signature Courses

The assessment framework established here is informed by the Signature Course pedagogy (heutagogy) that is meant to pilot Unisa's transition from a predominantly print-based distance education university to a university which makes more effective use of what the ICT revolution affords. A heutagogical approach to learning calls for a heutagogical approach to learning assessment which implies that we view assessment not as a means to measure attainment of our learning, but more as a learning experience and not as a test we must pass. Instead, assessment should become an ongoing act of learning.

In the Signature Course curriculum the student is at the centre of the assessment process, that is, he/she is positioned in such a way that he/she seeks and receives guidance and feedback from others who have helpful guidance and feedback to offer. Further, students are in a position in which they can engage in self-assessment through critical reflection (see 2.4.2). Since students are divided into small groups of 50 it becomes easy for an individual student to share his or her ideas with an allocated group. As the main purpose of student teaching and learning is to help students achieve the outcomes, this assessment principle proposes that students should receive good formative feedback from the process of any assessment. Feedback should be received and attended to by the students in order to improve their tasks or their learning. Through the provision of effective formative feedback and active involvement of students in their own learning assessment could be improved (see 4.2.4).

In the Signature Courses, TAs and lecturers are always available online and are expected to respond to students within a period of 48 hours. In this context, if the teaching assistants and lecturers do not provide timely feedback or do not respond in a timely manner, students may feel discouraged and curtail their participation. As a result, value has to be placed on the degree of interactivity in formative assessments and on the immediacy and appropriateness of the feedback that students receive. Ideally, the kind of feedback described here should be followed by effective and active student engagement. For example, one well-established model of good feedback from Nicol and

Macfarlane-Dick (2006:207-214) proposes seven principles for effective student feedback as follows: Good feedback helps clarify what good performance is; good feedback facilitates the development of self-assessment in learning; good feedback delivers high-quality information to students about their learning; good feedback encourages lecturers and peer dialogue around learning; good feedback encourages positive motivational beliefs and self-esteem; good feedback provides opportunities to close the gap between current and desired performance; good feedback provides information to lecturers that can be used to help shape teaching. According to Thomas and Seely-Brown (2011), feedback from others more knowledgeable about specific topics, skill, or approach can provide us with the expertise that we need to support our on-going learning. In the Signature Course curriculum, for example, students are expected to complete a significant number of assignments per semester (on average students are expected to do 8-13 assignments). In other words, students are paced through the work by means of assignments, and formative assessment occurs regularly and frequently, weekly or bi-weekly, and is designed to be peer-driven so as not to exert pressure on markers or on the system. The attempts by the Signature Course designers to revolutionise the provision of feedback could be seen as a timely intervention for future of effective online learning. Based on the discussions made above the researcher presented the proposed student assessment framework in section 5.3 below.

5.3 TOWARDS THE ESTABLISHMENT OF STUDENT ASSESSMENT GUIDELINES

After reflecting on the findings generated from the mixed methods research (qualitative and quantitative), the researcher proposed assessment guidelines for effective student assessment in ODeL. The proposed assessment guidelines are based on technology as an enabler that could be utilised to enhance teaching, learning and assessment practices in distance education environments. As stated in the previous chapters (see 1.7 of Chapter 1), the general aim of this study is to determine the perceptions and experiences of lecturers and first-year students with regard to student assessment in ODL, but the ultimate aim of this thesis is to provide assessment guidelines whereby student support is improved through the utilisation of various available technologies (see Figure 5.2 of this Chapter). Further, these guidelines are meant to find out the extent to which Unisa's Signature Courses make effective use of online student-lecturer interaction. The guidelines are established with the aim of guiding ODL institutions on

how ICTs can be utilised to enhance and influence assessment practices as well as to provide policy makers with a structure of how student assessment could be conducted in ODL contexts. Given the significance of student assessment and its necessary integration into effective teaching and learning practices, developing a clearer understanding of what constitutes effective practice in relation to its use is now of key importance. Effective assessment systems are those that provide information of sufficient quality and quantity to meet stakeholder information and decision-making needs in support of improved quality of student-learning (Ravela, Arregui, Valverde, Wolfe, Ferrer, Martinez & Wolf (2008). These findings are similar to those of Harlen (2005), Boud and Falchikov (2006) who identify three important principles that form the foundation of effective and efficient student assessment. According to them, assessment should, first, be seen as an integral part of the learning and teaching cycle. Second, assessment guides students' development of meaningful learning and, third, assessment practices and processes must be transparent and fair. For any teaching and learning framework to achieve its objectives, there are principles that should be put in place.

In the proposed guidelines (see Figure 5.2) there are a number of principles that are important in the successful implementation of the Signature Courses. However, for the purpose of this study, only the following will be given attention: Information technology, information technology enhanced support, technology-enhanced learning curriculum infrastructure, continuous professional staff development, quality assurance, and programme monitoring and evaluation. In the past, the purpose of student assessment was to test students in order to determine whether they were able to understand and memorise the learning outcomes effectively in order to prove that they have understood the content when they write summative examinations (Boud & Falchikov, 2006). This was usually the case in situations where the process of learning was lecturer-centred.

In the Signature Course curriculum, learning is student-centred, that is, the student is no longer regarded as a passive recipient of the learning content from the lecturer. Instead, the lecturer and the student are partners in the teaching and learning process. However, the role that the lecturer is still that of a learning facilitator with the student as an active participant in the learning process. It is against this back-drop that the researcher presented these guidelines for effective student assessment in ODL. In order to understand the role that technology plays in the proposed effective student assessment

guidelines, the researcher provides a brief explanation of how all the components of the model fit and related to each other (see section 5.3.1 to 5.3.6).

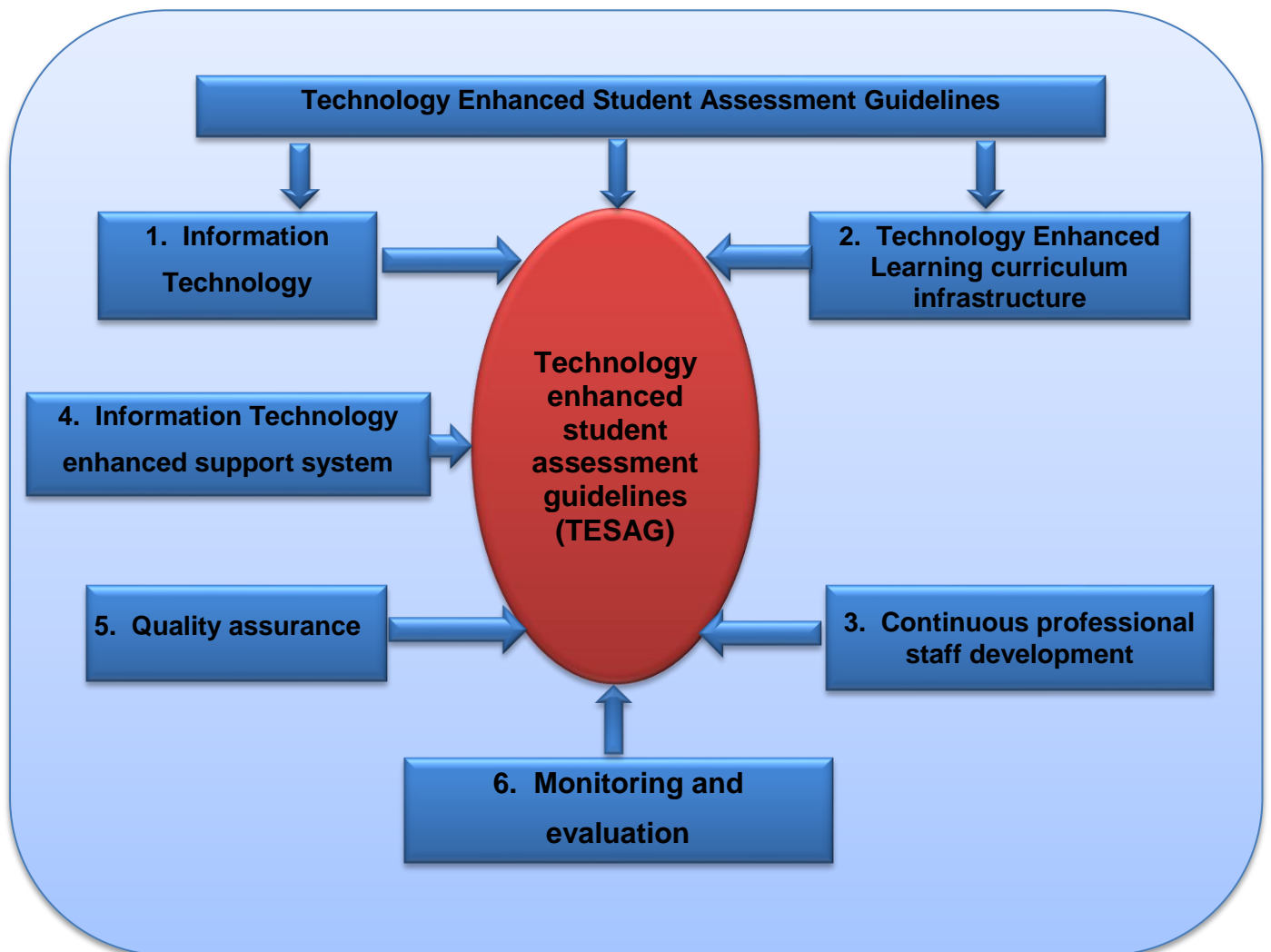


Figure 5.2: Technology Enhanced Student Assessment Guidelines (TESAG)

5.3.1 Provision of ICT infrastructure

Imperative to the successful implementation of Unisa's Signature Courses is an ICT network and ICT staff that fully understand and support effective interaction online teaching and learning. It is also important to note that in the early stages of the Signature Courses planning and development, ICT staff members were involved as team members who accompanied the Signature Courses Project Team to the United States of America to benchmark with other institutions that were already using online learning platforms such as the SUNY, Johns Hopkins University, Thomas Edison University, and Howard University, amongst others. To engage and commit an

institution to technology-enhanced learning activity, academics need to embed the technology into their learning activities. Ensuring that all academics have the opportunity to develop technological skills will require good and efficient management. Again, management should take responsibility for training lecturers who are responsible for leading the implementation of the Signature Courses on a continuous basis so that they are able to pre-emptively effect changes to the course material where necessary. It is therefore, important to have a well-structured management and administrative structure that is mandated to provide any logistical support needed by the students and the lecturers (see 5.2.3 of this Chapter).

Currently, at Unisa, the Centre for Continuous Professional Development (CPD) is responsible for training staff members across the board so that they are able to function properly in a digital world. It therefore, requires a lot of planning and coordination of resources to bring a university of Unisa's magnitude to run fully online. That is one of the reasons why it became necessary along the way for the project committee to visit as many institutions as possible in order to design a model which is fit for purpose. For example, in the Unisa context, the implementation of the Signature Courses relies on the TAs who are responsible for monitoring student interaction and engagement, ensuring that all assignments are implemented as designed, guiding and supervising the assessment process associated with each of the assignments, and providing feedback regarding student performance on specific assignments so that the course leader can make informed decisions about possible adjustments to improve student success. Furthermore, the use of technology for teaching and learning comes with several benefits, for example, through technology lecturers are able to provide immediate feedback and administer examinations to the student population without the restrictions of time and place. There is currently a general belief that the new generation of students expect to use digital tools that can accommodate their mobile lifestyles and adapt to their individual learning styles (Prensky, 2011:2). Against this back-drop it makes sense for to use technology that is available and relevant to us. Furthermore, academics need to be empowered to develop and learn the skills necessary to deliver the objectives, and at the same time should be provided with the opportunity to develop as technology enhanced learning specialists.

5.3.2 Technology enhanced curriculum infrastructure and pedagogy

A curriculum should ideally identify the desired learning outcomes for a learning programme whereas pedagogy is the philosophy which underpins teaching and learning experiences. Learning outcomes are also called performance objectives or competencies. They are brief specific statements which show what learners should be able to achieve and the conclusion of the instruction activity. Learning outcomes are derived from course objectives which are general statements reflecting the goals and outcomes of the course. Furthermore, the ideas of learning outcomes shift the emphasis from the study of content measured in units or hours (a teacher-centred approach) to what it is the student will take from the course and how he/she will apply the acquired knowledge or skill to his/her future work and life. This idea ties well with the Signature Course pedagogy because it takes into account the student's life world. A well-designed curriculum should be able to align teaching methods, learning outcomes and assessment criteria (Simonson., Smaldino., Albright & Zvacek, 2012). In other words, curriculum expectations, subject and performance criteria, and desired learning outcomes should be simply and clearly described.

Learning outcomes are statements of what a student should know, understand or be able to demonstrate after completion of a process of learning (Biggs, 2003). It is from these outcomes that lecturers can determine what assignments can be used to measure the progress towards student learning outcomes. For example, in the Signature Courses the outcomes of the modules were the first to be formulated and the next was the development of the assessment criteria. What the lecturer and the students do is aimed at achieving the objectives of the module as set out in the curriculum. For example, in one of the Signature modules entitled "Being a professional teacher" (BPT 1501), the curriculum teaches students how to make a difference in other people's lives. Further, they are also encouraged to have a positive life outlook, and to work collectively for the benefit of the whole community. To achieve the learning outcomes both students and lecturer are expected to have knowledge and skills that can enable them to work in an online environment. Assessment is most effective when it is based on clear and focused goals and objectives. Further, assessment works best when the programmes it seeks to improve have clear, explicitly stated purposes.

5.3.3 Continuous professional staff development

Continuous staff development is one of the important factors in technology-enhanced learning implementation, as emergence of new technologies and their implementation in the institution and application in the teaching process are impossible without continuing professional development. The success of using technologies in education depends not only on the development of ICT tools, but even more importantly on organisational factors that influence the need for technological process (Brown, 2004; Gipps, 2005). Professional development should be implemented and encouraged by adjusting suitable methods that respond to both organisational and staff needs, and fulfilling policy, strategic goals and values of the organisation. Many lecturers who are expected to teach online courses should consider taking at least one online course plus some on-going faculty development training on issues of e-learning. In the literature review section of this study, the researcher indicated that technological readiness is a prerequisite for educators to be able to teach or work online (see 4.2 of Chapter 4).

In order for Unisa to implement technology-enhanced teaching and learning, staff competencies should be developed continuously, allocating resources adequately to the budget of technology-enhanced learning in order to train staff on participation in online environments, on ICT pedagogical competencies, and in curriculum design. Continuing professional staff development should be organised in such a way that members of staff are made aware of the training possibilities that are available. It is, therefore, important for management to make sure that enough and up-to-date ICT infrastructure is put in place specifically to provide continuous training to the members of staff.

5.3.4 Technology enhanced student support system

Higher education in general and lecturers at distance learning institutions in particular are constantly challenged to increase the effectiveness of their teaching by improving their rate of student support and engagement. Currently, the biggest challenge facing distance education institutions in South Africa today is to identify student support services that are appropriate and relevant to the South African context (Makoe, 2012). Pedagogical support is necessary for the lecturer, as technology itself does not change the way of teaching. Research carried out by Graham, Woodfield and Harrison, (2013), Jacklin and Riche (2009), and Neyland (2011), on student support perceptions found

students to be generally happy about the support provided, which included various dimensions, for example, friendly tutors, special help for the disabled students and social networks. The most efficient way to reduce the impact of negative factors upon successful teaching and learning is the implementation of a good support system. Skills in technology management, selection of technologies and their functioning in the teaching and learning environment are very important for the organisation intending to use technology enhanced teaching and learning. Educationally, it is now a known fact that technology does more than overcome distance (Brown & Czerniewicz, 2010; Bayne & Ross, 2014). For example, the appropriate and relevant use of technology can modify conditions for distance education students to such an extent that they feel as if they are in a traditional classroom. Undergraduate student throughput and success rates in distance education institutions in South Africa are an aspect of major concern because of their geographical isolation and lack of institutional support.

It is important to note that students need to be involved as active partners in the teaching and learning processes and these processes should be facilitated through continuous support. The changing role of academics includes recognising students' difficulties, guiding students in various assignments, directing groups' work, encouraging students to present their solutions, and developing methods for the students to provide feedback to one another (Pundak, Herscovitz, Shacham & Weiser-Biton, 2010:7), contrary to traditional distance teaching where only the study content is presented to a passive student to read and memorise for the exams. Unisa, as an ODL institution should develop policies that support the integration of technology-enhanced learning. This is supported by Olapiriyakul and Scher (2006) who state that educational institutions should provide lecturers with rules and guidelines on how to prepare an effective online learning or blended learning courses. Currently, student support relies much on ICT because it allows for the sharing of information with and between students using both synchronous and asynchronous communication methods. Technology provides the student with possibilities to access and interact with peers, lecturers and the institution. However, it should be borne in mind that in order to provide relevant student support, teaching and learning should be properly planned and properly organised.

5.3.5 Quality assurance

Despite a long and generally successful track record, distance learning is still required to prove that the quality of student learning is at least equivalent to face-to-face teaching. For ODL universities to compete with face-to-face institutions it is important to make sure that the issues of quality assurance and transparency are considered very seriously so that students never feel frustrated in the assessment process. Quality assurance is needed in distance education, firstly, to improve student access to course presentation and process, and secondly, to improve education efficiency by providing increased opportunities for collaborative and problem-based learning (Gipps, 2005:171; Inglis, 2005; Sharma, 2001). Thirdly, quality assurance improves the effectiveness of education by facilitating and encouraging student interaction with learning materials. Further, for assessment to be successful in distance learning, it is suggested that institutions should start adopting academic assessment audits, that is, to engage in self-reflexive thinking around assessment strategies so that we can improve if there is need. Where necessary, external advisors should evaluate our assessment and evaluation procedures and recommend if the strategies are still suitable for the institution to continue using them.

Quality of assessment is one of the key features of good teaching. Quality assurance should therefore be an integral part of any ODL operational systems and processes (Rumble, 2004:16). In the early stages of planning and development of the Signature Courses, quality assurance overshadowed every step that was being done in the production of the courses. The Project Team was rigorous on quality and external advisors were involved at every stage of the writing and planning of the study materials. For assessment to be of high quality at Unisa this framework suggests that everybody who participates in any way in the development or implementation of the assessment system is responsible for helping to ensure that assessment and examinations are of high quality.

5.3.6 Programme monitoring and evaluation

The main aim of programme monitoring and evaluation is to check and monitor whether the objectives of the programme or project are being met. In the Signature Courses assessment processes are monitored on a regular basis since the whole programme is

assessment driven. For example, in the Signature Courses students are expected to do a minimum of between 8 and 13 formative assignments which are always subjected to continuous review and evaluation. The reason for giving students these continuous or formative assignments is to enable students to make improvements in their learning endeavours. In the Signature Course context, management plays an important role because through programme monitoring and evaluation they are able to determine whether the Signature Courses are meeting the objectives as set out from the time when the project was launched in 2013. Again, it is through monitoring and evaluation, that management could agree that for Signature Courses to be successfully implemented there is need for Unisa to have a user-friendly and fully functional technological environment. Furthermore, for Signature Courses to be successful there is need to provide effective leadership, administrative commitment, adequate resources, and staff development opportunities.

5.4 IMPLICATIONS OF THE GUIDELINES ON STUDENT ASSESSMENT

The goal of this assessment framework is to put the focus on the student and provide best practice information on how to effectively and efficiently assess student achievement of the learning outcomes. The researcher believes that by documenting progress toward and achievement of learning outcomes through assessment evidence, a large step will be taken towards documenting institutional effectiveness. This framework has been established as a starting point for identifying indicators that can be used to review ODL assessment systems and plan for their improvement. The ultimate aim of this framework is to provide students and lecturers and other interested stakeholders with a positive learning experience. Further, the framework established here is envisaged to provide policy makers with a structure of how effective student assessment should be conducted in ODL contexts using technology as an enabler.

The framework established has the potential to promote understanding of the significance of student assessment in ODL contexts. Further, this assessment framework could provide data that lecturers can use to evaluate and implement assessment activities in distance education delivery systems. This framework advocates an approach to teaching, learning and assessment which involves all parties, so that students are involved in a community of practice. If students are active in the assessment and feedback processes, this has the capacity to turn each item of

assessed work into an instrument for further development of each student's learning. It is assumed by this researcher that if the above is included as part of the curriculum, students' experiences and conceptions of assessment of learning will go a long way in improving student success in ODL. Therefore, it suffices to say that assessment needs to be integrated into the process of teaching and learning. While this framework is contextualised to the situation at Unisa, it could also be applicable to similar ODL institutions. Furthermore, the proposed assessment framework will work effectively if the principles discussed are taken into consideration. In summary, it is worth noting that this study is an attempt to shift educational thinking towards a student-centred approach that would allow lecturers and students to engage with each other in the student assessment processes. While the functionality of the proposed framework is established by this study, the effectiveness of the framework has not been validated.

5.5 CHAPTER SUMMARY

The objective of this chapter was to establish assessment guidelines for effective student assessment in ODeL environments. The assessment guidelines established here was informed by the results of the study generated from the research method used, namely, mixed methods research. Results of this study show that lecturers perceive the student-lecturer and student-student interactions to be key factors in high quality online programmes. It is assumed that this framework will create a better understanding of how effective student assessment can be implemented in ODL contexts. Next, Chapter 6 discusses study recommendations and conclusions of the study.

CHAPTER 6

SUMMARY OF THE STUDY FINDINGS, CONCLUSIONS, RECOMMENDATIONS, LIMITATIONS, AND IMPLICATIONS

6.1 INTRODUCTION

This chapter concludes the thesis by presenting a summary of the study findings, conclusions, recommendations, limitations and study implications. One of the objectives of this study was to share knowledge on how emerging ICTs can be used to transform, enhance and influence student assessment practices in ODL environments. To this end, this study has established a guideline for effective student assessment in ODeL contexts. The findings from this study will provide information that may be used to evaluate and implement assessment practices in an ODeL delivery system. The literature study that was conducted in Chapter 2 of this thesis discloses the importance of assessment in ODeL. The detailed results of the study reported in Chapter 4 provide descriptive answers to the following research questions:

- What are Unisa lecturers' experiences, perceptions, attitudes and beliefs toward ICT integration into the Signature Course curriculum to enhance student assessment practices at the University of South Africa?
- What are Unisa first-year students' learning experiences of using ICTs for learning purposes in Signature Courses curriculum?
- Are Unisa lecturers and first-year students pedagogically and technologically ready for e-learning and e-assessment?
- How can ICTs be used to improve student assessment in ODL environments?

The answers provided to the research questions assisted in the achievement of the following study objectives:

- To explore Unisa lecturers' experiences, perceptions, attitudes and beliefs regarding ICT integration in student assessment in ODeL contexts.

- To explore Unisa first-year students' experiences of how technology can be used effectively to enhance student assessment and feedback in ODeL in terms of learning quality and teaching efficiencies.
- To find out if Unisa lecturers and first-year students are pedagogically and technologically ready for online learning.
- To establish guidelines for effective student assessment in ODeL environments.

This chapter is divided into the following sections. The first section presents a summary of the study's major findings. The second section consists of conclusions. The third section presents the recommendations and suggestions for further study and research. The fourth section presents reflections on the approaches used to conduct the study. The fifth section presents the limitations of the study. The sixth section presents implications for this study. The problem investigated in this study has brought some important results and conclusions regarding the topic under investigation. Furthermore, this study unmasked many areas that still need additional research. In this chapter the objectives of the study will be evaluated to determine whether or not they have been achieved. This chapter therefore, gives a summary of the findings from Unisa lecturers' and first-year students' perspectives. While perhaps the most important principle of assessment is that it should enhance student learning, this study is not just about the lecturers' and first-year students' perspectives, it is about student assessment in the context of ODL. The ultimate purpose of the study was to ensure that assessment practices add significant value to student learning and motivation. In the following section a summary of the study's major findings is presented.

6.2 SUMMARY OF THE MAJOR FINDINGS OF THE STUDY

This thesis has demonstrated how technology enhances teaching, learning and assessment in both distance and traditional face-to-face higher education institutions. The researcher's analysis focused on the role that technology plays in bridging the gap that exists between the students and the lecturers, student and their peers by exploring Unisa lecturers' and first-year students' experiences using a mixed methods research approach. In the following section the researcher briefly rehearsed the most significant findings that emerged from the individual and focus group discussions held with lecturers and students. Using the guidelines established in this thesis, (see Figure 5.2 in Chapter 5), a number of important themes emerged namely: Access to ICTs, lack of

technical skills, knowledge and experience to use online resources, lecturers' and students' attitudes towards the use of ICTs, student engagement or involvement in assessment practices, student feedback, and lecturers' and students' readiness for e-learning (see section 4.2.1 of Chapter 4). The first theme, access to ICTs had the highest frequency rate in the interviews from the perspectives of both the lecturers and first-year students. In this study, technology is seen as an enabler for teaching and learning. Further, technology was found to be a game changer in both distance and conventional education. The advent and introduction of technology in education has affected teaching and learning as well as and, most particularly, assessment. Further, the study revealed that appropriate and pedagogically sound technology can reduce workload, save time and provide feedback immediately (See section 4.2.5, 4.2.5.2 of Chapter 4).

The theme, 'lecturers' attitudes towards the use of ICTs', aimed at measuring or addressing lecturers' and first-year student's attitudes towards the use of educational technologies for teaching, learning and assessment purposes. The results of the interviews revealed that lecturers' and students' attitude play an important role in influencing the effectiveness of ICT in education from a variety of perspectives (see section 4.2.3 of Chapter 4). This notion is supported by Watkins (2003) who indicates in his study that academics' attitudes play an important role in influencing the effective integration of ICT education from a variety of perspectives. Accordingly, the development of lecturers' positive attitudes towards ICTs is a key factor in the enhancement of computer integration and avoidance of their resistance to computer use (see section 4.2.3 of Chapter 4).

In this study, both participants indicated that lack of technical skills, knowledge, and experience in using online technologies hinders effective implementation of technology for learning and teaching purposes (see 4.2.2 Chapter 4). Furthermore, the study found that for lecturers and students to work properly using online resources, they need to have both technical skills and experience related to digital technology. Through this theme it was discovered that some of the students who took part in the study did not have experience on how to use online technologies for learning purposes and as a consequence they found it difficult to participate effectively in e-learning activities. Another important theme which emerged as a result of individual and focus group discussions was that of student engagement or involvement in assessment practices.

According to Krause (2005), engagement is the quality of effort students devote to educationally purposeful activities that contribute directly to desired outcomes. In this theme it was found that student engagement in their own learning forms part of constructive learning because it encourages them to focus on the learning outcomes (see section 4.2.4 of Chapter 4 of this study). Most distance education students are geographically isolated throughout the country and it is clear that engaging them is a challenge. Mafenya (2013:84) indicates that student engagement is important because it addresses the problem of isolation. Further, the study indicated that student engagement is critical for retention and success, especially in distance learning settings where students have little or no face-to-face interaction with their classmates or lecturers. In this regard, the advent of technology, particularly mobile phones, has changed the face of student engagement in distance education. Involving students in their own assessment was found to play an important role because students are put in a position where they are able to conduct self and peer-assessments as is the case in Signature Courses.

This study also found that student feedback plays an important role in motivating the student to improve their learning endeavour (see section 4.2.4 of Chapter 4). Under this theme two important sub-themes are noted, namely, time constraints and workload. The findings from this theme showed that lecturers teaching distance education students courses do not have enough time to provide timeous and meaningful formative feedback to their students and as a result there are situations where students sit for examinations without having received their formative feedback. The theme was found to be interwoven with workload because the more workload lecturers have the more difficult it becomes for them to provide feedback on time. Again, it should be noted that this is only applicable to those traditional Unisa modules or courses that are not offered online. The point serves as a telling comparison between conventional distance courses and the online Signature Courses. The comments made by some of the participants indicated that students have an expectation that feedback should be provided soon after they have handed work in to their lecturers or teaching assistants as is the case in Signature Courses (Hughes et al. 2011:3). Most of the participants who took part in this study see feedback as facilitative in that it involves provision of comments and suggestions to enable students to make their own revisions and, through dialogue, helps students to gain new understandings without dictating what those understandings will be. As a result, value has to be placed on the degree of interactivity between the

lecturer and the student, and the student and his/her peers (Evans, 2013:71). The first sub-theme, time constraint was identified as one of the most important factors determining student success in ODL. It emerged during the interviews that time constraint is related to both workload and student feedback because time factor makes it impossible for lecturers to provide timeous feedback and interact or engage with students. Ninety five percent of the lecturers interviewed showed that the time is by far the most significant variable linked to student feedback and workload (see section 4.2.5 of Chapter 4).

The second sub-theme, workload, was found to be exacerbated by high student enrolment. This was particularly pertinent to those modules or courses that are still paper-based and are not done online. Using the lecturers' experience of assessment in both these conventional paper-based courses as well as their experience in engaging with the Signature Courses, the researcher was able to throw into relief the major challenges emanating from traditional (paper-based assessment) and show by contrast, how these challenges dissipate or disappear altogether in the case of the Signature Courses. This has major implications for the framework as it would be shown later in this chapter. The interviews with lecturers revealed that, as in most institutions of higher learning worldwide, workload does not only refer to the marking and provision of student assignments. Lecturers are also expected to carry a full university role that includes teaching, research, community engagement and administration. However, in the Unisa context, workload was found to be a pressing problem because in conventional courses it can compromise the process of providing adequate and timely formative student feedback (see sections 4.2.5.1 and 4.2.5.2 of Chapter 4). This point crosses over to the students' experiences of enrolling for both conventional courses at Unisa and for the Signature Courses. The interaction that exists between the student and the lecturer, student and peers is drastically bridged because of technology.

The study found that if more Unisa courses were to be designed and taught online by means of an innovative curriculum that is technologically driven like that of the Signature Courses, several of the issues pertaining to the provision of timeous feedback and workload burdens could be relieved or alleviated. The foregoing discussion concludes the study's first objective namely, the exploration of Unisa lecturers' and first-year students' experiences, perceptions, attitudes and beliefs regarding assessment practices in ODeL with special reference to Signature Courses. The interviews

conducted also revealed that at the inception of the Signature Courses Project in 2013, some students were skeptical of Unisa's intention to go online because not all of them had access to the internet. However, a few years down the line, Signature Courses have become so popular that students are asking for an extension of this pedagogy to all Unisa courses. Further, the themes discussed in this study have shown that the adoption of technology for teaching and learning is still developing at Unisa because it is still confined to the Signature Courses, postgraduate studies and a few departments though it is Unisa's intention to go fully online in the near future. Next, some concluding remarks pertaining to the second objective of the study which is the establishment of a framework for effective student assessment in ODeL environments are provided.

The second objective of this study was to establish a framework for effective student assessment in ODL environments (see Figure 5.2 in Chapter 5). The assessment framework conceptualised here emerged from the literature review, as well as the individual and focus group discussions conducted with all the participants, triangulated by means of a quantitative instrument, a questionnaire in this context (see Annexure 6 attached). This integrated assessment framework was aimed at providing policy makers and other interested stakeholders with a structure of how effective student assessment could be conducted in ODL contexts. The framework established in this study is considered important because institutional success and effectiveness is judged or measured through student assessment processes.

Given the importance of student assessment in teaching and learning, the establishment of a framework becomes vital because it allows the institution to have reflective mechanisms aimed at improving student learning and assessment administration. In the literature review section of this study, Chapter 2 in particular, three important principles were identified that form the basis of good effective and efficient student assessment, namely: (1) assessment forms an integral part of the teaching learning cycle, (2) assessment guides students' development of meaningful learning, and (3) assessment practices and processes must be transparent (Boud & Falchikov, 2006). While the purpose of this study was not to discuss student assessment in general, applying this framework or guideline in assessment provides both a means of evaluating the completeness of students' assessment in distance education and an indication as to whether they have encountered a positive learning experience.

6.3 CONCLUSIONS

The main objectives of this study were to explore and assess Unisa lecturers' and first-year students' experiences of technology as a tool that could be used to enhance student assessment in ODL contexts using the Signature Courses at Unisa as an example of good practice. Second, the study sought to establish assessment guidelines for effective student assessment in ODL based on the Signature Course model. To achieve the first objective, the study employed an exploratory mixed methods research (qualitative and quantitative) approach using individual and focus group discussions as data collection strategies. Furthermore, the researcher used a quantitative instrument (questionnaire) to triangulate the results from the focus group discussions. From the individual and focus group discussions, the following themes emerged:

- Access to ICTs
- Lack of technical skills, knowledge, and experience to use online resources
- Lecturers' and students' attitudes towards ICTs
- Student engagement in assessment practices
- Student feedback
- Lecturers' and students' readiness for e-learning

The findings presented in this study demonstrate that the purpose of student assessment is to further student learning and support students with formative feedback, in addition to providing measures for success. Literature on student assessment along with research evidence identified that assessment supports student learning in both distance and traditional higher education institutions. The findings of this study reveal that technology-enhanced teaching and learning plays an important role because it has the ability to promote interactivity and collaboration between lecturers and students, students and their peers, student and the institution when compared with traditional paper and pencil forms of distance education. Further, the introduction of the Signature Courses curriculum played an important role by charting the way for Unisa to make more comprehensive use of digital technologies and a carefully thought out pedagogy in which assessment-driven instructional design is appropriate given the context and tradition in which Unisa students find themselves. The Signature Course pedagogy therefore is exemplary in foregrounding formative assessment, in devising innovative

forms of assessment and in ensuring that such assessment takes place regularly and frequently to ensure a continuous learning experience. This study suggests that university support is also needed to promote alternative assessment tools. In addition, this study found that some of the lecturers and students still lack skills, knowledge and experience to use online resources effectively and efficiently. Therefore, important actions need to be taken in relation to staff development. Additionally, the literature review has demonstrated that when designing a pedagogical model, it is prudent to consider the contemporary technological levels, as well as the context and historical models, in addition to the key aspects of open learning.

The study also found that since Unisa is transforming its teaching and learning strategy from traditional correspondence to online learning, there is also a need for the university to revisit its current assessment procedures and look to include more alternative assessment methods in current programmes in order to accommodate the current technological development that the world is experiencing. It is also important to acknowledge that this study was undertaken in a developing country which still experiences problems of unreliable power supply and other technological challenges. The unreliability of power supply is a challenge for the majority of Unisa students since this has a negative impact on accessing technology. With this in mind, the Signature Courses made use of digibands to allow students to work offline when necessary. As can be summarised from the above discussion, increased use of technological affordances can fast-track student feedback and reduce lecturer-workload regarding marking and administration of student assignments.

In the literature review section of this study, several studies have shown that technology, as an enabler, has the potential to enhance student assessment and feedback (Falchikov, 2005). On the basis of the findings from individual and focus group discussions, the study revealed that assessment related dialogue between students and lecturers is vital in enhancing student learning and fostering a common understanding around the purposes of assessment. It is clear that the integration of technology enhanced learning needs careful and systematic planning to ensure success. In conclusion, the researcher has shown in this thesis that a careful blend of appropriate digital technologies with a pedagogical approach designed to match the context and circumstances of students can overcome many of the traditional challenges of ODL. The researcher has focused on the Signature Courses to demonstrate this finding, and

has focused particularly on the ways in which assessment is planned and performed in these courses resulting in increased student involvement in teaching and learning by means of course materials relevant to the students' life worlds, a heutagogical approach that respects students' local knowledge and experience and applies this knowledge intelligently through peer assessment in small online groups overseen by a teaching assistant and relevant mentoring. The researcher's explication of these findings took the form of a guideline for possible future practice (see Figure 5.2 in Chapter 5).

6.4 RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER STUDY

Informed by the conclusions of this study, the researcher presented recommendations for educational practice, theory and further research on student assessment in ODL. The general aim of this study is to determine and explore lecturers' and first-year students' perceptions and experiences regarding the ways in which the use of appropriate digital technologies enhance and influence Unisa's assessment practices, particularly in online courses. Research results prove that online interaction and Internet self-efficacy are significant factors for students' satisfaction in online learning settings (Kaminski., Switzer & Gloeckner, 2009; Kuo., Walker., Beland & Schroder, 2013). Technology has made it possible to extend our reach beyond the walls of an institution since it can facilitate student success in a variety of ways (Georgina & Olson, 2008). This research study therefore, recommends that, technology should not be seen as a panacea to all our teaching and learning challenges, but instead it should be seen at best, as an enabler, a tool that must be applied effectively and appropriately alongside pedagogical design, research and practice.

Underpinning this aim is the imperative to provide effective student support. The students' success and the success of the institution depend not only on the quality of the learning package that is sent to students, but also on the quality and scope of the support that the student is given. A quality distance education programme is about helping students to succeed. Supporting the distance students includes providing them with career and academic counselling, access to tutoring, access to library services, social support services, financial planning and management, as well as technical support services. Currently there is a growth in the number of people furthering their studies through distance education all over the world. A point of note is the fact that all those people need support so that they can be successful in their studies. According to

Tait (2003), technology can be used to provide student support provided it is context based. This new and expanded version of student support requires interaction between lecturers and students. Through these interactions, student isolation is reduced (Mafenya, 2013:84). It has been proved through research that student isolation is responsible for student retention in distance learning environments. Based on the above explanation, this study recommends that student support should be seen as a prerequisite for learning and again as an integral component of the learning design rather than as a separate structure within the institution in the learning process.

In the literature reviewed, student feedback was found to be the cornerstone of student assessment in distance education contexts (Evans, 2013). Alternatively, within the socio-constructivist paradigm, feedback is seen as facilitative in that it involves provision of comments and suggestions to enable students to make their own revisions and, through dialogue, helps students to gain new understandings without dictating what those understandings will be (Wenger, McDermott & Synder, 2002; Archer, 2010; Carless, et al. 2011). It is therefore important for lecturers to explain to the students what assessment feedback is for and how to use it by integrating it more clearly into the teaching and learning processes. Against this back-drop this study recommends that lecturers should find out how learning is shaped by the type of assessment feedback they receive.

As with many research studies, this study raises many more questions than it was able to answer, and throughout this study a number of them have been brought forward. It was not the purpose of this study to determine the relationships among assessment activities because this research study was limited to the exploration of lecturers' and first-year students' experiences of student assessment practices using Unisa Signature Courses as exemplar. In the light of the recommendations made above, a comparative study of the relationship between assessment of learning methods in teaching and learning in Signature Courses could be done. While specific distance education practitioners advocate for students' inclusion in the process of their own assessment, additional research from multiple perspectives is necessary to conduct a study to measure and determine the importance and effectiveness of student engagement in their own assessment. This research study has provided enough and convincing evidence that formative assessment is highly effective in raising levels of student achievement, however, little is known about the integrity of summative assessment's

results when measured against those achieved through the use of formative or continuous assessment. Against this back-drop, additional research on the credibility of summative assessment as an assessment strategy in ODeL needs to be conducted. It would also be of interest to conduct a study comparing and contrasting assessment techniques used by distance education providers in the context of our country and elsewhere. Further research could also be done to determine lecturer-student relationships in carrying out assessment practices in ODeL. There is also a need to do a study assessing learning outcomes in specific learning areas using the Signature Course pedagogy. It would also be interesting to do research aimed at unmasking the impact that lecturers' perceptions and experiences have on student assessment in ODeL contexts.

Another issue warranting further investigation is the impact that time factor and workload have on lecturers' ability to provide effective student feedback in ODeL environments. As discussed in Chapter 4 (four) of this study, this is arguably the most contentious area of this investigation, particularly within the context of Unisa. A comparative study could also be undertaken to reveal the extent of these issues in other institutions similar to Unisa. Building upon the results of this study, it would also be helpful to examine how assessments are interpreted and used in ODeL. Currently, technologies play an important role in narrowing the gap between students and peers, students and the university, students and the lecturers.

As e-learning is becoming popular in many institutions across the world, the evaluation of students' readiness for e-learning is more critical than ever before for the successful implementation of e-learning as a platform for various learning environments, particularly in developing nations. There is a large and diverse literature on student readiness for e-learning in both conventional face-to-face and distance education, but there appears to be less information on the pedagogical and technological readiness of our students for e-learning. Similarly, further study is needed to assess the advantages and limitations of using technology for assessment purposes in ODL environments. This researcher has attempted in this thesis to extrapolate results on this issue but there is room for further research. To validate the findings of this study, the researcher suggests that additional studies on student assessment and interaction in ODL would have to be conducted in this regard.

6.5 REFLECTIONS ON THE STUDY METHODOLOGIES

The objectives of this study were, first, to explore and describe Unisa lecturers' and first-year students' experiences regarding student assessment practices in ODL, and second, to establish integrated assessment guidelines for effective student assessment in ODeL. In chapter 3 of this study, the researcher described the research methods and approaches used to conduct the study. After all the data had been collected, transcribed and analysed the researcher reflected on the chosen approaches (mixed methods research) to see if they were able to assist in meeting all the objectives as set out at the beginning of this study. The researcher believes that the chosen approaches were helpful and appropriate because they allowed the participants to give their personal views and experiences without influence from any other source. Through the approaches adopted, the following major themes emerged: Access to ICTs, lack of skills, knowledge and experience to use online resources, lecturers and first-year students' attitudes towards ICTs, student engagement, student feedback, time constraints, student engagement, lack of technical skills and infrastructure for online learning, lack of computer training, technical and pedagogical readiness, institutional readiness, student readiness, staff and management readiness. These themes were all described in detail in Chapter 4 of this study.

Although the methodologies used were appropriate for this study, the researcher kept on reflecting to ensure that they were valid and appropriate for the end to be achieved (the writing of this thesis). On the basis of the research approaches used, the researcher concludes that this study has brought a better understanding of student assessment using technology affordances in ODeL institutions. The researcher also asked important questions regarding the trustworthiness of this study. First, were the methodologies appropriate enough to help in the researcher achieving the objectives set at the beginning of this study? To address this question, the researcher believes that research methods were indeed the best under the circumstances because they helped to achieve the stated objectives.

The researcher's second important question: Was the research rigorous enough to produce the results which other scholars or readers could use in future? Where rigour is concerned, Kvale and Brinkmann (2015) declare that "a study can be evaluated accurately only if its procedures are sufficiently explicit so that readers of the resulting

publication can assess their appropriateness.” The researcher’s third question: Is there any possibility that the researcher’s study could be repeated in one way or another? The researcher’s feeling was that there are possibilities for the study to be repeatable by other scholars since all the methodologies and approaches were explicitly explained in a chronological way. Further, it is possible to do further research on student assessment practices in distance education as shown in the recommendations for further study in this chapter. The researcher can therefore say that the methodology and approaches used have helped in achieving the study’s objectives. Last, but not least, when conducting this study the researcher was confronted with several limitations and challenges which would be explained in the next section.

6.6 LIMITATIONS OF THE STUDY

Although this study yielded the results that the researcher hoped to achieve in terms of the research paradigm, design, conceptual framework and the objectives, there were some unavoidable limitations and challenges that must be recognised. Like all case studies, the interpretation of this study’s findings is limited in several ways. While data elicited from the participants provided valuable insights in relation to lecturers’ and first-year students’ experiences of assessment practices in ODL, it must be acknowledged that these experiences were from Unisa, and as a result, the findings from this study cannot be generalised to other ODL institutions. Although a fair number of lecturers and first-year students took part in this study, readers should be aware that this is a single-case study that explored online Signature Courses only in relation to conventional distance courses.

Further, the study is limited to the use of a mixed methods research approach (qualitative and quantitative) only. Another challenge was the issue of getting enough people to participate in the study. The researcher would have liked to include as many participants as possible in order to get a broader understanding regarding the topic under investigation, but limited resources made this impossible. Furthermore, the practice guidelines proposed in Chapter 5 of this study has limitations in that it has not been applied or tested. In the final part of this chapter, the researcher briefly discusses the implications of the study’s findings and how they can impact student teaching, learning, and assessment in ODeL contexts.

6.7 STUDY IMPLICATIONS FOR PRACTICE AND ASSESSMENT

The findings from this study contributed to the body of literature on student assessment in distance higher education institutions. The results of this study revealed that technology has the potential to bridge the gap or distance that normally exists between student and the lecturer, student and his peers. It is in this context that technology becomes an enabler since it encourages interaction and collaborative learning to take place. Further, findings from this study demonstrated that time constraint and workload are by far the two most important factors that affect student assessment practices at Unisa, particularly in regard to traditional Unisa courses and in cases where lecturers are teaching both a Signature Course and other more conventional courses. This study has also shown that student feedback and student engagement play an important role in supporting student learning and motivation. Despite the fact that there were some limitations as discussed in the preceding sections of this study, the study was able to show that if there is need to change the curriculum, change the assessment. Assessment should be a learning experience, encouraging students to use higher order thinking skills. A progressive step in the assessment system is the opportunity for students to receive feedback on their work by the integration of assessment tasks into the learning process in order to align learning and instruction with assessment.

The study's findings support the suggestion that small steps to change student assessment in an ODL delivery system can result in relatively big changes in students' learning and results. Finally, this study provided guidelines for effective student assessment that is suitable for use in both face-to-face and distance education institutions. It can, therefore, be concluded that even though the study was able to achieve all its objectives as set out at the beginning of this research, there remains scope for future research on the topics discussed in this study. Nevertheless, the researcher believes that the findings from this study have made a contribution to the body of knowledge on assessment practices in ODeL by building a foundation, albeit one that is restricted to a particular ODeL institution in South Africa, for understanding lecturers' and students' perceptions and experiences regarding student assessment.

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ANNEXURES

ANNEXURE 1: PERMISSION TO INTERVIEW UNISA ACADEMIC STAFF AND FIRST-YEAR STUDENTS

Office of the Vice Principal: Research and Innovation
University of South Africa
P.O. Box 392, Unisa
0003

Dear Madam/ Sir

REQUEST FOR PERMISSION TO INTERVIEW MEMBERS OF THE ACADEMIC STAFF AND FIRST-YEAR STUDENTS AT UNISA

I, Nkhangweleni Patrick Mafenya, a registered D. Ed: Curriculum Studies student with the University of South Africa, hereby request for the permission to interview Unisa academic staff and first year students so that they could assist me in collecting data for the study entitled '***Effective assessment in open distance and e-learning: Using the Signature Courses at the University of South Africa as a model for future practice.***' The purpose and objectives of the study will be explained to the participants before participation. Participants' right to privacy and confidentiality will be respected at all times and they will be protected against any harm whatsoever. No names of participants will be revealed at any stage of the study or in any publication and they will be free to withdraw from the study at any time if they so wish. The research participants will be allowed to review the research data (member checking). I hope you will find this to be in order. Your co-operation in this matter will be highly appreciated.

Yours faithfully

Mafenya N.P. (6638597)

E-mail Address: mafennp@unisa.ac.za

ANNEXURE 2: ETHICAL CLEARANCE CERTIFICATE



COLLEGE OF EDUCATION RESEARCH ETHICS REVIEW COMMITTEE

17 May 2016

Ref : **6638597/2011/008**

Student : Mr NP Mafenya

Student Number : 6638597

Dear Mr Mafenya

Decision: Ethics Approval

Researcher: Mr NP Mafenya
Tel: +27123376182/+277793308661
Email: mafennp@unisa.ac.za

Supervisor: Prof. P.D Ryan
College of Education
Department of Curriculum and Instructional Studies
Tel: +27828204721

Proposal: Effective assessment in Open Distance and e-Learning: Using the Signature Courses at the University of South Africa as a model for future practice.

Qualification: D Ed in Curriculum Studies

Thank you for the application for research ethics clearance by the College of Education Research Ethics Review Committee for the above mentioned research. Final approval is granted for the duration of the research.

The application was reviewed in compliance with the Unisa Policy on Research Ethics by the College of Education Research Ethics Review Committee on 5 December 2011.

The proposed research may now commence with the proviso that:

- 1) The researcher/s will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.*
- 2) Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the College of Education Ethics Review Committee. An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for*



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the research participants.

- 3) The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study.

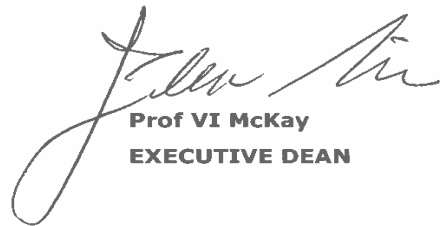
Note:

The reference number **6638597/2011/008** should be clearly indicated on all forms of communication [e.g. Webmail, E-mail messages, letters] with the intended research participants, as well as with the College of Education RERC.

Kind regards,



Dr M Claassens
CHAIRPERSON: CEDU RERC
mcdtc@netactive.co.za



Prof VI McKay
EXECUTIVE DEAN



oval template 2014

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ANNEXURE 3: PARTICIPANT CONSENT FORM FOR INTERVIEW

FULL TITLE OF THE PROPOSAL: Effective assessment in open distance and e-learning: Using the Signature Courses at the University of South Africa as a model for future practice.

I have read and understand the nature of the research and agreed to participate voluntarily as requested. I agree to the following statements:

- 1. I confirm that I have read and understood the information sheet for the above study and have had the opportunity to ask questions.
- 2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reasons.
- 3. I agree to take part in the above study.
- 4. I agree to the interview/focus group being audio-recorded
- 5. I agree to the use of anonymized quotes in publications
- 6. I agree that data gathered in this study may be stored in a specialist data center and may be used for future research.

Name of participant-----Date----- Signature-----

Name of researcher----- Date-----Signature-----

ANNEXURE 4: LECTURERS INTERVIEW GUIDE

Research title: Effective assessment in open distance and e-learning: Using Signature Courses at the University of South Africa as a model for future practice

Student: Nkhangweleni Patrick Mafenya

Degree: D. Ed: Curriculum Studies

1. What impact does technology-enhanced teaching and learning have on student assessment at UNISA?
2. What is your attitude towards ICT integration into the curriculum to enhance student assessment at the UNISA?
3. What are the purposes of giving feedback and what type of feedback do you currently use? In your viewpoints, what are the characteristics of effective feedback?
4. How do you engagement your students in assessment practices at UNISA?
5. How do time constraints affect student assessment at UNISA?
6. What are your perceptions and experiences regarding workload and its impact on student assessment at the University of South Africa?
7. What modes or types of assessment do you currently use to assess students in Signature Courses? Why do you use these types and for what purposes?
8. What are your viewpoints on other alternative assessment tools-self-and peer assessment in particular?

ANNEXURE 5: STUDENTS FOCUS GROUP DISCUSSION GUIDE

Research title: Effective assessment in open distance and e-learning: Using Signature Courses at the University of South Africa as a model for future practice

Student: Nkhangweleni Patrick Mafenya

Degree: D. Ed: Curriculum Studies

1. In your view, how can we use technology as a tool to enhance student assessment in open distance learning contexts?
2. In your opinion, how can we use technology as a tool to enhance student feedback in distance education?
3. What is your attitude towards the use of information communication technologies as a learning tool that could be utilised to enhance teaching and learning in distance education contexts?
4. What makes you to think that technology will make your work easier?
5. What are your viewpoints on student involvement in their own assessment?
6. What skills are required for one to be able to operate in an online environment?
7. In your personal opinion are all UNISA students technologically and pedagogically ready to go online?

ANNEXURE 6: FIRST-YEAR STUDENTS' QUESTIONNAIRE SURVEY

My name is Patrick Nkhangweleni Mafenya. I am conducting a study on assessment practices in open distance and e-learning. I am interested in knowing your experiences, perceptions, attitudes and beliefs towards the use of technology as a tool to enhance and influence the process of student assessment and feedback at Unisa using Signature Courses as an exemplar. Signature Courses are fully online interactive courses that were introduced at the University of South Africa in 2013. Based on your experience as a distance education student enrolled at Unisa, show the extent to which you agree or disagree with each of the statement below by marking the appropriate box with an X. **1=Strongly disagree, 2=Disagree, 3=Partially agree, 4=Agree, 5=Strongly agree.** All the information you provide will be treated confidentially. Kindly respond and email back your responses to the following email address: mafennp@unisa.ac.za

No	Item variables	1	2	3	4	5
1	Student assessment in distance learning can be enhanced through online learning					
2	Unisa first-year students are pedagogically ready for online learning					
3	Internet can be used as a valuable resources that could be used to reach students anywhere anytime					
4	The introduction of the Signature Courses put the utilisation of internet at the forefront of teaching and learning					
5	Not all first-year students had confidence in their abilities to use online learning resources					
6	An individual with computer experience has more positive attitude towards the use of computers for learning purposes than one who is not experienced					
7	A student who has undergone ICT training usually develops positive attitudes towards the use of computers					

No	Item variables	1	2	3	4	5
8	Mobile phones have the potential to be effective tools for teaching and learning					
9	Currently, most of the students studying at Unisa access the internet from their homes using smart-phones.					
10	Lack of computer skills and knowledge are serious impediments for online learning.					
11	If all students have access to the internet, it can be possible for them to write their examinations from their homes and work stations.					
12	The advent of smart phones has gone a long way in solving the issue of student access to the internet.					
13	Most students studying at institutions of higher learning in South Africa are familiar with digital devices and know how to use internet.					
14	The skills needed to access the internet from a smart phone are similar to the skills needed to access the internet using a computer.					
15	Having access to a computer is essential when studying for one of the Signature Courses.					
16	It is possible to complete all the assignments in one of the Signature Courses using a smart phone.					
17	Lack of technical skills and experience to use online resources are a hindrance for online learning.					
18	Technology has been welcomed at Unisa because it has the potential to bridge the gap between the educator and the student.					
19	Technical challenges like power failure, lack of technicians to maintain computers make online learning difficult.					
20	Through Signature Course students experience the importance of interacting with their peers.					
21	Many students enjoy doing Signature Courses because it is online and allows them to view their peers' work.					

No	Item variables	1	2	3	4	5
22	Students prefer working online to studying with books and paper.					
23	Students have positive attitudes towards the use of the digi-bands.					
24	Reading other students' points of view is very enlightening in distance education.					
25	Students have no difficulties in accessing the university through the use of MyUnisa portal.					
26	Students' attitudes and beliefs towards online learning will determine future e-learning initiatives at the university.					
27	I would recommend the Signature Courses to other students					
28	Unisa should develop other online courses in line with the Signature Courses.					
29	Student-peer interaction is important in technology enhanced teaching and learning					
30	Social networks can be used for student support in distance education					