ON-LINE LEARNING AMONG HEALTH STUDIES' STUDENTS AT AN OPEN DISTANCE LEARNING INSTITUTION: PROSPECTS AND CHALLENGES FOR INTERACTIVITY

by

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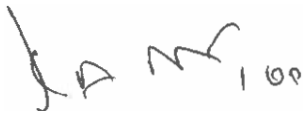
DECLARATION

I declare that **ON-LINE LEARNING AMONG HEALTH STUDIES' STUDENTS AT AN OPEN DISTANCE LEARNING INSTITUTION: PROSPECTS AND CHALLENGES FOR INTERACTIVITY** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete reference and that this work has not been submitted before for any degree at any other institution.



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ABSTRACT

The purpose of this research is to explore students' on-line interactivity in an Open Distance Learning institution with other students, educators, study materials and Unisa as the sampled prototypical research subject. A mixed-method of research encompassing both explorative and descriptive aspects was used. Data was collected through myUnisa discussion forum, focus group interviews and an on-line questionnaire from second and third year Health Services Management students at the University of South Africa (Unisa).

Although the findings indicated that 84.9% of students owned computers, and 100% owned cellular phones, only 3.8% participated in the discussion forum. On-line discussion forum are critical in Open Distance Learning (ODL) because it allows people who cannot physically attend the educational institution to interact with each other. Almost 40% of these sampled students agreed that the discussion forum allowed them to study with their peers. However, only 53 of the 1,379 students registered for both second and third year studies during the first semester participated in the discussion forum. This indicates that very few students benefit from on-line interaction.

Most of the students who are enrolled in Health Services Management course are from 21 to above 50 years of age. This age factor can have an impact on computer literacy. Some of them indicated that they struggled with the utilisation of technology. The majority of these students do not utilise the prescribed on-line interactive tools effectively. Students' need support cognitively, academically, administratively, institutionally and affectively. The findings suggest that although students are aware of the benefits of using online technologies, they do not have the support from the institution to enable them to better their skills in using these technologies. The other

challenge that they have raised is that educators also interact minimally on-line. Therefore, they do not receive the necessary feedback they require. The university systems are sometimes offline, which becomes worse during registration and submission of assignments.

The recommendations emanating from the study warrants various interventions of multiple stakeholders to resolve the students' challenges.

Key concepts:

Educator; students; health services management; higher education; interaction; interactive learning; learning; learner; myUnisa; on-line learning; open distance learning; Unisa.

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Dedication

I dedicate this academic endeavour posthumously to my parents, Mr THIBEDI and Mrs MAMOLLI MATLALA, both of whom inculcated a culture of erudition and academic excellence in me during my youth.

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LIST OF ACRONYMS AND ABBREVIATIONS

ADR	Audio Digital Recorder
BBM	BlackBerry Messenger
BLM	Bloemfontein
BSN	Bachelor of Science in Nursing
CCBSE	Country Central Board of Secondary Education
CD	Compact Disk
CET	Cooperative Externalisation Technique
CT	Conversation Theory
CT	Cape Town
DBN	Durban
DF	Discussion Forum
dPBL	Distributed Problem Based Learning
DDE	Directorates of Distance Education
DE	Distance Education
DVD	Digital Video Recorder
EFA	Education for All
EL	East London
EMAIL	Electronic mail
FAQ	Frequently Asked Questions
FTE	Full Time Equivalence
HMA	Health Module Administration
HSM	Health Services Management
ICT	Information Communication Technology
IFL	Intelligent Flexible Learning
IT	Information Technology
IRB	Institutional Review Board
LMA	Learning Management System
MMS	Multi Media Services
NIOS	National Institute of Open Schooling
NSBA	National School Boards Association
ODE	Open and Distance Education
ODL	Open Distance Learning
OTDMM	On-line Top Down Modelling Model
PDA	Personal Digital Assistant
POL	Polokwane

PTA	Pretoria
RN	Registered Nurses
SA	South Africa
SADC	South African Development Communities
SAS	Statistical Analysis Systems
SAS	Student Access Statistics
SMS	Short Message Service
SRL	Self-regulated Learning
TA	Theory Acquisition
TD	Transactional Distance
TV	Television
Unisa	University of South Africa
USA	United States of America
VC	Video Conference
WebCT	Web Communication Technology
WWW	World Wide Web
ZPD	Zone of Proximal Development

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CHAPTER 1

OVERVIEW OF THE STUDY

1.1 INTRODUCTION

The 21st century has been proliferated by rapid developments in information and communication technologies (ICT). Issues of educational reform never have been more urgent than now. Networked digital technologies and teaching techniques have continued to evolve and are augmented optimally to learning as a process of knowledge and information dissemination (Tomei 2008:686, 693). On-line interaction has become another ICT-based means of facilitating learning in this post-modern era.

On-line learning systems are described as interactive network systems consisting of various functions for supporting a virtual classroom to enhance teaching and learning (Lin 2007:817). A significant benefit of on-line interactivity to facilitate learning is that it allows people who cannot physically attend the educational institution to interact with each other and one another asynchronously. It allows learners from many different cultures to learn together and benefit from each other's experiences. On-line learners are individuals who can collaborate with their peers by means of communication technology (Clarke 2008:17).

As most nurses undertake post registration training, learning without disruption to the workplace is increasingly attractive to employers. Learners do no longer have to physically leave their work environment in order to attend courses offered face-to-face. Through interaction they learn from each other, share and discuss information related to their learning (Bedford 2008:64). Open Distance Learning (ODL) allows employed adult learners who have family, and other responsibilities to update knowledge and skills related to their work by saving travel costs and allowing flexible learning and/or work schedules (Park & Choi 2009:207). ODL is referred to as a multidimensional concept aimed at bridging the time, geographical, economic, social educational, and communication distance between student and institution, student and academics, student and courseware, and student and peers.

ODL focuses on removing barriers to access learning, flexibility of learning provision, student centredness, supporting students and constructing learning programmes with the expectation that students can succeed (University of South Africa 2008:1). Regardless of the form of distance education being designed, one element that should be uppermost in the designers' minds is the extent of students' participation that is needed, and the manner in which the participation is to be engineered (Moore & Kearsley 2012:113).

On-line interactive technologies in education provide an effective learning environment that breaks limitations of time and space, and also creates many associated benefits - including learner-centredness and the capability to facilitate knowledge re-use and sharing. Although academic institutions have invested substantial resources in on-line interactive learning technologies, the benefits of such a system will not be realised if learners fail to use the system effectively and in a user-friendly manner (Lin 2007:817).

When students engage in human interactions, their internal self-regulated learning (SRL) factors work together with the human interaction context to produce unique on-line self-regulated learning, including: interactions between affect/motivation and human interactions; interactions between meta-cognition and human interactions; and interactions between cognition and human interactions (Cho & Jonassen 2009:118).

Irrespective of the opportunity afforded by the University of South Africa (Unisa) for the learners to interact on-line through on-line interactive tools, the researcher is concerned with most Health Services Management (HSM) students' minimal use of on-line interactive technological tools; or their lack of on-line interactivity. HSM learners are mostly adults who are registered for a post-basic course in the Department of Health Studies at Unisa.

These learners differ as far as cultural backgrounds, working environment, learning styles and technological exposure are concerned. The majority of these learners, if not all, are 'baby boomers'. They are not from the 'Y generation'. This study explores the HSM learners' utilisation of on-line technologies and the extent to which these technologies enhance interactivity and experiences of learning in an Open Distance Learning (ODL) environment (Unisa 2008:2).

Interaction of the learner with herself/himself, other learners, technologies, educators, the study materials, and with higher education institution (HEI) is of critical importance insofar as facilitation of learning is concerned.

The hypothesis for the study is how can learners be supported to interact on-line in an ODL environment? How can on-line interactive tools be used to enhance interaction between and among learners, learners-to-educator, learners-to-study material, and learner-to-institution?

1.2 BACKGROUND

The evolution of distance education is generally described as “generational”, a term that relates to the technologies and pedagogies prevalent at a particular time (Roberts 2009:91). However, there is a large body of learners that have yet to be reached, and providing access to them while ensuring equity poses definite challenges for the ODL system. The ODL system has the capacity to integrate the state-of-the-art technologies with the time tested methodologies. It is therefore imperative to examine thread-bare issues associated with social, economic, political academic and technological aspects of the system in the emerging scenario (Dikshit & Garg 2009:1).

The focus on a methodology for distance education usually becomes a focus on technology. As students in ODL environment begin the work of learning, they need continual access to educators, libraries and other student resources. Students should have adequate access to resources appropriate to support their learning. The education institution should assess the students’ ability to succeed in on-line learning (Tomei 2008:687, 719).

As an ODL institution, Unisa expects that learners interact mainly by means of different technological tools for them to succeed in their learning. The learners should actively interact on-line with other learners, educators, the university, the content and the study material for them to succeed academically by using the myUnisa link called the discussion forum. myUnisa is a Learning Management System (LMS) which is a website developed for on-line interactivity by Unisa. This LMS is used by Unisa registered students.

By posting information on the discussion forum link of the website by the educators and university administration, learners are encouraged for example, to form study groups and reminded to engage with their assignments as a way of facilitating learning. For learners' effective learning to take place, there is a need to interact face-to-face or electronically with their peers, educators, the higher education institution, and the study material (Unisa 2008:3).

Besides the web-site links, Unisa also considers other modes of interaction. For example, video and audio conferences, use of Short Message Service (SMS) electronic mail (email), podcasts and Internet in their teaching and learning. These modes of interaction also promote social interaction. Learners should be engaged actively in on-line interactive modes of communication to assist in learning facilitation. As active agents in the on-line learning mode, students are expected to create social and academic relationships with peers and instructors; participate in group discussions, and initiate interactions in learning processes such as asking questions, posting messages, providing help, or seeking help (Unisa 2008:3).

Distance learning as a field of education focuses on the pedagogy, technology and instructional design that aim to deliver education to those students who are not physically "on-site" as in the traditional classroom (Saikia 2011:72). Enrolment in distance education and on-line environments has thus increased because of advances in information and communication technologies, changing economic times and the desire to improve skills (Ring 2012:1).

Fully on-line courses are also becoming progressively more popular because of their "anytime anywhere" learning flexibility. Asynchronous discussion forums are some examples of the ways students interact with each other and with the instructors within fully fledged on-line learning environments. Despite this form of interaction, students' engagement in on-line discussion forums does not take place automatically (Nandi, Hamilton & Harland 2012:5).

It is argued that on-line learner participation is a complex process of taking part and maintaining relations with others, and is supported by physical and psychological tools, but is not synonymous with talking or writing as it is supported by all kinds of engaging

activities. It is also argued that participation and learning are inseparable (Hrastinski 2009:78).

Administration of a quality ODL programme depends on clear and accurate communication to students. Qualified educators and support staff should be recruited, and should be provided with development opportunities related to instruction, content knowledge, and technical skills. Most importantly, these educators and support staff should receive feedback on their teaching. There is no use for the resources to be made available to support ODL programmes if the educators do not utilise them optimally. ODL educators are likely to have the desired attitudes and understanding of the ODL teaching and learning process. For faculty members to succeed in ODL, they need to be supported with accurate and complete information and training in order to develop their skills and understanding (Tomei 2008:687). The administrators of higher education institutions will face increasing demands for funding, technical support, new curricula and skilled personnel (Chao 2009:3).

Health educators have also joined other academic colleagues in offering on-line learning opportunities at an increasing rate (Reeves & Reeves 2008:46). The emergence of the ODL system is an inevitable and phenomenal evolution in the history of educational developments internationally. While the formal system of education continues to be the main stream of educational transaction, it has its inherent limitations with regard to expansion, provision of access and equality, as well as cost-effectiveness (Dikshit & Garg 2009:1).

Maximum interactivity of learners' on-line distance education is strongly supported by ODL institutions. To interact optimally, the learner should have knowledge and be motivated and supported to utilise on-line interactive tools.

Successful learners in on-line courses are a selected group, motivated, self-directed, comfortable with using technology, not afraid to experiment, and are able to work alone with minimal guidance (Tomei 2008:719).

Although interaction has long been a defining and critical component of the educational process and context, it is surprisingly difficult to find a clear and precise definition of this concept in education literature. For the next generation everything is interactive! People

now interact with their Personal Digital Assistants (PDAs), send text messaged on their mobile phones that have Internet connections and programmes, work on their notebook computers, and play on-line games. How is on-line interaction different from face-to-face interaction? What are some of the characteristics of on-line interaction? In on-line interaction, participants cannot see the other person's body language, or even detect an individual's attitude. On-line interaction does however, afford certain modalities that are specific to the Web medium as opposed to face-to-face classroom learning situations (Olaniran 2010:242).

Activities on the discussion forums help learners to share and gain knowledge from each other. However, setting up discussion forums does not ensure that learners interact with each other actively (Nandi, Chang & Balbo 2009:665). Hence the study aims to explore learners' online interactivity in an ODL institution, with other learners, educators, and study materials. Furthermore, the study seeks to explore the efficacy of online interactive tools in the enhancement of interaction in teaching and learning.

The goal of HSM is to develop learners into future leaders, managers and educators. Interactive on-line learning in an open distance environment enhances flexibility; afford learners' opportunity to advance their career while engaged in multiple roles of being a parent, employee and learner. ODL also caters for diverse learning styles of learners, such as auditory and virtual learning.

1.3 PROBLEM STATEMENT

Phenomenal growth in the number of on-line nursing courses has occurred at the associate, baccalaureate and graduate levels. However, studies are scarce on the nursing student experience of community in on-line courses. The few existing studies were not exclusive to nursing but also included participants from other related disciplines. Nursing has embraced on-line learning, but has not examined the impact and possible influences on student nurses.

A study was conducted in Midwest region of the United States of America (USA) explored nursing perception of on-line community. (Gallagher-Lepak, Reilly & Killion 2009:134).

Within the South African context with specific reference to Unisa being an ODL institution providing the research milieu, learner support and interactivity are enforced on myUnisa. Interactivity between the learners-to-learners, learners-to-educators, learner-to-study material, and learner-to-the-university, are of crucial importance in the enhancement teaching and learning. Notwithstanding this importance, myUnisa is not maximally utilised by HSM learners.

The above-cited minimum on-line utilisation was observed when the researcher studied the activities of the HSM learners on myUnisa's statistical links. In most instances, the researcher found no HSM learners in that site's link. The concern is that its utilisation is not optimal. When on-line distance learning was first proposed as a visible alternative to site-based education, many predicted the demise of traditional colleges and universities. The critiques stated that the ability to take courses to students asynchronously would mean that the traditional "bricks and mortar classrooms" would cease to exist, replaced by "a go anywhere" virtual institution (Doyle 2009:56). Arguably, the enhancement of on-line interactivity in virtual classrooms of ODL institutions has not led to the cessation of the traditional bricks and mortar classroom.

However, despite a plethora of on-line interactivity tools that learners have access to, learners' on-line interactivity still remains a problem. Although interactivity is often considered to have a positive influence on persuasion, research on interactivity effects is actually very mixed.

Interactivity and enhanced elaboration can facilitate persuasion by providing users more control over relevant information. Also, interactivity and enhanced elaboration may require more cognitive resources (Liu & Shrum 2009:53).

This study then, seeks to explore the learners' on-line interaction in an ODL institution with other learners, educators, study materials, with the open distance learning institution, and to determine the nature of on- line interaction between the learners and educators. The fact that learners interact minimally on-line and do not utilise on-line interactive tools effectively, is of major concern. The focus of on-line interaction in ODL environment amongst HSM learners also addressed prospects and challenges of interactivity.

1.4 PURPOSE AND OBJECTIVES OF THE STUDY

The purposes and objectives of the study respectively address the general aims or goals and specific intentions of this study.

1.4.1 Purpose

The purpose of this study was to explore the extent to which the on-line interactivity tools are utilised by the HSM learners in an open distance learning institution to facilitate learning.

1.4.2 Objectives

The objectives of the study were the following:

- to determine the nature of on-line interaction between the learners and educators
- to explore the learners' on-line interactivity in an ODL institution with other learners, educators, study materials, and the open distance learning institution itself
- to determine the extent of efficacy of on-line interactive tools in the enhancement of learner-to-learner, leaner-to-educator, learner-to-study material, and learner-to-ODL institution interaction

1.5 RESEARCH QUESTIONS

The following research questions guided this study:

- What is the nature of on-line interaction between the learners and the educators?

- How do second and third year HSM learners interact on-line in an ODL institution with, other learners, educators, study material and the open distance learning institution?

- How can on-line interactive tools be used to enhance learner-to-learner, leaner-to-educator, learner-to-study material, and learner-to-ODL institution interactions?

1.6 SIGNIFICANCE OF THE STUDY

This study will contribute towards a better understanding of learners' on-line interactivity in ODL institutions. The study will also assist in identifying the challenges which learners encounter during their on-line interactivity. The recommendations of the study will benefits the future application of on-line interactivity in ODL institutions.

On-line learning will be enhanced, and learners will be motivated to utilise other on-line interactive tools when they realise the benefits of on-line interactivity. The more these learners are exposed and oriented to the on-line interactivity tools and platforms, the more technological knowledge they will acquire and accumulate even for their working environments.

1.7 DEFINITION OF KEY CONCEPTS

The following key concepts were identified as having a critical bearing on both the intentions of the study and its research orientation:

1.7.1 Educator

An educator is professionally trained and suitably qualified individual giving intellectual, moral and social instruction to a learner as a formal and prolonged process (Reader's Digest Oxford Complete Word Finder 1996:868). For the purpose of this study an educator will be referred to as an educator and will be used interchangeably with tutor.

1.7.2 Health Services Management (HSM)

Health services management is operationally defined as a course offered at Unisa's Department of Health Studies to prepare learners to be health service leaders/ managers mainly in the health care environment. The context of healthcare services management refers to the global, legal, professional, ethical, corporate governance and

business ownership environment in which the management of healthcare organisation is practiced (Muller, Bezuidenhout & Jooste 2011:5).

1.7.3 Higher education

The form of education leading to qualifications higher than that of a 12 year programme or its equivalent provided (on a full time, part-time and or distance education basis) by higher education institutions (usually universities, technikons or colleges) which are established, declared, accredited or registered as a higher education institution in terms of the legislation (Van Rensburg 2002:16).

1.7.4 Interaction

Tomei (2008:695) describes interaction as the "silent, critical, creative" conversation within the learners' mind that is spurred and supported by the learning environment.

1.7.5 Interactive learning

Interactive learning is the process of exchanging and sharing of knowledge resources conducive to innovation between innovators, its suppliers and/or its clients (Tomei 2008:709).

1.7.6 Learning

Gaining knowledge or skill by self study, experience, or being taught (Reader's Digest Oxford Complete Word Finder 1996:867).

1.7.7 Learner

A learner is a person who is learning a subject or skill (Reader's Digest Oxford Complete Word Finder 1996:868). For the purpose of this study, a learner will be referred to as a registered nurse who is a second or third year undergraduate in HSM at Unisa, and who has been exposed to on-line learning in an open distance environment. In this study a learner and a student will be used interchangeably.

1.7.8 myUnisa

myUnisa is a secure Web Site for registered Unisa students (Unisa 2010:9).

1.7.9 On-line learning

Learning that is delivered and supported through the use of information communication technology (Clarke 2008:116). In this study, on-line learning refers to the use of different links of myUnisa, video conferencing and email to facilitate interactive learning.

1.7.10 Open distance learning (ODL)

A multi-dimensional concept aimed at bridging the time, geographical, economic, social, educational and communication distance between student and institution, student and educator, student and courseware and student and peers. It focuses on removing barriers to access learning, flexibility of learning provision, student-centredness, supporting students and constructing learning programmes with the expectation that students can succeed (Unisa 2008: 2).

1.7.11 University of South Africa (Unisa)

Operationally defined as an Open Distance Learning (ODL) institution where this study was conducted.

1.8 THEORETICAL FRAMEWORK

The most relevant theories are Vygotsky's social development theory, Brunner's cognitive constructivist theory, Pask's conversational theory, and Moore's transactional distance (Tomei 2008:695). In this section the discussions on theories are brief, but the details are discussed in the theoretical framework chapter (chapter 3 of this study).

1.8.1 Vygotsky's social development theory

Vygotsky's ideas are of relevance to this study because they address pedagogy and learner interaction. Constructivism supports learner-centred learning. Constructivism

focuses on how an individual learner gains understanding of phenomena, and social constructivism emphasises that meaning and understanding grow out of social encounter (Vygotsky 1978:56-57).

Constructivist theory emphasises knowledge construction, instead of knowledge reproduction. Vygotsky (1978:58) states that constructivist learning approaches facilitate content and context-dependent knowledge construction through interactive learning. It requires engagement with the learning task, whether working individually or collaboratively with others. Learners become interactively engaged with the learning material, learning content other learners and educators.

1.8.2 Brunner's cognitive constructivist theory

According to Tomei (2008:696), a major theme in the theoretical framework of Brunner is that learning is an active process in which learners construct new ideas or concepts based on their past or current knowledge. The learner transforms and selects information, relying on a cognitive structure to do so. Students interact with the world by exploring and manipulating objects, wrestling with questions and controversies, or performing experiments. As a result, students may be more likely to remember concepts and knowledge discovered on their own.

By grasping the structure of a subject, learners understand it in a way that permits many other phenomena to be related to it meaningfully. To learn the cognitive structure is to learn how phenomena are related. The often unconscious nature of learning structures is perhaps best illustrated in learning one's native language. Having grasped the subtle structure of a sentence, the child very rapidly learns to generate many other sentences based on this model, through difference in content from the original sentence learned (Brunner 1977:80).

1.8.3 Pask's conversation theory

The fundamental idea of Pask theory is that learning occurs through conversations about subject matter that serves to make knowledge explicit. More than one user can learn a subject matter represented in a conversational domain, the most interesting situations involve group or team activity (Pask 1976:185).

Pask identified two different types of learning strategies, serialists who progress through an entailment structure in a sequential fashion and holists who look for higher order relations. The difference between the two is “Free learning” and “Teach back”. When a complex subject matter is learned by a student, it is possible to distinguish between comprehension learning and operation learning as dominant learning styles (Pask 1976:185).

Comprehension learners pick up an overall picture of the subject matter, for example, type and number of items in a class and a clear picture of where information about items can be discovered. These learners may, or may not be able to perform the operations required to use the subject matter information (Pask 1976:84).

Tomei (2008:696) indicates that learning takes place through conversation about the subject matter that serves to make knowledge explicit. Conversation can be conducted at a number of levels. Conversation in this study will be through on-line tools, for example, emails and the institution’s website.

1.8.4 Moore’s transactional distance theory

Moore’s theory is also more relevant to distance learning and explain the relationship between participants in a distance learning situation. The teaching behaviour found in transactional distance includes two variables, dialogue and structure. Dialogue is the term that helps focus on the interplay of words and actions and any other instruction between teacher and learner when one gives instruction and the other responds. Elements found in the course design are called structure (Moore & Kearsley 2012:210-211).

The discussion of these theories supports this study. Social constructivism, conversation and transactional distance support that learners’ as social beings should have conversation with each other, with the educator and learning institution to enhance teaching and learning irrespective of distance.

In the case of this study conversation will be on-line. Learners and educators should share knowledge by utilising on-line interactive tools in an ODL institution thus

constructivism comes in. The theories' focus corresponds to this study because they discuss about learning as an active process in which learners' construct new ideas, learning that occurs through conversation and even the relationship between participants, learner-to-learner and learner-to-educator in a distance learning situation. These theories have an impact to the recommendations deduced from the findings of this study.

1.9 RESEARCH DESIGN AND METHODOLOGY

Both the qualitative and quantitative research methods were used in this study. The reasons for choosing the three phases relate to the wider coverage of the participants to the study, and obtaining of in-depth findings. The mixed research methods consist of three phases, covering the setting, sampling, instrument and data collection process. The study population was similar to all the phases.

1.9.1 The study population

Data was collected from the HSM learners at Unisa, who constituted the research population. A sample included learners in the second and third year HSM field of study. The sample was most suited to provide the required data after being exposed to on-line interactivity during their first year of study. The selected sample was also accessible to the researcher. Inclusion criteria was considered (refer to chapter 4).

1.9.2 The qualitative approach

A qualitative, exploratory and descriptive research design was chosen. The myUnisa discussion forum constituted phase 1; while the focus group interview constituted phase 2, all of which were used to collect data qualitatively. The content of the questions was categorised into two primary sections – one aiming at facts, and the other aiming at perceptions.

Factual questions were intended to elicit participant information about themselves, as well as demographic data – for example – age and marital status. Demographic characteristics helped the researcher to have more knowledge about the participants and in obtaining more information that had an impact on the findings.

1.9.3 The quantitative approach

The quantitative research design was a descriptive and non-experimental cross-sectional survey. An on-line questionnaire was also utilised in the study. Both open ended and closed ended type of questions were used in the questionnaire. The research topic, research questions, purposes and objectives of the study provided a framework and context for the questions in the questionnaire.

1.9.5 Triangulation

Triangulation is the use of multiple methods, data collection strategies, and data sources to obtain a more complete picture of the subject matter being studied, and to cross-check information (Gay, Mills & Arasian 2009:608).

Data was collected on the same phenomenon about the same people at different points in time and multiple sites to enhance the validity of the findings (Polit & Beck 2008:766, 677).

1.9.6 The research setting

Focus group interviews were held in six Unisa regional campuses around South Africa. These are: Pretoria (Gauteng Province), Polokwane (Limpopo Province), Bloemfontein (Free State Province), Durban (KwaZulu-Natal Province), Cape Town (Western Cape Province), and East London (Eastern Cape Province) (refer to Annexure L). It is at these research settings where the Health Services Management practical module is conducted during the second semester.

1.10 THE THREE PHASED RESEARCH METHOD

The three phases of the mixed research method outlined below, relate to the enhancement of in-depth findings based on triangulated data collection processes.

1.10.1 Phase 1: myUnisa discussion forum

This stage is referred to as on-line data collection in the form of my Unisa discussion forum, the aim of which was to collect data and monitoring the responses in respect of accessing of on-line interactive tools and interacting with peers, educators, study materials and the ODL institution. The responses from this phase were compared with findings from phase 2. Data was analysed qualitatively by studying and collating the commonalities of interaction between the second and third year learners. Types/nature and patterns/trends of interaction were analysed and emergent themes from the participants were noted.

The use of participants' direct quotations assisted in forming the data analysing process. Benefits and challenges which emerged during the interactions were analysed (refer to chapter 4 for details).

1.10.1.1 Methodology of phase 1

On-line data collection was conducted during the first semester (during the last week of March until the end of June 2012). This was conducted weekly by opening, viewing and saving myUnisa discussion forum interaction of the two second and four third year HSM modules. This process helped in reaching the research findings based on the research objectives.

The electronic and hard copy documents of the weekly interaction were printed and saved as evidence for data analysis purposes. The reason for collecting data through myUnisa discussion forum was to view the frequency, pattern and type/nature of interaction of learner-to-learner, learner-to-educator, learner-to-the-study material and learner-to-the-Open Distance Learning (ODL) institution of the second and third year learners. Adherence to Unisa research policy regarding utilisation of learners on-line was considered.

On-line interactivity with the learners in an ODL institution is part of the prescribed responsibilities of the educators by Unisa, hence their coverage by this policy to view the interactivity of the learners without necessarily having to obtain their permission. The electronic and hard copies of the weekly interaction were printed and saved for

data analysis purposes (refer to Annexure I) for examples of printed copies from the discussion forum.

1.10.2 Phase 2: Focus group interview

1.10.2.1 Methodology of phase 2

Data collection was conducted during the second semester (June-September 2012). The total number of participants from the six (6) settings was fifty-four (54). Proof of ethical clearance and the letter of permission to conduct the study were shown to the participants. A request was made for the participants to fill-in the Informed Consent form, and all aspects of confidentiality were explained to them. Interviews were conducted in English.

The participants were verbally requested for permission in advance to use the Audio Digital Recorder (ADR) during the interviews, in order to capture conversations in an un-biased manner.

An interview guide was used to guide and probe the interaction between interviewer and interviewee. The discussions were based on on-line interactivity in an ODL institution, prospects and challenges. The participants were probed to elicit more information about the research questions and for data analysis purposes which contributed towards the findings of this study. Field notes were also taken to record any other usable and useful data, such as observed non-verbal and gestural cues for augmentation and accuracy of data collection. Data was collected until no new information emerged (data saturation).

Data analysis began simultaneously with data collection. The researcher constantly took notes and observed non-verbal and gestural cues and analysed at the same time. The analysis started with the formulation of appropriate research questions which were answered during data collection. All tape recorded data were transcribed verbatim, thus increasing accuracy of the data and obviating researcher bias. Together with field notes, this data was coded independently by the researcher. Emerging themes from the participants were analysed. Coding of data helped identify dominant issues emanating from both written responses and themes from non-verbal cues. Giorgi's

phenomenological approach was used for qualitative data analysis (refer to chapter 4 for details).

1.10.3 Phase 3: On-line data questionnaire

Phase 3 is the last phase of this study. The phase is quantitative and descriptive in nature.

1.10.3.1 Methodology of phase 3

Data was collected through the pre-tested questionnaire. The self-assessment link of myUnisa was utilised for posting the questionnaire to all second and third year HSM learners. This on-line questionnaire-based data collection process was conducted in September 2012.

The request made by the researcher to the participants indicated that only those learners who had some modicum of on-line interactivity should respond and return the completed questionnaires. This request was attached as the first part of the questionnaire (refer to Annexure F). The request included amongst others, completion of the Informed Consent form, maintenance of anonymity and confidentiality, ensuring the participants that their involvement in the study is voluntarily, and that failure to comply would not result in any form of penalty.

The duration of completing the questionnaire and the due date for submission of the response was ten to sixteen days. The reason for this time-frame was to give respondents enough time to complete the questionnaires. An information technology specialist assisted the researcher in posting the questionnaires on-line. An awareness of the questionnaire posting to the respondents was done immediately after publishing.

Short Message Services (SMS), was sent to all students regarding the questionnaire. In addition the notification was also posted on myUnisa. A reminder was sent by using SMS requesting the return of completed questionnaires on the due date (refer to Annexure G).The completed returned questionnaires were allocated a code for data analysis purposes.

1.11 VALIDITY, RELIABILITY AND TRUSTWORTHINESS

The quantitative approach to the study's data collection and analysis processes necessitated that measures of validity and reliability be implemented; while on the other hand, the qualitative approach warranted that trustworthiness be employed as well.

1.11.1 Validity

Validity is criterion referring to the degree to which inferences made in a study are accurate and well founded in measurement, thus ensuring quality of measurement. It relates to the degree to which an instrument measures what it is intended to measure (Polit & Beck 2008:768). According to Gay, Mills and Airasian (2009:154), validity is therefore the "most fundamental consideration" in developing and evaluating a test instrument. Predictive validity was considered.

A questionnaire and an interview guide are instruments which were used in this study. Validation types selected were content validity and external validity. Threats to external validity were overcome (refer to chapter 4).

1.11.2 Reliability

Reliability refers to the consistency, stability and repeatability of a data collection instrument (Wood & Ross-Kerr 2011:209). According to Creswell (2009:190), qualitative reliability indicates that the researched approach is consistent across different researchers and different people. An instrument's reliability is the consistency with which it measures the target attributes, the extent to that its measures reflect the true score; that is, to the extent that measurement errors are absent from obtained scores (Polit & Beck 2008:452). Transcripts were checked, multiple sources of data collection were used, good rapport with respondents was built and the pilot study was conducted to test the research instrument's reliability. By exercising objectivity, the researcher also became an instrument of reliability for data collection.

1.11.3 Trustworthiness

The use of multiple methods of data collection strategies and data sources enhanced the cross-checking and verification of information and data, while also enabling the researcher to obtain a broader and more complete picture of the research topic and its multifaceted components (Gay, Mills & Airasian 2009:608). By means of triangulation, the study's trustworthiness was also enabled.

1.12 ETHICAL CONSIDERATIONS

Ethical considerations in research refer to a system of moral values that is concerned with the degree to which research procedures adhere to professional, legal and social obligations to the study participants (Polit & Beck 2008:753). Ethical consideration is discussed into two spheres, namely; researcher-specific and respondent-specific considerations. The details of ethical consideration according to spheres are presented in chapter 4.

The following ethical aspects and considerations were adhered to in the study:

- The research proposal was submitted for approval to the Research and Ethics Committee of the Department of Health Studies at Unisa. The proposal clearly indicated the researcher as a registered postgraduate student. An ethical clearance certificate was subsequently provided by the Department of Health Studies' Research and Ethics Committee as evidence of approval (refer to Annexure A).
- Submission of a written request for permission to conduct a study involving learners, directed to the Department of Health Studies' Chair (refer to Annexure B).
- An undertaking by the researcher to adhere to Unisa's ethical requirements regarding research.
- Obtaining the Informed Consent from the research participants (refer to Annexure D).
- Strict adherence to the respondents' confidentiality and anonymity by a clear notification that their identity in the questionnaires was not required, and that the contents of the questionnaires would not be disclosed to unauthorised persons.

1.13 OUTLINE OF THE STUDY

The following table illustrates the contents and structure of various chapters of this thesis:

Table 1.1: Outline of the thesis

CHAPTER	CHAPTER HEADING	DESCRIPITION OF CHAPTER
1	Overview of the study	The background, purpose, significance, research design and method, and ethical consideration of the study are discussed.
2	Literature review	Aspects related to on-line, ODL, interactivity, on-line interactive tools and pedagogy of on-line interactive learning are discussed.
3	Theoretical framework	Theories related to interactivity and ODL, constructivism, conversational and transactional distance are discussed.
4	Research design and methodology	Research design and methods are discussed, including data collection, data collection instruments, pilot study and ethical considerations.
5	Data presentation, analysis and interpretation of the findings	The research findings are presented analysed and interpreted.
6	Discussion of the findings, recommendations of the study and future research, study limitations and conclusion.	Consolidation of the findings of the three phases of data collection is discussed; recommendations, limitations of the study and conclusion are also addressed.

1.14 CONCLUSION

In chapter 1 the background of this study was presented and an indication given of the introduction of information and communication technologies into distance learning. While the latter is crucial in enhancing on-line learning interactivity, the concern of its minimal utilisation is raised. The purpose and the significance of the study were also outlined, and the relevance indicated of this study's contribution to a better understanding of learners' on-line interactivity in ODL institutions between their peers, educators, study materials and ODL institutions. Research design and methods, as well as ethical considerations, were addressed. The following chapter will discuss the pertinent literature review of this study.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter addressed the literature review, most particularly, the researcher's purpose of reviewing the literature to convey information about what is currently known regarding the body of knowledge relating to the research topic of interest. The literature review focused on those sources that are pertinent or highly important in providing the in-depth knowledge needed for the scientific study on the selected research problem (Burns & Grove 2009:91). The information and knowledge obtained from the consulted and available literature may guide in the development of a research instrument and also contribute towards learners' understanding of on-line interactivity. The databases that were used were ebsco host and the key words were on-line interactivity, on-line pedagogy and ODL.

The following aspects related to the research topic and research objectives of this study are discussed:

- the historical overview of ODL and on-line interactive tools
- perspectives of studies on ODL and on-line interactivity
- perspectives of studies on on-line pedagogy
- challenges and benefits of ODL

2.2 THE HISTORICAL OVERVIEW OF ODL AND ON-LINE INTERACTIVE TOOLS

2.2.1 Introduction

The history of distance education could be traced back to the 1700s in the form of correspondence education, but technology-based distance education might be best linked to the introduction of audiovisual devices into the schools in the early 1900s.

In 1873, Anna Ticknor was recognised as a true pioneer of distance education in the United States of America (USA) because she created society to encourage studies for women at home to increase their educational opportunities and set the pace for other home-based correspondence courses. Different media were used such as printed materials were sent to students through postal services (Kersley 2011:1).

The historical overview of distance education shows a stream of ideas and technologies balanced against a steady resistance to change and it often places technology in the light of promising more than it has delivered. Today's graduates are accustomed to speed of access to information that could only have been dreamt of by those in Western healthcare in the 1980's. As a result, the pioneers of ODL used information technologies differently from the ways in which educators did (Wilkie 2009:423).

ODL and its relationship to emerging computer technologies have together offered many promises to the field of education. Although it is thought of as a new term, "distance education" has been around for well over 100 years. According to Moore and Kearsley (2012:2), distance education refers to teaching and learning in which teaching normally occurs in a different place from learning, requiring communication through technologies as well as special institutional organisation. Many definitions have been put forward in modern literature. However, Greenberg's (2009:36) was perceived as the most appropriate to this study. Greenberg defines contemporary distance learning as planned teaching/learning experiences that use a wide spectrum of technologies to reach learners at a distance and is designed to encourage learner interaction.

According to Moore, Dickson-Deane and Galyen (2011:129), distance education has a history that spans from basic correspondence through postal services, to the wide variety of tools available through the Internet. Society has embraced new forms of communication throughout the years. One such form of on-line learning is known to have history of access beginning in the 1980s, whereas another term referred to as e-learning does not have its origin fully disclosed.

Understanding the history of distance education is valuable in that it shows that there was more than one historical path to open distance education and that the evaluation of distance learning has not been easy.

Many of the problems, facing implementation and acceptance of educational innovation today have been faced by distance education throughout history. In tracing the history of distance education, the introduction of television as an instructional medium appears as an important entry point for theorists and practitioners outside of the correspondence education study and instructional media.

2.2.2 Generations of distance education and associated delivery technologies

For many years, universities with significant commitment to distance and open education have been at the forefront of adopting new technologies to increase access to education and training. Communication between teacher and student is a vital element of successful distance education.

According to Taylor (2002:2), distance education operations have evolved through the following generations as indicated in table 2.1.

Table 2.1: Generations of distance education

Generation	Period	Technology used	Model
First	19th century to the beginning of the 20th century	Print	Correspondence
Second	Early 1970s	Print audio and video	Multimedia
Third	Early 1980s	Telecommunication, audio teleconferencing and video-conferencing	Tele-learning
Fourth	Early 1990s	Internet, World Wide Web (WWW), Multimedia and computer – mediated communication	Flexible learning
Fifth	20th century	Internet and Web	Intelligent Flexible Learning (IFL)

This means that all ODL generations are technology- driven, with their features emerging directly from the type of the technology used. Only in the two generations do some pedagogic characteristics appear, such as real-time interaction, collaboration and learner-centred education (Mikropoulos 2002:3).

2.3 PERSPECTIVES OF STUDIES ON ODL AND ON-LINE INTERACTIVITY

Fully-developed on-line courses are also becoming progressively more popular because of their “anytime anywhere” learning flexibility. One of the ways students interact with each other and with the instructors within fully on-line learning environments is by means of asynchronous discussion forums. However, students’ engagement in on-line discussion forums does not take place automatically (Nandi, Hamilton & Harland 2012:5). It is commonly argued that a key challenge for on-line learning is to encourage learner participation.

Even though this challenge has received increased attention by researchers, little effort has been put into developing a sound theoretical understanding of the nature of on-line participation, and the manner in which it may be studied empirically. A definition of on-line learner participation that acknowledges its more complex dimensions such as doing, communicating thinking, feeling is proposed (Hrastinski 2008:1755).

It is argued that on-line learner participation is a complex process of taking part and maintaining relations with others, is supported by physical and psychological tools, is not synonymous with talking or writing and is supported by all kinds of engaging activities. Participation and learning are argued to be inseparable (Hrastinski 2009:78). Activities on discussion forums assist learners to share and gain knowledge from each other. However, setting up discussion forums does not ensure that learners interact with each other actively (Nandi, Hamilton, Chang & Balbo 2012:684).

Tomei (2008:695) describes “interacting” as the “silent, critical creative conversation within the learner’s mind that is purred and supported by the learning environment.” The study outlines four different types of interaction that trigger what it calls critical conversation. The first is interaction with media; where individual students scrutinise textbooks, videotapes or any other course materials. The second is interaction with resources; where individual students or groups may collaborate with tools such as those used by professionals – including word processors, electronic libraries, laboratories and studios. The third type involves interaction with experts. This would relate to students conversing with educators or other experts in real time.

The last type of interaction is through electronic exchange, with students electronically or digitally sharing the results of newly formed knowledge over a period of time.

The notion of interaction is therefore premised on different meanings in different contexts; such as learner and training interaction, human-to-computer interaction, and interactive educational media (Tomei 2008:737). These notions will be elaborated in the pedagogical aspects of on-line learning discussion.

This study focuses on on-line interaction in an open distance learning environment amongst HSM learners' addressing prospects and challenges of interactivity. The researcher perceives the discussion above as forming the foundation of the study. The researcher refers to traditional type of interaction as face-to-face. Different higher education institutions may have their prescribed ways of interacting on-line.

Tomei (2008:700) contends that the Student Access Statistics is a very valuable aspect of WebCT in terms of helping the teacher to track and to manage students' progress. Each time a new course material is posted on the Web, the educator may demand that students read the material before the commencement of the next scheduled class. Before the class commences, the educator may log on to assess how many students already have accessed and presumably read the material. This can be gauged by looking at the number of students logging on and also by the pages they visited. Indeed, one could have an idea of which particular students have accessed the material and their frequency of access. It turned out, however, that sometimes more students had accessed the pages than the access statistics indicated.

Some students simply asked their friends to download copies of the material for them without accessing the material themselves from their own account. WebCT's bulletin boards and presentation feature together provide a useful discussion forum for participants. This is the most useful feature with respect to incorporating interactivity (both educator and learner and learner-learner interactions).

Through the bulletin boards, one can readily send information to the class and to individual students about the course. Notices on these bulletin boards would include reminders of deadlines of assignments and clarifications about specific points in the

notes. On the other hand, students can use this forum to ask the educator about aspects of the course and to post general messages to other students in the same course. Groups of students can use the discussion forum to upload and to discuss a topic, which they subsequently may write up and present to the whole class (Tomei 2008:700).

Interaction is central in the development and implementation of learning activity. Peer interaction can be considered a key course goal or activity. This interaction can be promoted through activities such as on-line symposia, press conferences and expert panel (Tomei 2008:710, 736). According to Chimpololo (2010:68), open learning allows learner flexibility and choice over what, when, at what pace, where, and how they learn. Thus open learning could be offered on campus or at a distance, and distance could be open or closed, bearing in mind that distance education is characterised by separation of geographic distance and time.

Notwithstanding the virtual reduction of geographic distance, there is a large body of learners that have yet to be reached and provided with access, while ensuring equity still poses definite challenges for the ODL system. The ODL system has the capacity to integrate the state-of-the-art technologies with the time tested methodologies. It is therefore imperative to examine threadbare issues associated with social, economic, political, academic and technological aspects of the system in the emerging scenario (Dikshit & Garg 2009:1).

Some faculty members do not necessarily share the enthusiasm generated by ODL opportunities. Since the role of faculty members is crucial to the successful implementation of any educational programme, it is important to understand reasons for faculty members' reluctance to embrace the non-traditional modes of course delivery. In order to better understand this dynamic (on-line learning interactivity) a qualitative study was conducted among the faculty of a college of education, in order to ascertain the faculty's perception of the value and viability of distance education in their context. The results of this study indicate that the participating faculty members do not unanimously recognise or embrace the use of distance education.

They held the view that students may not have the technical skills for a complete on-line course, or that students may lack resources to own a home computer or have access to a computer at the university or city library.

This misperception represents another disassociation with the reality of the inestimable use of technology by today's students clearly evident in the university environment where the study took place. With the availability of multiple computer laboratories, wireless networks, readily available mobile laboratory equipment and the fact that most students report to classes with a laptop as standard equipment, it would seem difficult to conclude that students lack technical skills or resources. Respondents also indicated little awareness of existing support for distance learning within the university infrastructure. Some respondents did not even realise that the university had a complete unit to serve distance education needs and were unaware that the college of education has one of its Master's programmes completely on-line (Mills, Yanes & Casebeer 2009:9).

Given the array of misperceptions about distance education, availability of technology and technical support, it appears that these respondents do not know what they don't know. Expressed fears were based upon inaccurate and incorrect perceptions of technology and institutional support. In fact, technological advances and this university's established infrastructure have solved many of the issues and concerns expressed by the respondents (Mills et al 2009:9).

As predominantly an ODL institution, there is an expectation that Unisa learners interact mainly through different technological tools for them to succeed in their learning. The learners should actively interact on-line with other learners, educators, the university, the content and the study materials, for them to succeed academically by using the myUnisa discussion forum. Besides myUnisa, students are not discouraged to utilise other means of technologies like emails and the Internet. Considerations for the use of traditional ways of interaction are not discouraged. As an ODL institution, the researched higher education has afforded students an opportunity to interact on-line for their convenience of learning.

A major assumption of interactive media use is that the user is actively involved in such interaction. It does not serve any purpose to have interactive communication tools without active involvement of the participants or users. Interactivity requires active participation (Yan 2007:530). The interaction between information technology and organisations is complex, and is influenced by many mediating factors – including the organisation's structure, business processes, politics, culture surrounding environment and management decisions (Laudon & Laudon 2010:107). Several assumptions underscore research related to undergraduate student experiences in college. One assumption holds that college is a mutually interactive process between students and their environment. In addition, students interact with peer reference groups and faculty members through a variety of institutional contexts that support student learning and development.

This article by Holley and Taylor (2009:258) focuses on on-line programmes as one of those contexts. The intersection of these two areas of research, on-line learning and student development, offers insight into a growing student population in United States higher education. The growth of student population is encouraged by the benefit of studying while occupying multiple other roles. In distance education, students no longer worry their employers with time-off to attend classes as would be the case with work and study at residential universities.

Researchers sought to address this intersection through an interpretive, descriptive qualitative case study methodology focused on the experiences of undergraduate students enrolled in an on-line Bachelor of Science in Nursing (BSN) programme at a public flagship research university in the South Eastern US. The programme is distinguished by its technological foundation. The accelerated programme is designed as a completely on-line curriculum. Students are loaned laptops for the duration of the programme and are not required to visit campus at any time during their enrolment. As a result, several students are out-of-state residents and complete their coursework solely through an on-line curriculum (Holley & Taylor 2009:258).

Using data collected from a qualitative case study of an on-line baccalaureate nursing programme, the researchers examined the influence of on-line degree programmes on undergraduate student socialisation and learning.

The researchers considered how components of socialisation, knowledge acquisition, investment, and involvement were influenced by the on-line context. The findings suggest the importance of considering non-academic influences in regards to non-traditional student experiences (Holley & Taylor 2009:263).

In on-line learning – students, as active agents – are expected to create academic and social relationships with peers and instructors, participate in group discussions, and initiate interactions in learning processes such as asking questions, posting messages, providing help, or seeking help. Sher (2009:102) found that student-instructor interaction and student-student interaction were significant contributors of student learning and satisfaction. In spite of the growth in on-line learning, high drop-out rates have been of concern to many organisations and higher education institutions. Some consider the higher drop-out rate in distance learning a failure while others advise careful interpretation of the issue because of unique characteristics and situations that on-line learners have. It is certain that the issues in on-line training should be addressed and dealt with. The number of adult learners who participate in on-line learning has rapidly grown in the last two decades due to on-line learning's many advantages such as learning at anytime and anywhere (Park & Choi 2009:207).

As the horizons of nursing education grow locally, nationally and globally, discussions about how best to transmit the core constructs and values of the nursing profession are vital. Creating on-line learning environments will increasingly reflect the range of issues that permeate the community at large. Pedagogical, ethical, technological and philosophical concerns should be carefully contemplated whenever on-line courses, particularly related to nursing, are being constructed, taught and evaluated. The student respondents gave food for thought that hopefully will provide some insight and guidance as nurse educators and students embark on this journey together of interactivity in an ODL environment (Gallagher-Lepak, Reilly & Killion 2009:143), as the ODL system is successful on providing education to the unreached (Hansra & Jain 2012:20).

2.4 PERSPECTIVES OF STUDIES ON ON-LINE PEDAGOGY

Many universities and colleges have started to invest heavily in online teaching (Appana 2008:5), and are now offering innovative on-line degree programmes, expanding their

educational territories without time and place barriers, and complementing their traditional off-line class with web-based educational tools (Lee, Yoon & Lee 2009:1320).

As more institutions set up distance education systems, the roles of instructors will continue to change. In moving to a distance education system, some instructors will have the job of preparing materials without being involved in interaction with students, or if they do, they will have to use the communications technologies and learn to teach differently (Moore & Kearsley 2012:2). Technology has become an indispensable part of our lives. Even without considering and evaluating thoroughly whether it enhances learner centred activities, the transfer of technology into schools in its various forms is a major goal in most parts of the world (Adams & Brindley 2008:949).

Changes in present-day education as a result of new information and communication technologies have led to a whole industry of educational services that together fall under the general heading of “the distance education model.” It appears that the use of the model makes it possible not only to solve problems of access to educational services and the individualisation of the instruction, but also to raise the level of the diversity and interactivity of the educational process, to ensure that education advances rapidly in response to the needs of society and, ultimately, to enhance the effectiveness of the instruction (Prokopenko & Baksheeva 2008:35).

The interest in distance education forces educators to rethink the entire process. Ultimately, technology does not represent a minor change in course delivery. Rather, it is an integral part of the educational system, where changing one aspect affects the rest of the system. While effective distance education has been practiced and studied for centuries, it has been just in the last decade that networked digital technology has been employed. Technologies and teaching techniques continue to evolve, and options continue to expand, emphasising the need for information that will assist distance education planners and participants in making decisions that will result in optimal learning experiences (Tomei 2008:686, 722).

The computer service departments in higher education institutions are also facing more pressures on improving performance, usability, flexibility and security of their instructional Web Sites. The educators need to design and implement better materials for on-line teaching. This needs the educators themselves to keep learning new

technologies and instructional theories. Students need to adapt to new teaching and learning environment than those they had in high school. The administrators of higher education institutions will face increasing demands for funding, technical support, new curricula and skilled personnel (Chao 2009:3).

The strong growth of the on-line learning market (technology mediated distance learning) has been accompanied by a number of organisations providing “principles, guidelines, or benchmarks to ensure quality distance education” (Irlbeck 2008:25). Best practices help inform teaching and learning processes and performance improvement, while technology helps enhance the relationships. The best practices should be focused on and related to performance improvement as it relates to teaching and learning, rather than the technology being used (Irlbeck 2008:25).

A few educators are also beginning to use on-line technologies to share their courses with others. In an article by Hilton, Graham, Rich and Wiley (2010:79), a report on a course taught by David Wiley was discussed. Wiley opened his course to participants around the world. Some of the participants were students enrolled at the university where he taught, others participated from the distance. All of the course readings and assignments were freely available via the Internet. Learners at a distance were able to turn in work and receive feedback from Wiley. Although learners who enrolled in the class from a distance were not formally enrolled in the university, and were not given a course credit, Wiley gave unofficial certificates of completion to students who finished the course.

These classes clearly demonstrated that on-line technologies can be used not only to share course content with the non-enrolled public, but also to facilitate learner-learner and learner-instructor interactions. However, the classes also demonstrate that a significant investment time may be necessary to open a class to learners at a distance, particularly for instructors who wish to facilitate learner-learner and learner-instructor interactions (Hilton, Graham, Rich & Wiley 2010:79).

While a relatively new phenomenon**,** on-line learning in nursing education has had a significant impact on the role of the nurse educator. Faculty members are challenged to make fundamental changes in their teaching strategies. Often, a paradigm shift takes place when traditional courses are converted to an on-line format. As the emphasis

moves from faculty teaching to student learning, the role of the faculty member changes from authority figure to facilitator. Nurse educators who are asked to make this transition often have no experience in the development or teaching of on-line courses (Johnson 2008:17).

Prior to education institutions move to an on-line teaching format, an infrastructure should be in place that includes policies, technology partnerships, and support systems for faculty. In addition to faculty development, information on the nature of the faculty's role in the virtual environment is needed prior to the transition (Johnson 2008:17). Distance learning is fast transforming current assumptions of higher education and creating questions about what constitutes quality in education. The virtual environment is different from the traditional classroom with reduced cues among the educators and students, more text-based course content, constant access and different instructional approaches required. Nursing instructors need new pedagogies to deliver on-line courses.

The study conducted by Reeves and Reeves (2008:46) identified 10 design dimensions derived from research and theory in instructional technology, cognitive science, and adult education for guiding the design and evaluation of on-line learning environments in health and social work education. These 10 design dimensions are of interactive teaching and learning in nature and include the following: (1) pedagogical philosophy; (2) learning theory; (3) goal orientation; (4) task orientation; (5) source of motivation; (6) teacher role; (7) meta-cognitive support; (8) collaborative learning support; (9) cultural sensitivity; and (10) structural flexibility.

With the increased need for new career skills and improvement in delivery technology, distance education students will demand evidence of quality in distance courses. Higher education institutions should take the lead in developing and maintaining standards, and clearly communicate those standards to the public.

When students benefit from an education programme that meets their need, the community benefits as well (Tomei 2008:691).

Learners are to be as critical thinkers in on-line learning as in the traditional way of learning. Critical thinking in on-line learning does not cover the content only, it also

involves competency in using on-line interactive tools. In a study conducted by Wang, Woo and Zhao (2009:95), learners' extent of critical thinking and knowledge construction in an interactive learning environment was investigated, and it was found that writing reflections had potential to promote critical thinking; but not all students thought critically.

Following a study on critical thinking, Li and his colleagues created an Internet resource-based learning model called the On-line Top-Down Modelling Model (OTDMM) to help enhance the learning effectiveness through learner-resource interaction. This study explored deeper into the learners' world under the OTDMM, trying to have an understanding of the learners' preferences and related perspectives, and to add to the literature on the effective design of on-line learning. This study has yielded interesting findings regarding the learners' preferences and perspectives in using on-line learning resources. The findings are helpful in understanding learners who have different experiences and backgrounds. Some of these aspects were not realised before. For example, a greater number of students prefer the on-line model projects containing both high-quality and lower-quality on-line resources. However, the findings indicate that different project models, whether high quality or lower quality, could play a role in modelling the learning process at various levels (Li, Fu, Zhao & Leh 2009:302).

Even though the high-technology level students prefer using more of the text Frequently Asked Questions (FAQs), and the lower technology level students prefer using more of the video FAQs, they both prefer using video FAQs to learn if the project taught is totally new to all of them. The study by Li et al (2009:302) is also a mirror that reflects the advantages in a blended learning environment where both on-line learning resources and traditional learning resources are available. Now that more and more people are aware of the benefits of providing on-line learning resources in various ways, discovering ways to boost learning efficiency is necessary and beneficial.

Other resources such as digital media (audio and video cassettes, CDs, DVDs), satellite broadcasting, on-line distribution of content and information via myUnisa and corporate websites, audio and video podcasting and streaming, and possibly radio and television will also be used to facilitate the process of teaching and learning. Asynchronous technologies such as wikis, blogs, social networking facilities and e-portfolios can be used effectively to support teaching and learning. Diverse, current, and sustainable

technologies that will serve Unisa's educational mission will be included in the delivery of courseware. Technologies such as telephony, multimedia CDs and DVDs, video and audio conferencing, SMSs and MMSs via cell phones, email and discussion forums/chat facilities via myUnisa, offer new possibilities for supporting innovative learning in distance education and should be integrated from the design phase of courseware. These various options are used to facilitate interaction in support of the courseware environment (Unisa 2008:6).

Highly interactive multi-party engagement can use:

- well equipped facilities for face-to-face contact sessions
- many of the above technologies in combination with rich media and multi-directional, multi-user, collaborative toolsets in a distributed web-based environment (Unisa 2008:6)

Faculty, especially those with limited background in the use of computers for academic purposes, often view the development and implementation of asynchronous on-line courses as an intimidating, formidable challenge. Orientation to using WebCT is available both through self-education and in classes held on campus. Along with a list of equipment, students should be given a list of expectations and responsibilities. Faculty also needs adequate orientation and support.

The initial investment in having a course implemented on-line and ready for students may be greater and more time-intensive for faculty than traditional, in-person classes. In preparing students, front-loading involves a clear description of the skills, hardware, and software that are necessary to ensure student success. Generally, learners are required to have access to computers with high-speed Internet connections. They should know how to generate, save, attach, and retrieve files, and they should have on-line access to databases and literature (Zsohar & Smith 2008:24).

Technology and information will continue to influence academic, work, and personal environments. To function effectively in these environments, individuals will need to be both technology and information literate. Both should be acquired and functionally utilised for students and workers to achieve success in this heavily technology-orientated society and workplace. The two are complementary, and they should be

interlocked to provide a complete inventory of needed skills and knowledge. Technology is the use of tools but, it is the results of using them that is important (Tomei 2008:581). As part of an on-line learning community, students and teachers take on new educational partnerships. When feedback is incorporated into the course design, students gain new skills involving self-reflection and peer review that will be useful in future endeavours. Opportunities for learning are limited if faculty consider themselves as lone feedback providers (Bonnel 2008:293).

2.5 THE BENEFITS AND CHALLENGES OF ON-LINE INTERACTIVITY, INTERACTIVE TOOLS AND ODL

On-line learning in an open distance learning institution has benefits and challenges which the higher education institution, the learner, and the educator should be aware of, since these are connected with teaching and learning. The benefits and challenges of on-line learning are addressed below:

2.5.1 Benefits

On-line interactivity opens up new opportunities for students who might otherwise be excluded from participation in the learning process. It allows institutions to educate a large number of students with relatively few educators, thus providing a cost- effective method of delivery of higher education learning. Learners have the opportunity to pursue lifelong learning after graduation, regardless of lifestyle or location (O' Lawrence 2007:1).

O'Lawrence (2007:2) has indicated that ODL provides other benefits, including meeting the needs of non-traditional learners with responsibilities to career and family that keep them from taking traditional college careers. ODL provides a new source of revenue for public universities that are experiencing shortages in financial support from the state and can ease the tension of body counts in classrooms to generate full time equivalence (FTE) to avoid cancellation of classes. As a result of these successes, the benefits of distance learning have led many higher education institutions to implement distance learning classes even if on an experimental basis, just to keep the in-flow of revenue. Indication was given that the rapid growth in distance learning has occasioned the use of technology in overcoming many of the barriers to higher education by

providing traditional universities with an opportunity to meet the changing world wide demand for higher education.

O'Lawrence (2007:2) further elaborates that communication is interaction between students and teachers, as both students and teachers have important roles to play. Students need to know and understand their roles in distance learning, and how to use the technology to communicate with the teacher and with other learners. They not only need to know how to operate the microphone or how to post to a bulletin discussion, but they need to understand communication etiquette as well.

The role of the teacher in an on-line learning environment is, amongst others, to assume more responsibility for planning. The materials that students will need should be prepared in advance, while students should also understand what is expected of them in terms of their patterns of responses. As most nurses undertake post registration training, learning without disruption to the workplace is increasingly attractive to employers. Learners are no longer leaving their work environment to attend courses offered face-to-face. Through on-line interaction, they learn from each other, share and discuss information related to their learning (Bedford 2008:64).

On-line interaction provides learners with incredible access to information and data without a gatekeeper. Although the educator provides the initial link to websites that offer high quality current information, the learners have the option to explore limited additional links on any topic. Bulletin boards, emails and chat rooms allow for both synchronous and asynchronous interaction among learners and between learner and educator. Active and interactive learner- learning activities are available to learners on their own schedule (Shovein, Huston, Fox & Damazo 2005:341).

ODL institutions make it possible for learners to improve on their academic qualifications without unnecessary hardship. Learners' registration, learning and evaluation are performed on-line (Apena 2012:442-443).

2.5.2 Challenges

In a study conducted by Dyrbye, Cumyn, Day and Heflin (2009:42) they found that on-line interactivity and its learning tools presented challenges for clear communication, collaboration, sharing the workload and establishing the relationship. Some learners found it difficult to understand the opinions of others, or had their own points of view misunderstood. Students commented that sharing the workload by asynchronous communication depended not only on equitable participation, but also on the timing for logging onto the on-line discussion environment. Those who logged on later than other team members struggled to contribute to the team's work, due to the volume of postings and the difficulty in tracking learning conversations and completing tasks satisfactorily.

Lack of real time, face-to-face conversation can lead to frustrations during group projects and tends to limit the amount of feedback. Similarly, the absence of face-to-face time with educators adversely impacted on the quality of feedback and clarity of instructions. Some students cited technical issues technical issues such as inadequate computer hardware or software, insufficient computer and typing skills and slow and unavailable Internet access at home. The majority of comments specifically referred to the on-line platform that is blackboard and web-Boards. Students cited cumbersome navigation, the lack of intuitive functions, the number of board sites, discussion areas used and difficulty in tracking assignments and resources (Dyrbye et al 2009:42).

Students taking on-line courses are typically older than most undergraduate students. Consequently, it is somewhat typical to deal with students with a limited technological and mathematical background. As a result students dropped off. Distance education programs tend to produce higher drop-outs rates than face-to-face education programmes. The lack of personal contact between the agents involved in the learning process increases the risk of a sense of isolation among students. Students may feel disconnected from the educators as well as from other students.

For that reason, the mode of interactive communication needs to be facilitated and continuously encouraged by the educators as well as by other students (Olaniran 2010:301).

2.6 CONCLUSION

Much has been addressed concerning on-line interactivity, ICT and ODL in the literatures consulted. In this new era of on-line education provision by means of on-line interactive tools, there is a need to enhance interaction of the learner-to-leaner, learner-to-educator, learner-to-course content, and learner-to-institution. Challenges and benefits of on-line interactivity were mentioned, but the resolution thereof was not adequately addressed. This study attempts to bridge that gap by both indicating the challenges encountered by the learners and making recommendations based on those challenges. This study aimed to determine the nature of on-line interaction between the learners and educators. The study will further determine the extent of the efficacy of on-line interactive tools in the enhancement of learner-to-learner, learner-to-tutor, learner-to-study material and learner-to-ODL institution.

CHAPTER 3

THEORETICAL FRAMEWORK

3.1 INTRODUCTION

The theoretical framework of this study delineated the inter-connectedness and interactions of different concepts, factors and structures that share the premise of the study. According to Stommel and Willis (2004:4), a theory is essentially an organised, symbolic representation of reality that specifies relationships among key concepts, ideas or phenomena of interest. As such, it provided the framework for understanding and explaining patterns found in data. Wood and Ross-Kerr (2011:52) refer to a framework as being called a theoretical framework when the variables have been studied before and have been focused to be related to one another.

When approaching a study of learning theories it is easy to be overwhelmed by the vast array of possibilities offered. An important strategy that can be used to overcome some of these difficulties (the vast array of possibilities) is to perceive some structure or classification within which different learning theories can be compared and contrasted (Quay 2003:105).

This chapter was based on learning theories which address on-line interactivity. Each theory will first be discussed, and then followed by a discussion its support for pedagogy, on-line interactivity, and ODL. Finally, this chapter further includes factors that address any other extraneous variables that have the potential to confound the findings. The key concepts in this study have already been defined and discussed in the literature chapter of this study.

3.2 THEORISTS ADDRESSING ON-LINE INTERACTIVITY

Vygotsky's and Brunner's theories are discussed interchangeably in this sub-section as they are both constructivist in nature. Brunner's constructivism is more cognitive and discovery-oriented in nature, whereas Vygotsky's constructivism is more social in orientation, and emphasises on the interaction between social condition and the biological sub-strata of behaviour (Vygotsky 1978:123). Where there is an overlap or

gap of one theory, one theorist covers the other. They perfectly match the objective of this study. The pedagogical aspects and interactivity are indicated by both theories.

Students are encouraged by the educator to engage in learning by utilising their current cognitive knowledge, to create and discover new meaning in the learning process. In constructivism, engagement of students in learning through mediation between information and communications technologies is encouraged. Vygotsky and Brunner emphasise interactive engagement of the learner with the learning material, peers and educator; but the difference is that Brunner included interaction with the students' information, students' empowerment and population. This is characterised by the educator presenting the content to the learners for learning purposes and the learner to interact with the presented content to make meaning from it. The students' information, student empowerment and population are regarded as non-human interaction of learning (Brunner 2004:1).

The above discussion of Brunner's and Vygotsky's theories was a summary indicating their similarities and differences, Both addresss cognition and they are constructivists but the difference is that Brunner focuses on discovery learning and Vygotsky on social learning . Based on the above discussion, Vygotsky and Brunner support each other and are important to this study. A separate discussion of Vygotsky and Brunner follows hereinafter, in order to illustrate the two theorists' support for on-line interactivity.

3.2.1 Vygotsky and the social constructivist theory

Vygotsky's work is prominent in the theoretical foundations of social constructionists, who assert that relations among people genetically underlie all higher functions (Quay 2003:116).

He highlighted the role that culture and language play in developing students' thinking, and the ways in which teachers and peers assist learners in developing new ideas and skills. He proposed the concept of the Zone of Proximal Development (ZPD), which suggested that students learn subjects best just beyond their range of existing experience with assistance from the teacher or another peer to bridge the distance from what they know or can do independently and what they can know or do with assistance from the teacher or another peer (Vygotsky, 1978:86). His work led to an emphasis on

the deliberate use of discourse and cooperative learning in the classroom, and theories of assistance or “scaffolding” that help students learn in systematic ways (Hammond, Austin, Orcutt & Rosso 2001:7). Learning involves more than an individual person trying to make sense of the world in isolation. It extends beyond that. The social situation is of importance too (Quay 2003:116).

Vygotsky’s ideas are of relevance to this study because they address pedagogy and learner interaction. Constructivism supports learner-centred learning, as it focuses on the manner in which an individual learner gains understanding of phenomena; and social constructivism emphasises that meaning and understanding grow out of social encounter (Vygotsky 1978:56-57). Constructivists theory therefore emphasise knowledge construction, instead of knowledge reproduction.

The notion of social constructivism constitutes another aspect of constructivism that has been considered. Social constructivism’s notes the importance of two major types of social interactions in learning; that is, engaging in dialogue with others and gaining assistance from others (Quintana 2005:6).

Vygotsky (1978:56-57) proposes that an individual constructs new knowledge by interpreting and giving meaning to their experiences on circumstances. Learners are actively involved in processes of knowledge generation as opposed to being passive recipients of the educators’ teachings. In this context, the learners should be actively involved in teaching and learning and attach meaning to the content in order to ensure success in teaching and learning.

Learners utilise their minds to understand and make sense of what they encounter while they interact with the learning material, educators, peers and learning resources. Reflective learning is therefore encouraged. This enables learners to make use of their learning experiences, by linking new information with their cognitive structure of existing knowledge. Learners’ outcome is acknowledged since the process of the search for meaning and the substance of meanings is unique to each individual.

Furthermore, constructivist learning approaches facilitate context- and content-dependant knowledge construction through interactive learning (Vygotsky 1978:56-57).

Learners become interactively engaged with the learning material, learning contents, peers and educators.

The role of the educator is to conceptualise as a facilitator who assists learners in becoming increasingly independent in developing their cognitive abilities. The educator promotes learners' progress towards higher levels of cognitive abilities. The educator does this by providing guidance when learners are unable to perform tasks independently while allowing learners increased independence as their abilities required to perform the said tasks develop. The educator mediates between the information and communication technologies, learning experiences, the learning content, and the learners. The educator posts information on the discussion forum and podcasts to stimulate learners' thinking abilities. Social constructivism suggests that learners be actively involved in a joint enterprise with the educator and fellow learners in creating new meaning (Ruey 2010:707).

Social constructivism further emphasises how meanings and understanding of social encounters grow. In the constructivist learning environment, students are encouraged to engage in learning, to discuss, argue and negotiate ideas, and to collaboratively solve problems, while educators design and provide the learning content and facilitate learning activities (Ruey 2010:707).

When designing social constructivist pedagogy for adult learners, the proponents of this theory recommended that six instructional principles be considered: namely, interactive learning (interacting with educators and peers rather than engaging in isolated learning); collaborative learning (engaging in collaborative knowledge construction, social negotiation and reflection); facilitative learning (providing a safe, positive learning environment for sharing ideas and thoughts); authentic learning (connecting learning context to real life experience); student-centred learning; and high quality learning (Ruey 2010:709). Using Vygotsky's theory makes it possible to design a class-room environment to foster cognitive development through social interaction. Students will work frequently in groups, starting with pairs progressing even to larger groups as the tasks and students' abilities permit. Student discourse will be central to the effective functioning of these groups (Lois 2009:21).

Social constructivism can be applied in ODL institutions by utilising on-line interactive tools. This is achieved by organising learners in learning groups either within a shared geographical space or different geographic spaces. At Unisa, the social perspective is fostered through the environment of learning. Learning management tools, such as myUnisa such as discussion forums and podcasts, and the people involved in the teaching and learning being (instructors and learners). The language prescribed by Unisa and used in the utilisation of on-line learning has become known as the socio-cultural perspective. Using the common language in ODL promotes interaction. The cognitive perspective depends on the individual consciousness of utilising the knowledge of utilising on-line interactive tools with the subject matter to promote social interaction. Therefore, teachers should assure that students either possess or acquire the appropriate relationship knowledge and abilities (Lois 2009:21).

Ruey (2010:716) developed a model for facilitating constructivist-based adult on-line learning which supports Vygotsky's pedagogy and learner interaction. In his model, he identified three roles. The facilitator's mentoring; in the facilitator's mentoring role, the Theory Acquisition (TA) mentoring and the learners' monitoring role. The facilitator helps individual learners develop a sense of responsibility for their own learning. The use on the notion of a learning community, such encouraging learners to engage in a group-based project and also participate in the class-level discussion forums. The face-to-face meeting held in the first week of the current course appears to be an ideal time for the learners to initiate such a contract. Another role of the facilitator is to ensure that the learners engage in critical reflection and higher order thinking and also receive adequate feedback, particularly for the facts submitted individually as the learning contract progresses. Timely and meaningful feedback contributes to the instructional quality of the on-line course. Feedback of assignments as an example can be posted on-line by the instructor for the student to refer.

The theory acquisition model proposes the creation of an on-line "Welcome" message for the student introducing himself/herself even by attaching his/her own picture on the welcoming message. An announcement is then made on the purpose of interacting on-line and the purposes of the module. Learner support will then be given both on-line and face-to-face. By frequently interacting with the learners and encouraging them to interact with their peers, engenders an aura of comfort for learners in the ODL teaching and learning context (Ruey 2010:717).

Learners' moderating role based on the concept of learners' moderating role regard the learners as the main characters in the learning activities and are expected to actively participate in the knowledge sharing and knowledge construction process. It appears that the pedagogical strategy requiring learners to take turns, being in charge of the weekly report activity is useful for helping them gain a sense of ownership of their study and for reinforcing their feeling of the learning community. In order to provide learners with a better understanding of the quality of their work, a peer review mechanism is suggested. To alleviate the workload of occupied adult learners, a rotating review approach may be considered; for example, the learners rotate in providing feedback to a certain number of peers every week (Ruey 2010:718).

Tu and McIsaac (2002:131) support Vygotsky's social interaction theory. They proposed three dimensions of social presence, which emerged as important elements in establishing a sense of community among on-line learners. These are: the social context, on-line communication, and interactivity. Social learning requires cognitive and environmental determinants. Social presence is necessary to enhance and foster on-line social interaction.

Quintana (2005:6) also supports Vygotsky's social interaction theory. Quintana asserts that dialogue is important because using language and engaging in dialogue with others gives an opportunity to engage in knowledge construction and knowledge organisation. The latter process helps the learner to move from the spontaneous, "everyday" concepts that may comprise their naive understanding, to the more scientific, formal concepts they are learning. This motivates the need for social interaction and dialogue between the learners and their peers, teachers, and experts in the domain they are learning. The notion of assistance comes from social interactions.

3.2.2 Brunner and the cognitive constructivist theory

Building on the ideas of the progressives, Jerome Bruner explored the notion that disciplines have certain structural elements – core ideas and approaches to knowledge and understanding – that should guide curriculum development in a manner that connects to the development of the learner. Bruner also developed the idea that if complex material is broken down into its essential ideas, any student can learn any

subject matter. “Any subject can be taught effectively in some intellectually honest form to any child at any stage of development”, he asserted (Brunner 1966:31).

Furthermore, Brunner developed the concept of spiral curriculum which returns to the same subject matter with the student at periodic points in time, but at each “spiral” the material is substantially deeper in its intellectual demands (Hammond, Austin, Orcutt & Rosso 2001:9).

Brunner was as deeply involved in the development of educational matters, such as cognitive processes as problem solving, conceptualising, thinking and perceptual recognition (Brunner 1966:4, 31). According to Tomei (2008:696), a major theme in Brunner’s theoretical framework is that learning is an active process in which learners construct new ideas or concepts based on their past or current knowledge. The learner transforms and selects information by relying on a cognitive structure.

Students interact with the world by exploring and manipulating objects, wrestling with questions and controversies, or performing experiments. As a result, students may be more likely to remember concepts and knowledge discovered on their own. Grasping the structure of a subject helps understanding it in a way that permits many other things to be related to it meaningfully. To learn the cognitive structure is therefore synonymous with learning the inter-relatedness of things/phenomena (Tomei 2008:696).

The often unconscious nature of learning structures is perhaps best illustrated in learning one’s native language. In order for learners to understand the cognitive structure, they should understand the language of the presented content to achieve effective learning. Brunner proposed a view that might be called evolutionary instrumentalism. Man’s use of mind is dependent upon his ability to develop and use “tools” or “instruments” or “technologies’ that will make it possible for him/her to express and amplify his/her powers. Language is perhaps the ideal example of such powerful technology not only power for communication, but for the “reality” of representing remote and immediate matters; and for doing all these things according to the rules that permit us to represent “reality’ and to transform it by conventional, yet appropriate rules (Brunner 1966:31).

As technology grows increasingly complex in both machinery and human organisation, so does the role of the educational institution become more central in society, not only as an agent of socialisation, but as transmitter of basic skills. Brunner believed that discovery learning has advantages of, encouraging active engagement of the learner in teaching and learning, promoting learner's motivation, promoting autonomy, responsibility, and independence of the learner in the teaching and learning process, development of creativity and problem solving skills, and a tailored learning experience of the learners (Learning Theories Knowledgebase 2011:1). Unisa encourages learners' utilisation of on-line interaction tools in order to share knowledge of their discovered information.

3.2.3 Pask and the conversation theory

The fundamental idea of Pask's theory is that learning occurs through conversations about subject matter that serves to make knowledge explicit. More than one user can learn a subject matter represented in a conversational domain. The most interesting situations involve group or team activity (Pask 1976:185).

Pask identified two different types of learning strategies: serialists who progress through an entailment structure in a sequential fashion, and holists who look for higher order relations. The difference between the two is "Free learning" and "Teach back". When a complex subject matter is learned by a student it is possible to distinguish between comprehension learning and operation learning as dominant learning styles. Comprehension learners pick up the overall picture of the subject matter. For example, type and number of items in a class, and a clear picture of where information about items can be discovered. These learners may or may not be able to perform the operations required to use the subject matter information (Pask 1976:84).

Different learning styles of learners need to be considered in conversation theory and interaction should be the key in teaching and learning. Scott (2001:343) supports Pask's theory in his domain-independent model of the processes of coming to know, one in which observers share understandings and do so in agreed ways. A domain-independent model is designed to help conceptualise and understand what takes place when effective communication occurs. The process of "coming to know" a participant's role in conversation can be said to understand another participant's "knowledge". With

CT, Pask provides a very comprehensive theoretical framework and a wealth of associated empirical studies of learning and teaching, though more recent constructivist work on dialogical, conversational aspects of “coming to know” run the risk of overlooking Pask’s work and ideas (Scott 2001:359).

In seeking to develop an understanding of how students approach learning, Scott (2001:359) – a supporter of Pask – identified the conversational framework for academic learning, according to which the teaching and learning process is an interaction between teacher and student. Learning is mediated by the educator who persuades students to make sense of various phenomena using the accepted concepts and ways of thinking characteristic of their discipline teaching that incorporates discussion reflects the iterative character of the learning process. For many on-line educationists, "courses should feature ongoing and substantive interaction between instructor and students and among students" (Scott 2001:359).

At Unisa, the educator interacts with the learners of his/her allocated module through myUnisa discussion forum link. Learners are encouraged to interact also with each other and the subject matter and give each other feedback on-line through the discussion forum link. The educators give learners feedback of the assignments to guide them of how an assignment was approached. In the traditional ODL mode, feedback is given through assignments that are mailed to students. Giving feedback to the learners supports the “Teach- back” notion entailed in Pask’s theory.

3.2.4 Moore and the transactional distance theory

The transactional distance theory explains that distance is not simply a matter of geographic distance, but a pedagogical phenomenon as well. What is important are the effects of that geographic separation on teaching and learning, especially on interaction between learners and teachers, on the design of the courses, and on the organisation of human and technological resources (Moore & Kearsley 2012:209).

If students and teachers are not together at the same time, they are separated by distance. As a result, it becomes necessary to introduce an artificial communication medium that will deliver information and also provide a channel for interaction between them (Moore & Kearsley 1996:1).

The most important evolution in distance education has been the development of highly interactive telecommunications media. This is the family of teleconference media, the use of interactive computer networks, audio, audio-graphic, and video networks, which may be local, regional, national and international and are linked by cable, microwave and satellite (Moore 1997:26).

The use of these media has added the possibility of faster dialogue with the teacher and by computer conferencing. These media provide less structured programmes than the recorded or print-interactive media. Above all, the teleconference media allow a new form of dialogue that can be called inter-learner dialogue which occurs between learners and other learners, alone or in groups, with or without the real-time presence of an instructor. Through using audio-conference, videoconference, and computer conference, learner groups interact with other groups and within groups. Through these tools there is a possibility of distance learners to share in the creation of knowledge (Moore 1997:26).

Moore's theory focuses on interaction and in particular, interaction between the learner and content, learner and instructor, and learner and learner. The "content" in the first type of interaction included many kinds of media such as print, broadcast, audio and computer software. Based on his definition, interaction, in a broad sense, covered almost all active processes that constitute teaching and learning (Lulee, 2010:1).

The transactional distance theory should apply not just to the learning material, but to the totality of a learning programme (Aluko, Hendrikz & Fraser 2011:115). This means that consideration of the content as a whole, including the learning outcomes, the content of the subject and the assessment criteria and tools are important to enhance effective learning. After assessment, feedback should be given at all times by the educator in order to improve learning.

Generally in on-line interaction, researchers had a widely-accepted belief that the use of interactive technology with the affordance of two-way communication and multiple representations may provide more interactions for on-line learners, and thus lead to enhanced learning outcomes. This belief has been supported empirically to some extent. Other research studies have suggested positive relationships between the amount of interaction and the perceived level of satisfaction, implying that more

interaction is better for affective aspects of learning in distance environments (Hyo-Jeong 2010:256).

Educators indicated that the challenge experienced in transactional distance – notwithstanding that effectiveness of teaching is dependent on how well educators use the technology involved – was indicated by the educators not being able to see students' physical and emotional reactions to what it is said and done (Moore & Kearsley 1996:126). Another challenge is that the distance education format challenges educators to develop learning environments that place more responsibility on students to accomplish academic tasks with minimal teacher assistance.

It is an open-ended learning model that will bring some anxious moments to the best on-line educators. For instance, educators who are used to having a tightly controlled classroom might feel somewhat uncomfortable monitoring on-line discussion forums. The discussion format has an unpredictable dimension that makes student-centered learning dynamic but less easy to control.

Students can offer thought-provoking dialogue because they have time to reflect on the posted comments before sharing their thoughts (Muirhead 2001:1). Students need to be given a chance to ask or answer questions. In most subjects, students need the opportunity to express opinions. Participation in this kind of activity can be integrated by setting up student group discussions at local sites (Moore & Kearsley 2012:113).

On-line discussion forums are utilised at Unisa for on-line interactivity to allow students' freedom of participation. Increasing interactions between learners and instructors is critical to help learners attain learning outcomes in on-line learning. In order to achieve desired learning outcomes, both the learner and the instructor should decrease the transactional distance. The instructor and the learner should initiate and participate in dialogues in the form of interaction; with the instructor developing courseware and enabling the learner to exercise autonomy, and the learner following the structure of the course content and delivery (Huang 2010:2).

Moore's theory of transactional distance was also supported as a conceptual framework by other researchers like Anderson (2003:5), who developed an "Equivalency Theorem" based on student-teacher, student-student, and student-content interaction.

Differentiating between high and low levels of interactivity is largely a quantitative exercise in which researcher, developer or the participants themselves count the number of times they are actively engaged with other participants or content.

An interaction-based model of e-learning is one of the examples of “Equivalency Theorem”. This interaction theory leads to the viewing of education as resulting from the creation of opportunities for each of the three major actors to interact with each other. The major interactors are learners and educators and the interactions with each other and the content. Learners can interact directly with content that they find in multiple formats especially through the Web. In spite of the latter, many choose to have the learning sequenced directly through the assistance of the teacher. This interaction can take place using a variety of Internet-based synchronous and asynchronous interactions (Anderson 2003:5).

Stein, Wanstreet, Calvin, Overtoom and Wheaton (2005:105) obtained data from learners in six courses that varied by format, structure and opportunities for interaction. The results indicated that learner satisfaction with the course structure, activities, assignments, instructor guidance and encouragement led to greater satisfaction with perceived knowledge gained. Interaction was highly correlated with structure. Interactions initiated by the learners contributed to their satisfaction with knowledge gained. Technical expertise had no effect on satisfaction with perceived knowledge gained.

Based on experience and the literature review, four enabling factors are postulated as being possible input parameters to on-line interaction. They are learner design and assessment; educator management and skill; learner e-literacy; and peer-related learning (Nisbet 2004:126). The environmental factors affecting dialogue include the existence and size of a learning group, language, and the medium of communication. The type of distance education course inherently controls some of these factors. For instance, video tele-courses have very little, or no dialogue. This is due to the fact that often the video-tele-course is set up so that the student watches the televised video course but is not required to communicate with the instructor. Further, since no mechanism is in place for the student to give feedback to the instructor and vice versa, no dialogue occurs (Moore & Kearsley 1996:202).

Enabling parameters to on-line interaction and communication includes dialogue, structure and learner autonomy. A dialogue is purposeful, constructive and valued by each party. Each party in dialogue is respectful and active listener; each is a contributor and builds on the contribution of the other party or parties. The direction in a dialogue in an educational relationship is towards the improved understanding of the student (Gorsky & Caspi 2005:3).

There are other environmental factors that influence dialogue and thus transactional distance. These include the number of students each distant teacher should provide instruction to and the frequency of opportunity for communication, usually determined by administrative and financial constraints. The other factor is physical environment in which the students learn and the physical environment in which teachers teach (teachers have been known to conduct audio-conferences from a telephone in a public hallway and student groups frequently attempt to engage in dialogue through noisy office speaker phones). The emotional environment of teachers, especially the regard, or, more likely, the degree of disregard given to their distance teaching achievements by their administrators; and the emotional environment of learners, especially the regard with which their study is seen by significant persons in their home and work-places (Moore 1997:23).

The second enabling parameter is structure which is a measure of the extent to which a course's elements such as learning objectives, content themes presentation strategies and evaluation activities change to meet the needs of the learners. A high measure of structure indicates that a course is rigid and cannot easily adapt to each learner (Kang & Gyoke 2008:204).

The third one is learner autonomy which deals with the learners' control over learning activities and processes. Great transactional distance requires high learner autonomy (Kang & Gyoke 2008:205). The above variables – dialogue, structure and learner autonomy – are inter-related. Dialogue and transactional distance are inversely proportional, as one increases the other decreases. Increased programme structure decreases the extent of transactional distance (Kang & Gyoke 2008:204). According to Moore (1997:23), by manipulating the communication media it is possible to increase dialogue between the learners and their teachers, and thus reduce the transactional

distance. Dialogue is further influenced by teacher personality, by learner personality and by content.

The degree of transaction distance dictates just how much and what kinds of instructor-provided *dialogue* and *structure* are needed in order to accommodate for the distance. To overcome this transactional distance, which is pedagogical and not geographic, instructional design and interaction procedures were recommended. The separation actually dictates that teachers plan, present content, interact, and perform the other process of teaching in significantly different ways from the face-to-face environment (Moore & Kearsley 1996:200-201).

In general, the theory of transactional distance interrogates the interplay between dialogue, structure and learner autonomy and the manner in which these variables interact to either increase transactional distance, the feeling of connectedness and a measure of efficiency in diminishing mis-communication, or to decrease transactional distance. In terms of the fundamental tenets of this theory, as dialogue increases, structure decreases and transactional distance decreases (Shearer 2010:1).

Benson and Samarawickrema (2009:5) support Moore's transactional distance theory. The above two authors assert that the rapidly changing range of options available for innovative e-learning approaches based on emerging technologies has given renewed importance to teaching and learning issues that have long been familiar to distance educators. These issues for an example, are computer mediated communication and multimedia which arise from the separation between learners, and between educators and learners, which occur when learning, are undertaken wholly or partly on-line. There may be important implications that emerge from aspects of separations.

The educator and the learner should interact to facilitate teaching and learning. There should also be a response during their interaction. The educator should design a teaching programme and the learner should be autonomous at the end of the learning process.

3.3 CONCLUSION

The discussed learning theories are linked and cover the aims of this study. They have covered the interaction on-line between students and educators in an ODL environment. This interaction is based on the subject matter that serves to make knowledge explicit. Moore's transactional distance theory explains that distance is not simply a matter of geographic distance, but a pedagogical phenomenon as well through knowledge sharing to facilitate teaching and learning. Students seek knowledge information on their own thus supporting discovery learning as it has been indicated by Brunner. Discovery learning enables learners to make use of their learning experiences, by linking new information with their cognitive structure of existing knowledge. By doing so, the students need to interact with each other and with the educator in order to share the discovery of new knowledge thus enhancing social constructivism and conversation as indicated by Vygotsky and Pask. In order for interactivity to take place there should be a pedagogical relationship between the students and the educators.

CHAPTER 4

RESEARCH DESIGN AND METHODOLOGY

4.1 INTRODUCTION

This chapter described the research design and the methodological dimension of the manner in which the study was conducted in its intended purpose of exploring learners' on-line interactivity in an Open Distance Learning (ODL) institution with other learners, educator, study materials, and the open distance learning institution itself.

4.2 RESEARCH DESIGN

Polit and Beck (2008:66) described research design as an overall plan for obtaining any answers to the questions being studied and to handle some of the difficulties during the research process. According to Burns and Grove (2009:275), research designs are blueprints for conducting a study that maximise control over factors that could interfere with the validity of the findings. Research designs are developed to meet the requirements of a study. They are plans and procedures for research that spare the decisions from broad assumptions to detailed methods of data collection and analysis (Creswell 2009:233).

The design is a set of instruction to the researcher to gather and analyse data in certain ways that will control who and what is to be studied (Wood & Ross-Kerr 2011:116). Polit and Hungler (1999:166) indicate that selecting a good research design should be guided by an over-reaching consideration, namely, whether the design does the best possible job of providing trustworthy answers to the research questions. In this study, a mixed method type of research design was used, embracing both quantitative and qualitative research approaches in order to achieve the research objectives and to address the research problem. The two approaches are discussed individually below.

4.2.1 The quantitative approach

Polit and Beck (2008:763) define quantitative research as the investigation of phenomena that lead themselves to a precise measurement and quantification often involving a rigorous and controlled design. The quantitative design uses a survey which is non-experimental and descriptive.

The strength of quantitative data lies in their ability to provide generalisability, precision and control over extraneous variables (Polit & Hungler 1999:258). In this study, the intention was to generalise the findings to all HSM learners hence, the selection of second and third year HSM learners from the target population of all HSM learners, with specific reference to those who were active in on-line interaction.

They were chosen because of their exposure to the utilisation of on-line interactive tools during their previous year of study in an ODL institution. Examples of on-line tools used at Unisa are indicated at the Website link of Unisa (myUnisa). Some of the above-mentioned on-line tools are: welcome messages, discussion forums, podcasts frequently asked questions, assignments and reading materials. Other than myUnisa, on-line interaction also occurs through emails and video conferences.

The in-depth literature review, being an important aspect of quantitative research, assisted in identifying relevant existing tools and pertinent questions and further defined the construct to be measured (Burns & Grove 2003:112). For quantitative data collection, the administration of the self-developed questionnaire was conducted on-line through the utilisation of the self- assessment link of myUnisa.

The discussion of the instrument for data collection will be discussed in phase 3 of this chapter. The construct to be measured in this study refers the extent to which on-line interactive modes are utilised by the HSM learners in an ODL institution to facilitate learning. The numerical data added more value to the study by providing percentages to assess the degree of the nature of the learners' on-line interaction in an ODL institution with other learners, educators, study materials and ODL institution.

4.2.1.1 Descriptive studies

These are referred to as the description of the phenomenon about which little is normally known. From the data collected, patterns or trends may emerge and possible links between variables can be observed, but the emphasis is on the description of phenomena (Parahoo 2006:467). Descriptive studies provide the basis for the conduct of correlational, quasi-experimental and experimental studies. They offer researchers a way to discover new meaning, describe what exists, and determine the frequency with which something occurs and categorises information (Burns & Grove 2009:25). Furthermore, descriptive studies offer the types of statistics answering descriptive questions by such measures as frequency, central tendency and dispersion (Parahoo 2006:467).

Descriptive statistical analysis refer to the analysis of numeric data obtained for the purpose of obtaining summary indicators that describe a sample, a population or the relationship among the variables in each. Descriptive research is concerned with exploring the attributes of a phenomenon (Teddlie & Tashakkori 2009:333). During the review of the literature, no study was found to address the HSM learners' on-line learning in an ODL environment with consideration of prospects and challenges of interactivity.

Since this study is descriptive and explorative, the focus was on describing the HSM learner's on-line interaction as well as exploring their experiences in on-line interaction with other learners, educators, study materials, and the ODL institution itself.

4.2.2 The qualitative approach

Bowling (2009:380) describes qualitative research as a method of naturalistic enquiry which is equally less obtrusive than quantitative investigations and does not manipulate a research setting. It aims to understand the individual's view without making any value judgments during data collection. Qualitative studies are a means for explaining and understanding the meaning individuals or groups ascribed to a social or human phenomenon.

The process of research involves emerging questions and procedures, collecting data in the participants' setting, analysing the data inductively, and building from particulars to general themes while making interpretations to the meaning of the data (Creswell, 2009:232). The exploratory design is also known as qualitative research and requires personal involvement. When the samples are deliberate or convenient, qualitative questions and observation are qualitative and the analysis of data is by means of verbal description (Wood & Ross-Kerr 2011:123).

Creswell (2009:175) cites the following qualitative research characteristics. These characteristics correspond with the qualitative approach of this study.

- Researcher is a key instrument. Qualitative researchers collect data themselves by examining documents, observing behaviour, and interviewing participants. The researcher may use an instrument for collecting data, but the researcher, rather than the instrument itself, is the one who actually gathers information.
- Qualitative researchers gather multiple forms of data, such as interviews, observations and documents, rather than rely on a single data source. The researcher then reviews all of the data, but makes sense of it and organises it into categories.
- Qualitative researchers build their patterns, categories and themes from the bottom up by organising the data into increasingly more abstract units of information.
- In the entire qualitative research process, the researcher keeps focus on learning the meaning that the participants hold about the problem, not the meaning that the researchers bring to the research problem.

Polit and Hungler (1999:259) criticise qualitative studies' lack of generalisability and reliability. The employment of data collection and analysis methods that rely on subjective judgments is cited as the weakness in such studies. In this study, this potential weakness was overcome by the use of both qualitative and quantitative data collection methods, which are complementary and remain mutually exclusive. Based on previous discussions, triangulated qualitative and quantitative designs were employed.

Beside the corrected weakness of lack of generalisability the values to be derived from this study was that the emerging descriptive data would assist in understanding the nature of on-line interaction between the learners and educators and the support needed by learners to use on-line interactive tools to interact in an ODL institution in order to assist in developing guidelines for improving learners' on-line interactivity in an ODL institution.

4.2.2.1 Descriptive and exploratory approaches

Descriptive and exploratory studies are interested in accumulating detailed descriptions of existing variables to access the current situation and its activities. In order to improve on-line interaction of health studies learners in an ODL environment a descriptive and explorative study was used (Lobiondo-Wood & Haber 2006:240).

Interesting variables were the participants' attitudes, opinions, experiences facts and feelings in relation to learners' on-line interaction in an ODL institution with other learners, educators, study material and an ODL institution. Qualitative researchers deal with descriptions of the "dimensions, variations and importance of the phenomenon" and quantitative descriptions focus on the prevalence, incidence, size and measurable attributes of phenomenon". Consequently the exploratory component rather than observing and describing, goes further to investigate the full nature of the phenomenon the manner which it occurs and related contributing factors and to determine if there are any interesting extremes in the data (Polit & Beck 2008:19-20).

Using the demographic data helped in having more knowledge about the participants and getting more information which will have an impact on the findings.

4.3 RESEARCH METHODS

Sequential explorative description was employed for data collection to complement the mixed research method. In sequential mixed methods studies, information from the first sample is often required to draw the second sample (Teddlie & Tashakkori 2009:365).

The researcher seeks to elaborate on the findings of one method with another method in sequential mixed method (Creswell, 2009:14).

In this study to support sequential mixed methods, the researcher began with qualitative methods and ended with quantitative method of data collection. The discussion of the research method covered the following aspects:

- Population, sample, sampling technique, setting, instrumentation, data collection process ethical consideration and data analysis.
- Three phases of data collection:
    - Phase 1: myUnisa discussion forum
    - Phase 2: focus group interview
    - Phase 3: on-line questionnaire

4.3.1 Population

Burns and Grove (2009:714) define a population as “all elements (individuals, objects, events or substances) that meet certain criteria for inclusion in a study, sometimes referred to as a target population. A research population refer to “all individuals or objects with common, defining characteristics” (Polit & Beck 2008:56). An accessible population is the total number of elements, subjects or members from whom it is possible for a researcher to collect data (Teddlie & Tashakkori 2009:170). The population for this study comprised of HSM learners of the University of South Africa (Unisa).The sample consisted of registered second and third year HSM learners of Unisa who do interact on-line in an ODL institution. This sample was used because it was accessible to the researcher. Easier accessibility was due to the fact that the researcher is one of the HSM educators.

HSM modules have a practical component where there is face-to-face encounter with the learners at six Unisa regional campuses. Even on-line, the researcher has accessibility to the learners as they were connected to the modules on-line.

The sample was also mostly suited to provide required responses which would answer the research questions of this study such as: how second and third year HSM learners

use on-line interactive tools to communicate with each other, with the educators, the study materials, and with an ODL institution.

4.3.2 Inclusion criteria

According to Burns and Grove (2003:485), inclusion criteria are those sampling criteria or characteristic that the subject or element should possess for consideration as part of the target population.

Factors considered for participants' inclusion in this study are:

- both males and females
- registered second and third year HSM learners of Unisa who are exposed to on-line interaction
- employed in any private or public sector organisation
- all ages
- South African and non-South African

The researcher expected these inclusion criteria to provide sufficient information, clarity and insight on how learners can be supported to interact on-line in an ODL institution, thus ensuring validity of this study.

4.3.3 Research setting

The research milieu selected for the study were the six (6) Unisa regional campuses situated in six provinces in South Africa. The data collection was conducted sequentially as follows: in Polokwane (Limpopo Province), Pretoria (Gauteng Province), Bloemfontein (Free State Province), East London (Eastern Cape), Durban (KwaZulu-Natal Province) and Cape Town (Western Cape Province) (refer to Annexure L).

The setting was chosen due to its convenience for focus group data collection where the learners were engaged with during their HSM practicals.

These settings were chosen by Unisa's Department of Health Studies for practical purposes. Data collection from myUnisa discussion-forums and questionnaire was conducted on-line.

4.3.4 Triangulation of qualitative and quantitative research methods

This study used methodological triangulation to explore the phenomenon of on-line interactivity amongst Health studies' students, at an Open Distance Learning institution. In this case three phases of data collection were used. They are myUnisa discussion forum (qualitative in nature), focus group interviews (qualitative in nature) and on-line questionnaire (quantitative in approach).

The researcher was of the opinion that the combination of these methodological strategies was the most suitable because they are complimentary, encompassing both words and numerical data to communicate the results (Sheppard, 2004:215). Therefore, by mutually supplying each other's lack, the limitations of a single method are minimised.

In this study the researcher began with qualitative interview for explorative purposes and following up with quantitative, survey method with a larger sample so that the researcher can generalise the results to a population (Creswell 2009:14).

By utilising triangulated forms of data collection, it is envisaged that all the dimensions of the research topic, it's stated research problem and research objectives established the effectiveness of on-line technologies and their contribution to learners' capacity for interactivity, interaction, engagement and the facilitation of learning.

Triangulation greatly enhanced in obtaining credible, reliable and validated findings of this study. The tools of choice employed for generating the required data from second and third year HSM learners were: myUnisa discussion forum focus group interviews and questionnaire posted on-line. This utilisation of multiple approaches aims to explore and analyse the nature of the phenomenon under study and to give considerable attention to validity issues.

The addition of goal and quality strands improves one's understanding of the phenomenon and answers to the research questions by explaining the reasons and meaning behind the findings of previous strand (Teddlie & Tashakkori 2009:286). Creswell (2009:40) describes mixed methods as an approach to inquiry that combines qualitative and quantitative forms.

- It involves philosophical assumptions, which is more than simply collecting and analysing both kinds of data.
- It also involves the use of both qualitative and quantitative research approaches in tandem so that the overall strength of a study is greater than the usage of either qualitative or quantitative research.
- Consequently, multiple approaches were used sequentially – starting with myUnisa discussion forum and focus group interviews (qualitative approaches), and ending with the quantitative approach, the aim of which was to explain and analyse the nature of the phenomenon under investigation, and to give consideration to validity issues.

Unisa was chosen as the research site because of its popularity as an ODL institution, its size, and the place where the researcher has identified the problem. To date, it is the only institution in South Africa which offers ODL.

By utilising data, method and investigator forms of triangulation, it is envisaged that all the dimensions of the research topic, its stated research problem and research objectives will assist to establish the effectiveness of on-line technologies and it's contributions to the learners' capacity for interactivity, engagement and the facilitation of learning in an ODL institution. This multiple methodological approach is advantageous for maximising the data collection, data presentation and data analysis processes.

Deductive and inductive approaches constitute an important component of scientific reasoning and knowledge (Bowling 2009:131). Both deductive and inductive reasoning were chosen. Deductive approach seems to dominate in quantitative studies, as it is the researcher who selected the variables of choice to be investigated in advance. Quantitative research is described as producing generalisable findings to the setting and the sample (Parahoo 2006:55).

Inductive reasoning was opted for, due to the nature of the research problem and the attendant experiential observations. The research questions, on the other hand, were developed deductively.

On-line interactivity, prospects and challenges in ODL constitute the selected variables pertinent to this study. The inductive approach is useful when little is known about the research topic. The most distinct feature of the inductive approach is that it dominates in qualitative studies. The other essential distinguishing feature of qualitative approaches is exploration as a means to understand perception and actions of the participants. The rationale for the use of exploration is based on the assumptions that researchers can only understand perception and behaviour from participants' own perspectives, in their own words, and in the context in which they live and work and that there can be different interpretations of the phenomenon (Parahoo 2006:63).

On the other hand, the purpose of qualitative exploration is to develop concepts, themes from observation, interviews and interpretation of discourse. Ultimately, the purpose of exploration is openness to ideas which can emerge out of listening and observing people to gain a better understanding of how people think, as their behaviour as a group and as individuals (Parahoo 2006:63). This study's purpose is to explore the extent to which on-line interactive mode is utilised by HSM learners.

4.4 PHASES OF THE RESEARCH METHODS

The first phase comprised mainly of on-line data collection. The second phase was dominated by focus group interviews, while the third phase was largely dominated by the on-line questionnaire.

4.4.1 Phase 1: myUnisa discussion forum

Phase 1 addressed the objective to:

- determine the nature of on-line interaction between the learners and educators

A non-random sampling technique using available/convenient representation of the sample was appropriate. A simple non-random sampling technique afforded the

researcher's judgment of the research milieu's conformability and the respondents' compatibility with the anticipated outcomes of the investigation. The rationale for employing convenient sampling is premised on the need to have an understanding of on-line interaction from the sample, its prospects and challenges to the learners at an ODL institution, as well as seeking the generalisability or transferability of the results.

The existing data was found in the interaction of the learners and educators, and was reflected in myUnisa discussion forum. The researcher was interested in extracting data from the information found in the discussion forum interaction, which addressed the research objectives. The nature/type and the trends of interaction were of interest for data analysis purposes. There was no instrument which was used because it was not easy to do so, as data was readily available in the discussion forum which covered the interest of the researcher.

Data collection was conducted weekly by opening, viewing and saving myUnisa discussion forum interaction of the second and third year HSM modules. This weekly process assisted in achieving the research findings based on the objectives. The documents of the weekly interaction were printed (refer to Annexure I). Hard and electronic copies were saved as data collection evidence, and for data analysis purposes. The period of data collection started from the last week of March 2012 to the third week of June 2012.

According to Burns and Grove (2009:44), data analysis is the process used to reduce, organise, and give meaning to the data collected. This is done to make the results or findings easier for the reader to grasp, and also provides a way of enabling the research question to be answered in the light of the study findings (Holland & Rees 2010:61).

The nature/type and trends of interaction of learner-to-learner, learner-to-educator, learner-to the-study materials, and learner-to-the-ODL institution, were analysed.

4.4.2 Phase 2: Qualitative – focus group interview

Focus group interview is a measurement strategy designed to obtain the participants' perceptions in focus areas and in settings that are permissive and non-threatening in a qualitative study (Burns & Grove 2003:485). The researcher had face-to-face contact

with the participants and data was collected qualitatively in the form of focus group interviews.

Being qualitative in nature just like in myUnisa discussion forum employed. A non-random sampling technique using available/convenient representation of the sample was appropriate for addressing the research objective. The aim of selecting the focus group method was to explore participants' experiences of a particular phenomenon and to give them opportunities to share and discuss their ideas (Parahoo 2006:331). It was conducted to obtain richer information about the study in order to contribute towards further findings. The participants in the focus group interview ranged from 6-13 in number at each setting. This phase addressed the objective to:

- explore the learners' on-line interactivity in an ODL institution with other learners, educators, study materials, and the ODL institution itself

An interview guide was used to guide and probe the HMS learners' levels of on-line interaction. It consisted of open-ended questions (refer to Annexure E).

The researcher was also the main instrument in this regard. Data was collected during the second semester (last week of June- first week of September 2012). This period was convenient as it coincided with the HSM practicals and the participants' accessibility. The allocated time for focus group interviews was 35-60 minutes. The process was the same in all provinces. The difference was the venue, date, duration and the number of participants. Six (6) focus groups were held at six (6) Unisa regional campuses in Polokwane, Pretoria, Bloemfontein, East London, Durban and Cape Town. The total number of participants from the six (6) settings was fifty-four (54).

Rapport with the participants was firstly established, in order to enable ease of researcher-participant dialogue. The rapport was established the day before the interviews. Prior to the actual interviews, introduction of the entire research process was done for 5-10 minutes. The title and purpose of the research were articulated. On-line interactivity was explained to the class, and learners who interact on-line were requested to give indication by raising their hands. They were requested to meet with the researcher with the aim of building the rapport and to give further information about the study.

The purpose and the significance of the study were indicated. Proof of ethical clearance and letter of permission to conduct the study was shown to the participants. The participants were ensured that their involvement in the study is voluntarily and that failure to comply would not result in any form of penalty. Confidentiality was assured. No names were to be reflected in the interviews. Codes were assigned by the researcher to the participants for consistency and for data analysis purposes. The participants were also requested to fill-in the Informed Consent form a day before the actual interview, during which distribution of the demographic data was also concluded.

The purpose of performing some tasks a day before was to give the participants a chance to further think if they were still willing to participate in the study, and to consequently fill in the documents during their own time. By so doing, the actual time of the interview would not be consumed by filling-in of documents. The participants were requested to bring the forms along the following day, which was the day of the actual interview. The researcher requested the participants to leave the demographic part of the questionnaire blank, as codes were to be filled-in there. The aim was to give them codes during the actual day of the interview for anonymity and confidentiality, and for data analysis purposes. The coding was calibrated according to the abbreviation of the name of the regional campus, followed by a numeric number, for example, Polokwane1 for POL1 as a code. The demographic data questions used in this phase were used again during the quantitative data collection phase. The purpose of reusing demographic data questions was to gain more knowledge about the participants, to capture information of the participants who did not participate in the focus group interview, or who might have participated but did not fill-in other required information.

The participants were verbally requested for permission in advance to use the Audio Digital Recorder (ADR) during the interview, to capture the conversations, and to avoid researcher bias. This was used after verbal agreement by the participants. Further purpose of using ADR was to help during data analysis and to show to the promoters as proof that the interview was conducted. The participants were chosen according to their availability and willingness to participate at the time of data collection.

The participants were probed to get more information about the research questions and for data analysis purposes which might contribute towards the findings of this study. The

discussion was based on on-line interactive tools in an ODL institution, prospects and challenges. Focus group interview gave freedom of expression and helped to obtain in-depth information regarding the research questions and the objectives. Focus group interviews were conducted in English for consistency, understanding, for fairness. Field notes were written during the entire data collection stage.

Non-verbal and gestural cues were also observed in order to augment to the accuracy of data collection. Data was collected until no more new information emerged (data saturation).

Data analysis began simultaneously with data collection. Field notes and Audio Digital Recorder (ADR) and the researcher were the major sources of data collection for data analysis purpose. Giorgi's phenomenological data analysis was used. Each participant's transcription was analysed. Verbatim transcription of ADR is a very critical step for preparing data analysis (Polit & Beck 2008:509), and was very instrumental in the data analysis process.

This means that transcription of the interviews identified the themes which were transformed into meaningful units of the phenomenon. All recorded data was transcribed verbatim by the researcher and research assistants, thus increasing accuracy. Together with field notes, this data was coded independently by the researcher and organised per focus group interview of each province, beginning with the province where the focus group interview was first conducted.

Within each province, participants' individual data analysis was conducted in relation to the collective group variables. Commonalities of individual responses were identified, grouped together and compared.

Coding of data helped to identify dominant issues emanating from both written responses and themes from non-verbal cues (Patton 1990:376). After clustering related types of narrative information that described the phenomena under study, themes and subthemes were identified. This provided a rich description of on-line interaction modes, challenges, prospects and approaches to improve on-line interactions in an ODL institution. Since the focus of this study is on on-line interactivity among HSM learners in an ODL institution, the analysis included the description of the variations in responses to

commonalities and patterns of these HSM learners' major experiences. The standardised open-ended structure of the interview guide also provided an added advantage for organising data in this form. An interview guide assisted the researcher to ask the participants' questions which might be forgotten during the focus group discussion (refer to Annexure E).

4.4.3 Phase 3: The on-line questionnaire

A cross-sectional survey was utilised in this case. This type of survey is effective for providing a snapshot of the current behaviour, attitudes and beliefs in a population, and enables a quick provision of data (Gay et al 2009:176). In this study, second and third year HSM learners meet the criteria because they have experienced the on-line interaction phenomenon during their previous year of study.

Phase 3 addressed the objective to:

- determine how on-line interactive tools may be used to enhance learner-to-learner, learner-to-educator, learner-to-study materials, and learner-to-ODL institution interactions

Probability random sampling was appropriate in this instance, because it afforded judgments of the research milieu's conformability to, and the respondents' compatibility with the anticipated outcomes of the investigation.

According to Teddlie and Tashakkori (2009:170) probability random sampling technique involves randomly selecting specific units or cases so that the probability of inclusion for every member of the population is "determinable". In this study there was a probability that the sample selected will be able to address the research question.

This study further depended on the willingness of the respondents to respond to the questionnaire, as if they had been targeted by the researcher because of their interaction on-line.

The respondents, willingness was attested to by their response to the questions. The findings will be generalised to enhance external validity. The researcher targeted

approximately more than sixty (60) respondents. This prediction was based on the number of the participants during focus group interview, which was fifty-four (54).

The instrument used was the self-developed questionnaire**,** which is described as a tool that seeks to elicit written or verbal responses from people to a written set of questions or statement. It is a quantitative approach since it is predetermined and structured, in addition to its contribution to the production of knowledge inductively (Parahoo 2006:283).

The self-administered questionnaire was developed in English and tested before the actual main data collection to determine its validity. It comprised of both close-ended and open-ended questions which included the demographic data and on-line interactivity in an ODL environment. An instruction of how to fill the questionnaire was indicated in an instrument. The total of number of questions was sixty-nine (69) (refer to Annexure F).

The questionnaire was developed from the researcher's knowledge, observation and from the literature review. Information during data collection of the sample of previous phases also assisted in drafting the questionnaire. The questionnaire comprised of Linkert scale and close-ended questions which were the primary source of empirical data collection. The questions on the questionnaire (refer to Annexure F) were based on the demographic data and on-line interactivity. Instructions on how the filling-in of the questionnaire was clearly indicated to the respondents on the instrument.

The questionnaire was easy to understand and the language used was clearly intelligible. A review of the key concepts entailed in the research topic made it possible for the content validity of the title.

The questionnaire began with demographic data information, followed by closed ended questions and ended with open ended questions. The structure of the questionnaire comprised of:

- Section A: Eleven (11) questions of the demographic data.

- Section B: Fifty (50) close-ended and eight (8) open-ended questions. In this section, information was needed to know more about the learners' interactivity in an ODL environment (refer to Annexure F).

4.5 PILOT STUDY

To ensure that the instrument is valid, a pilot study was conducted before a bigger study was done. A pilot study is a sample scale study or "trial run" used by the researchers to test instruments for effectiveness in a larger study using the same topic (Polit & Beck 2008:213). Teddlie and Tashakkori (2009:203) refer to a pilot study as a feasibility study, a small scale implementation of the researchers' design, or a set of steps taken to ensure quality of future data collection procedures. The implementation of the pilot study involves collecting data on a limited number of participants who will not be included in the major study. In this study, piloting was conducted for the following reasons:

- Developing and testing adequacy of the research instrument before data was collected in the main study.
- Establishing whether the sampling frame and technique used for data collection are effective.
- Identifying logistical problems that might occur using proposed methods (Teddlie & Tashakkori 2009:203).
- Giving the researcher a fair idea whether all the respondents understood the question in the same way, whether they understand the instructions, how relevant the questions are and to find out whether the length of the questionnaire and its structure are likely to affect the responses (Parahoo 2006:309).

Pre-testing of an instrument was also conducted to determine its feasibility and validity (Brink & Wood 1998:259), where validity refers to the degree to which an instrument measures what it is supposed to be measuring (Polit & Beck 2008:768). Pilot study data collection was conducted in September 2012. A questionnaire which was developed for the main study's on-line data collection was administered face-to-face to the respondents in one of the provinces. Six respondents participated in this exercise in accordance with the study's inclusion criteria. Following the initial introduction by the

researcher and after building the rapport with the respondents, they were verbally requested not to participate in the main study to avoid duplication of the findings.

The informed consent form was attached to the questionnaire and signed by the respondents, who were allocated time to submit the form the following day. All the six (6) respondents returned the fully completed questionnaires, which impressed that the questionnaire met the criteria of this study and may be used for data collection of the main study. There were no challenges which were experienced by the respondents' during the completion of the questionnaire. Permission to proceed with the data collection for the main study was then duly granted.

Notwithstanding the permission to proceed with the study, additional open-ended questions were included in order to further explore the learners' on-line interaction. The reason for this addition was that the researcher needed more information regarding respondents' on-line interaction, thus giving respondents an opportunity to express themselves in writing.

4.6 DATA COLLECTION ON-LINE QUESTIONNAIRE

Following the pilot study, a questionnaire was posted on-line for the main study through the self-assessment link of myUnisa to all second and third year HSM learners. This on-line data collection was done during the third week of September 2012.

The request indicated that only those learners who do interact on-line should respond and return the completed questionnaire. This request was attached as the first part of the questionnaire (refer to Annexure F).

The request included amongst others, completion of the Informed Consent form, maintenance of anonymity and confidentiality, ensuring the participants that their involvement in the study is voluntarily, and that failure to comply would not result in any form of penalty.

Strict adherence to the respondents' confidentiality and anonymity was ensured during the on-line data analysis process. The respondents' anonymity was ensured by means of the learners' numbers and names being deleted from the questionnaire.

Consideration was given to the adherence to Unisa's policy regarding the utilisation of learners' on-line interactivity. The duration for completing the questionnaire and the due date for submission of the response was ten to sixteen days. The reason for this length of time was to give respondents enough time to complete the questionnaire. An information technology specialist assisted the researcher to post the questionnaires on-line. Before the questionnaire was published, the researcher requested the promoter to finally review the questionnaire as an observer, after which the questionnaire was sent to the respondents. Since the data collection is on-line there was only one questionnaire sent to all the respondents. Indication has been given in item 4.4.4 that the researcher targeted approximately more than sixty (60) respondents. This prediction was based on the number of the participants during focus group interview, which was fifty-four (54).

The respondents were thanked in advance for participating in the study in the first part of the questionnaire. An awareness of the questionnaire posting to the respondents was done immediately after publishing. This was done through Short Message Services (SMS), myUnisa notification and myUnisa announcement link. The reason for the three-fold awareness was to ensure that the message reaches the intended respondents. A reminder was sent by using SMS requesting the return of completed questionnaires on the due date (refer to Annexure G).

Table 4.1 below indicates information regarding the number of questionnaires which were returned from both the second year and third year learners who do interact on-line.

Table 4.1: Response rate

Year of study	Number of questionnaires returned
2nd Year	51
3rd Year	36
TOTAL	**87**

4.6.1 Validity, reliability and trustworthiness

In this study, validity of the study's findings is determined by the extent to which the information provided by the respondents gave a reflection about how second and third year HSM learners use on-line interactive tools to communicate with each other, with

educators, with study materials, and with the ODL institution. With the assistance of the statistician, the completed returned questionnaires were allocated a code and responses collated by means of version 39 of the Statistical Analysis System. The Chi-Square test as indicated in item 5.2.3.4 was also used to test the null hypothesis of equal proportions/percentages of the categorical variable categories.

4.6.1.1 Content validity

Data validation types selected to this study was content validity and external validity. Content validity refers to judgments about the extent to which the content of the instrument appears logically to examine and comprehensively include, in a balanced way, the full scope of the characteristics it is intended to measure (Creswell, 2009:167). For the instrument to be accurate it should "access the whole domain of interest" (Talbott 1995:281).

The method of measurement includes all the major elements relevant to the construct being measured (Burns & Grove 2003:478). The questionnaire which was used focused on learners' on-line interactive modes in an ODL institution, nature of interaction, benefits and challenges of on-line interactive tools and how they can be improved.

Before conducting the main study, the developed questionnaire was reviewed by the statistician, three promoters who are also research experts and one of whom is an expert in ODL, as well as an information technology specialist to check for the validity of the questionnaire's content.

4.6.1.2 External validity

External validity relates to the generalisability of the research results to the wider population of interest (Bowling, 2009:202). According to Polit and Beck (2008:301), external validity has to do with "the extent to which relationships observed in a study hold true over variations in people's conditions and settings".

It is of value to involve a large representative sample. The targeted population of second and third year HSM learners are variously located throughout South Africa, the South African Development Communities (SADC) region, and internationally. This

geographically wide spread of ODL learners enhanced external validity. However, control over sample selection is possible, and it is necessary to involve a large representative sample to enhance external validity (Brink & Wood 1998:291).

The findings of the second and third year HSM learners were generalised to all health service management learners in the Department of Health Studies at Unisa. Descriptive research allows for limited control over the research variables and the research setting. This study can therefore be generalised to a larger population. The findings were generalised to HSM learners in the Department of Health Studies at Unisa. The researcher knows that all students registered in an ODL institution are supposed to utilise on-line interactive tools to facilitate learning.

Different sites used in this study eliminated threats of Hawthorne's effect. The researcher attempted to overcome threats to external validity by utilising triangulation methods, where the results of one method would confirm, reject or contradict the findings of the other. Threats to external validity arise when experimenters draw incorrect inferences from the sample data to other persons' settings and past or future situation (Creswell 2009:229). Open-ended questions were included under some items to afford respondents the opportunity to provide additional information.

The external validity of a research can be threatened by the type of sampling method used because of the researcher's subjective nature of judgment in the selection of participants; although it must be emphasised that it is difficult to evaluate the precision of the researcher's judgment (Burns & Grove 2003:255).

To overcome threats to this study, the participants and the researcher established a very conducive type of rapport in order to put the participants at ease in a non-threatening environment. For instance, the purpose of the study was sufficiently explained, with no coercion to give any responses. The participants were assured that no allegations will be imposed on them for not utilising or under-utilising on-line interactive technologies at an ODL institution to facilitate learning.

The reactive effects referred to as Hawthorne's effect is where the study itself has a reflective effect on the process of testing to the extent that it may change the phenomenon being measured (for example attitudes, behaviour and feelings) (Bowling

2009:241). The effects on the study may present in the form of variables being affected by participants' awareness of their participation in the study (Polit & Beck 2008:755). The participants might give heavily prejudicial responses that suit their own views, thus leading to incongruent findings.

It is the researcher's considered view that Hawthorne's effect would not threaten this study, because the problem under investigation is of much importance to the educator, students themselves and to the researched ODL institution. There was no judgment of the respondents by the researcher during the data collection process.

4.6.2 Reliability

Reliability refers to the consistency, stability and repeatability of a data collection instrument (Wood & Ross-Kerr 2011:209). Sheppard (2004:242) indicates that validity and reliability are important criteria by which a questionnaire can be used as both a qualitative and quantitative instrument in order to evaluate its adequacy and quality. Use of multiple sources of data collection increased the potential for reliability. Furthermore, various methods and techniques were used to gather information in a single study for complementarity (Mouton 1996:156-157).

According to Creswell (2009:190), qualitative reliability indicates that the researched approach is consistent across different researchers and different people. An instrument's reliability is the consistency with which it measures the target attributes, the extent to that its measures reflect the true score, that is to the extent that measurement errors are absent from obtained scores (Polit & Beck 2008:452). Data was analysed and coded using Statistical Analysis System (SAS) version 39 in Social Sciences Cronbach alpha of 0.70 is accepted**.**

The researcher was familiar with the focus group setting, because that is where the HSM practicals are held on a yearly basis. A pilot study was conducted so that both the questionnaire and interview guide should be refined. Three phases of data collection were used. Various methods and techniques were used to gather information; these are myUnisa discussion forum, focus group interviews, and administration of on-line questionnaires. Rapport was built with the participants during focus group interviews.

All the afore-mentioned measures were employed to enhance consistency, stability and dependability of the measuring tool (Neuman 2006:189).

4.6.3 Trustworthiness

Trustworthiness relates to the use of multiple methods of data collection strategies, and data sources to get a more complete picture of what is being studies and to cross-check information (Gay, Mills & Airasian 2009:608). Thus in qualitative approach, the method of triangulation was used to establish trustworthiness of this study. Credibility, dependability, conformability and transferability are the principal features according to which understanding of the validity of qualitative research is established. These four principal features are discussed below.

According to Polit and Beck (2008:546), credibility addresses confidence in the truth of the data and is analogous to internal validity in quantitative studies. Credibility includes prolonged engagement, authority of the researcher and referential adequacy. The following, were done to maintain credibility:

- The research process was supervised continuously and discussed with the promoters.

- The statistician's services were used for verification of the questionnaire and giving direction to data analysis process.
- The researcher plans to keep the questionnaire for a minimum period of two years as evidence even after completion of the study.
- The researcher used a three-phased qualitative and quantitative data collection methods which were divided into three phases.
- The researcher included the respondents and participants from six (6) selected Unisa regional campuses where second and third year HSM students meet for contact sessions. The six (6) regional campuses were selected by the Department of Health Studies at Unisa.

Polit and Beck (2008:750, 751) refer to dependability as the stability of data over time and over conditions similar to reliability in quantitative studies and conformability was referred to as "the objectivity or neutrality of the data and its interpretations. On the

other hand, conformability is referred to as the degree to which the study context, the characteristics of participants, and the results are derived (Speziale & Carpenter 2007:49).

In this study, dependability and conformability were entrenched through the following measures:

- The researcher being supervised by three research experts, amongst whom there was an expert in on-line technology and ODL. Triangulation was used to ensure that the findings are dependable.
- The thesis was subjected to a thorough editorial process as a quality assurance measure (refer to Annexure J).
- The promoters reviewed the questionnaire prior to its administration to the participants.

According to Polit and Beck (2008:768), the extent to which qualitative findings can be transferred to other settings. Based on the context of this study, a purposeful sample of second and third year HSM learners' using on-line interactivity was used to ensure that the study results are transferable to other learners who are using on-line modes of interactivity in an open distance learning environment.

4.7 ETHICAL CONSIDERATIONS

Ethical considerations are principles of respect for persons, beneficence and justice, that are relevant to the conduct of research (Burns & Grove 2003:481). Ethical consideration was discussed into two spheres, namely; researcher-specific and respondent-specific considerations.

4.7.1 Researcher-specific ethical considerations

Researcher-specific ethical considerations relate mainly to those scientifically and professionally accepted behavioural norms and practices from the researcher in particular. In this study, the following researcher-specific ethical considerations and principles were observed:

- Submission of the research proposal for approval to the Research and Ethics Committee of the Department of Health Studies, Unisa in which the researcher is registered as a postgraduate student.
- Submission of a written request for permission from the Unisa to conduct a study involving learners, with specific reference to the Department of Health Studies' Chair (refer to Annexure B). This was done after the research proposal had been approved by the Higher Education Research and Ethics Committee (refer to Annexure A).
- An undertaking to adhere to UNISA's ethical requirements regarding research.
- Verbal request from the HSM Course Coordinator at Unisa to permit the researcher to attend practicals of HSM learners at selected research sites around the country, for purposes of data collection.
- Verbal request from the second and third year educators to permit the researcher to have on-line access to second year learners and access to third year learners of the modules not belonging to the researcher.
- Throughout, and at every stage of the investigation, avoiding plagiarism by providing complete bibliographic reference of the sources used, and complementing the references by presenting the researcher's own creativity and original work and ideas.

4.7.2 Respondent-specific ethical considerations

In accordance with this expectation, the following respondent-specific ethical considerations were adhered to:

- the researcher introduced herself, indicating and explaining in detail the nature, the purpose, and the importance of the respondents' participation in the study
- obtaining the informed consent form from the research participants (refer to Annexure D). There was no penalty for non-participation and withdrawal from participation
- assuring the participants that their involvement in the study is voluntarily and that failure to comply would not result in any form of penalty

- for purposes of transparency and openness, the participants were given freedom to contact the researcher through the Department of Health Studies for in case they wished to find out about the progress of the research
- adherence to Unisa policy regarding utilisation of learners' on-line information with specific reference to myUnisa discussion forum data collection
- strict adherence to the respondents' confidentiality and anonymity by not requiring their identity on the questionnaires, or disclosing both their identity and the contents of the questionnaire to unauthorised persons; during on-line data collection for anonymity purposes, the learner's number and name were not required
- acknowledging consulted sources and persons who contributed to the study
- refraining from prejudicial conduct that may influence the respondents to be biased in a manner that supports the researcher's own personal views, or in support of a pre-determined hypothesis.

4.8 CONCLUSION

A mixed (explorative and descriptive) research method was employed to explore the learners' on-line interaction in an ODL institution with other learners, their educators, study materials, and their ODL institution. The same approach was utilised to describe the usage of on-line interactive tools in the enhancement of interaction in teaching and learning. Focus group interviews, myUnisa discussion forum, and a pre-tested on-line questionnaire were used as part of a triangulated approach to the gathering of relevant information. The sample consisted of second and third year HSM learners at an ODL institution who do interacting on-line. This sample met the research objectives. Data was analysed descriptively and statistically, and measures of validity, reliability and trustworthiness were applied. The researcher employed various measures to enhance data quality and to ensure that ethical principles were complied with.

In chapter 5 of this study, the procedures for data analysis and the research findings are described and discussed.

CHAPTER 5

DATA ANALYSIS AND PRESENTATION

5.1 INTRODUCTION

This chapter presented the data analysed from the three phases of triangulated data collection. The data analysis is discussed according to the sequence of the study objectives and indicated data collection processes.

5.2 RESULTS AND INTERPRETATION

The results of phase 1 (myUnisa discussion forum) and phase 2 (focus group interviews) were analysed qualitatively. In phase 3 (online questionnaire), the results were presented by using bar and pie diagrams and tables. Statistical Analysis Systems (SAS), version 39 was also utilised to quantify and interpret data.

5.2.1 Phase 1: myUnisa discussion forum

Of the 614 second year, first semester HMS learners, only 23 learners participated in the discussion forum; and of 765 third year learners, only 30 learners participated in the discussion forum. A total of 53 learners thus participated in the empirical aspects of this study. The findings are therefore based on those who participated in the interaction of the discussion forum. The codes were allocated to the participants. The codes were, (T) for third year learners and (S) for second year learners followed by a number. This was done in order to assist the researcher in identifying the recurring themes for data analysis purposes.

The aim of myUnisa discussion forum was to determine the nature/type and trends and patterns of interaction between the learners and educators. What emerged from the analysis was academic and administrative type of on-line interaction from the learners. These were addressed to the learners themselves, educators and the university.

It was noted that from the emerging themes some challenges and benefits of on-line interaction were revealed. The ensuing discussions addressed the consolidated emergent themes of both second and third year levels HMS learners with the view to studying the trends, frequency of on-line interactions, and benefits and challenges which emerged from these themes. It was ensured that themes addressing the same issue were not repeated. The results of the main emergent themes are also presented and supplemented with quotations. Some of the quotations were modified by the researcher so that the reader would understand the meaning of the information derived from the participants.

Themes which emerged from both levels of learners were assignments, study material, social networks being myUnisa discussion forum, podcast, video conference and Black Berry Messenger (BBM), study groups, registration and examination (refer to Annexure I for proof of myUnisa discussion forum interactions).

5.2.1.1 Assignments

- **Clarification of assignment questions and length**

The following depicted students who completed assignments, but uncertainty over the required length caused them to ask peers for assistance:

> **T1,** *"I've done an assignment, but would like to know how many pages the assignment is supposed to be before I submit it?"*
>
> **T2,** Others wrote: *"Sanibonani [Hello] fellow students, I just got stuck a bit with question 23, assignment 3, my best option would be 5 (a, c, d) but I have a problem with d [i.e.] the budget variance report."*
>
> **T3,** *"Please guys I need help with assignment 2, I don't understand the formulation of policy statement for each of the categories. Anyone, please help."*

T4, *"Hi fellow students, I'm having problems with assignment 2. I am unable to get the characteristics of change in the health care institution. I am using two books which offer contradictory information."*

The above quotations illustrated that students have a challenge of answering an assignment question.

Other students assist their peers by clarifying questions:

T5, *"Be careful, it is not about using the big terms, but understanding the core context and making a difference in our already limping health services. Happy studies. I am glad to hear that I made a difference in your studies."*

T6, *"Hi everybody, assignment 2 is really not difficult!!. On page 582 in Booyens 1998 the categories are listed under "greater accountability". They are marked with a circle."*

"Integrate the information in the prescribed literature. You may however, decide to add other information in the prescribed literature."

- **Delay in submission of assignment**

A student complained about a delay in submission of assignments:

S1, *"I'm* frustrated. M*y study material has not arrived and my assignment submission will be late."*

The above is a clear indication that the late delivery of study materials does impact adversely on the early submission of assignments.

Some students raised concerns about errors picked up in an assignment:

> **S2,** "*The unique numbers of assignments in the tutorial letter does not correspond with the one on myUnisa, are we going to be penalised for submitting our assignment 1 with unique number 729884?"*

In this discussion the educator stepped in and apologised by means of the discussion forum:

> "*The correct unique number for assignment 1 is 729885 as it appears on myUnisa. Our apology for the typing error in the tutorial letter. Best wishes with your studies."*

- **Error in marking of assignments**

Some students raised issues about wrongly marked assignments:

> **S3,** *"I don't know if there is someone with the same problem as mine. It seems that my wrongly marked answers are not the same as those indicated on my answer sheet. I always double check my answers and I would understand if it was one mistake and not all of them, how can this be rectified? I can scan my assignment to show my answers as indicated on the question because it's all undoubtedly clear.*"

> **S4,** *"Please note that there seems to be a problem with the marking of assignment 1. Please review and keep us informed."*

The findings indicated that this problem was directed to the educator. Furthermore, the students were worried about the feedback on whether or not an assignment has been received. However, it appears that there was no response.

In addition to assignment marked inaccurately, students found that they were asked to submit assignment even after they have submitted:

S5, *"I have submitted my HMA 2602 on the 15.03.2012, but today when I was checking my assignments it is written "resubmit", I'm so confused whether to submit again or not."*

Another learner clarified thus:

S6, "*Never mind the "resubmit" word. It offers you an opportunity to resubmit if a mistake occurred till the deadline date. It is just fine like that with the letter resubmit".*

The following statement illustrates that learners support and reassure each other and one another:

S7, "*Anyone willing to discuss assignment 2, please contact me. Contact details given. Wishing you the best."*

Comparison of assignment 3 question was requested by a learner:

S8, "I *am done with assignment 3. Anyone wants to compare answers?"*

A learner could not open the multiple choice link:

S9, *"Hi! I cannot open the links with multiple choice questions feedback sent by Unisa. This is frustrating!!!"*

It appeared that the learner above is doing a follow-up about assignment or the learner wanted to compare answers of the feedback which was received.

The following learner indicated that feedback of assignment 3 is not yet received, which is a concern as examination and revision time was approaching:

S10, *"Is there any feedback on assignment 3 and what the correct answers are? Also, I still have no marks for assignment 2 and I have not*

received my assignment back yet. I want to revise these before examinations."

The above requests did not receive any responses from anyone.

The discussion of the findings meant that learners are really frustrated by the challenges they encounter with regard to assignments. As indicated, most of the challenges needed the educator's intervention, which was just minimal. Learners have assisted each other in the resolution of their challenges. It is of high importance that educators should also interact actively and respond to learners' queries.

5.2.1.2 Study materials

The majority of students who participated in the discussion complained about the delay in receiving study materials after registration:

S11, "I *haven't* received *my study material as yet…I'm so frustrated". "Dear educator, I did not receive study material for the 1st semester."*

A fellow student advised that the best thing to do was to register early and download study material from myUnisa:

S12, "*I registered in November and received all my materials in December. Go to "official study materials" and download the study guide and educatorial letters instead of waiting and you can start with your assignment."*

Learners also raised concerns with ordering books:

T7, *"I ordered the books from kalahari.com It took 5 days [for the order] to be delivered. Can anyone help me with the concepts of a business plan?"*

A fellow student responded:

T8, *"Try the Amazon website [sic]. They are a lot cheaper."*

Another student wrote:

> "*The book I bought is Jooste 2009. Is it the same as the 2003 edition? They didn't have the 2003 edition."*

The lecturers responded:

> **T9,** *"Yes, Jooste 2009, 2nd edition is the prescribed book. Use it in conjunction with the study guide, other recommended books and journal articles."*

One learner showed her generosity by indicating that she was selling the prescribed book:

> **T10,** *"Prescribed book for HMA 3703 for sale. Contact details given."*

Many of the challenges students encountered had to do with availability of prescribed books and study materials.

5.2.1.3 Video conferencing

Students were reminded of attending the video conference by the educator. One learner appreciated the reminder by thanking the educator:

> **S13,** "*Dear Ms ???? thanks a lot for yesterday's video conference sessions, they were very helpful. I feel confident and ready for the forthcoming exam."*

There were learners who could not attend the video conference due to time and distance constraints. To highlight this problem, a learner posted to the educator:

> **S14,** *"Prof … is there any possibility that you can attach issues that were discussed on the video conference here on myUnisa because some of us never got the chance to attend as the East London Center [sic] which is*

200 km away had a problem and it was even more difficult to get to Port Elizabeth."

5.2.1.4 Study groups

A learner advised colleagues to study in groups. In response to that, a peer enquired about study groups in the Kempton Park area and the other one in the Pietermaritzburg area:

T11, *"Hello fellow students I'm looking for a study partner around Midrand, Kempton Park, call or SMS …."*

T12, *"Hi fellows, if there is anyone staying in Pietermaritzburg and interested to join study group please contact me at …."*

Study partners were also sought around Johannesburg and Harare by learners. Contact details were provided by those learners. This indicated that students need support from other students during studies to bridge the gap posed by distance. Students also invited each other to join Black Berry Messenger (BBM). Responses were poor in the latter regard. The implications of the non-responses might mean that either students are less interested in forming on-line study groups, or they prefer the formation of face-to-face study groups. Learners have different learning styles. Some learners are not in favour of studying in groups. Irrespective of the individual learning idiosyncrasies, it is appropriate that students should respond to their peers.

5.2.1.5 Podcast uploads

Podcast uploads have been made available as part of the learners' on-line interaction. Findings revealed that through interaction in the discussion forum, learners requested the educator to re-upload podcasts because of inaccessibility of the loaded one:

T13, *"Dear … the uploaded podcast is not working."*

The educator responded in March to a challenge of accessing the podcast which was presented in February by the learners. Guidance was given on how to download the

podcast. In spite of the podcast upload guidance, it clearly shows a delay from the educators' side of responding to the query.

5.2.1.6 Best wishes

Just before the May-June examinations, educators wished learners well as a matter of 'academic convention and etiquette'. Reassurance was given and basic guidelines and suggestions' were provided in preparation for examinations. A learner also wished peers well during the forthcoming examination.

5.2.1.7 Examinations

Characteristic of pre-examination preparations in some cases, one learner wrote:

> **T14,** *"I am completing my preparation for the examination and would like clarification regarding the reference in Booyens. I have the 2008 [edition of] Introduction to health care management. What chapter should I concentrate on? Chapter 6 has nothing to do with financial management."*

The researcher's interpretation of the above statement is that it appeared to be late advice or an afterthought because it was already examination time. The learner advised peers on how to approach the assignment based on mainly understanding the core concepts.

Guidance was still given by the educator regarding examination while the examination was still on. The findings show that the educator reassured the learners that examination marking is almost complete and feedback was given.

The learner was interested to know more about content which came out during examination with the aim of utilising the information in future.

5.2.1.8 Trends in on-line discussion

In March 2012 learners' on-line interaction focused on on-line registration on study material, assignments, social networks being video conferencing and podcast, study groups and best wishes.

A common trend in this regard relates to learners registering for a course of study but did not receive their study material on time. This unsavoury state of affairs posed a worry to them as the assignment due dates were approaching and they were apprehensive of the consequences of late submission. Focus was also on assignments, in the event of an assignment being misunderstood and clarification sought by learners in time for exam preparations.

Queries were posed on the delay of receiving marks, other learner's queried marks allocated by the educator. Learners showed an interest in social networks, podcasts, and video conferences. An indication was given that video conferencing should be posted on the discussion forum to accommodate all learners and those who could not attend. However this was not made available to learners. Study groups were created immediately at the beginning of the semester, thus showing that learners were really interested to share during their studies.

In April, the trend of the learners' interaction changed. The focus of the interaction was on study groups examination and discussion of previous examination question papers. Learner support and invitations to join BlackBerry Messenger were requested. This indicated that learners were earnestly beginning to prepare for their examinations.

In May, learners' concerns were premised on the difficulty experienced in opening the link to multiple choice questions and feedback of the last written assignment. The above is an indication that learners are seriously preparing for examination and want to receive assignment feedback for revision purpose.

In June, there was minimal interaction, because the examinations had begun. Only one learner interacted, for the purpose of knowing more about the content of the examination, but the required information was for future use. The educators reassured learners that feedback will be forwarded to them.

5.2.1.9 Benefits of discussion forum

By interacting on-line, learners clarified issues which were unclear during their pre-examination studies. Other learners asked for volunteers to discuss the assignment and left their contact details. Awareness of the formation of study groups in the area benefitted the learners. There were contact details of the learners who needed discussions and comparison of assignments.

Learners also assisted each other with referrals to alternatives where books and study materials could be bought at cheaper prices, for instance, from other learners and from other bookshop. Invitation for joining BBM as another way of social interaction was done for easy interaction. Learners also benefited from educators' reminders about video conferencing.

Since Unisa is an Open Distance Learning institution, discussion forum interaction created a platform for the learners to discuss their academic and technical challenges, such as clarification of assignment question and their inability to download MCQ from myUnisa. Information on how to download podcasts benefitted the learners by hearing the educators' voice on the provision of content.

Reciprocally, the educators benefitted in that they were afforded the opportunity and means to communicate by podcasts with their learners; reminding them about such important academic matters as assignments and video conferences, wishing them well during the forthcoming examinations and giving examination guidelines.

5.2.1.10 Challenges of the discussion forum

The interactions from the discussion forum revealed that there were more challenges than benefits. Some challenges were academic, and some were administrative in nature. Educators were allegedly not responding to some of the learners' queries. Learners encountered problems downloading information from the podcast because of inaccessibility of the loaded one.

Educators had a tendency of responding to students' queries late. For example, an assignment was marked wrongly in April, but the educator responded only in May. Although an indication was made that the query would be attended to, there were delays in response and this affected the learning experience and progress of the concerned learners. Even learners themselves are not responding to their peers' concerns.

Administrative issues relate to issues such as delays in receiving ordered books from the Kalahari Website and study materials from the university. Technical issues related to the difficulty of connecting to video conferences and the downloading of multiple choice questions from myUnisa. Students' aim of downloading MCQ's from myUnisa was to revise in preparation for examinations and to get feedback.

5.2.2 Phase 2: Focus group interview

Phase 2 of the data presentation discussed the extent of observations with regard to focus group interviews as a mechanism of data collection. There were six (6) focus groups which were derived from the six (6) settings. There were a total of fifty-four (54) participants in the six (6) focus groups. Participants were asked to describe on-line interactivity and Open Distance Learning (ODL). They were further asked about the comfortability and the benefits of on-line interactivity. Interview guide was used (refer to Annexure E). Data analysis began simultaneously with data collection. The results presented below started with the demographic information, which was intended to give a background of the characteristics of the participants. Analysis was done during the transcriptions of focus group interviews.

5.2.2.1 Section A: Demographic information

Table 5.1: Demographic data (N=54)

Demographic data	Classification	Frequency	Percentage
Gender	Male	5	2.7
	Female	49	26.5
Age	21-29	8	4.3
	30-39	0	0.0
	40-49	0	0.0
	Over 50	8	4.3
Marital status	Married	35	18.9
	Single	17	9.1
	Widowed	1	0.5
	Other	1	0.5
Race	Black	39	21.1
	White	8	4.3
	Coloured	5	2.7
	Indian	1	0.5
Residential area	Urban	38	20.5
	Semi Urban	12	6.5
	Rural	5	2.7
Home language	Vernacular	26	14.0
	English	4	2.1
	Afrikaans	11	5.9
	Other	10	5.4
Country of birth	South Africa	23	12.4
	Africa	2	1.1
	Other	16	8.6
Country of registration of HSM	South Africa	44	23.8
	Africa	4	2.1
	Other	10	5.4
SA province of registration	Gauteng	5	2.7
	Limpopo	9	4.9
	Mpumalanga	0	0
	Free State	5	2.7
	KwaZulu-Natal	5	2.7
	Eastern Cape	10	5.4
	Northern Cape	1	0.5
	Western Cape	6	3.2
	North West	1	0.5
TOTAL		**54**	**100.0**

Giorgi's phenomenological approach was used to analyse the transcriptions of focus groups. This approach was chosen because it matches the objectives of this study and will assist the researcher in accurately organising and managing narrative data by looking at its common patterns. The steps of Giorgi's analysis are indicated below (Polit & Beck 2008:532; Morrissey & Higgs 2006:165-169) and the application is indicated in table 5.2.

Step 1: This step was achieved by reading the entire description of the perceptions to get a sense of the whole. Addressing this task involved listening to the interview tapes, transcribing these tapes and reading all the transcripts. The reading of transcripts was followed by developing an understanding of the whole of each interview by reading and reflecting on each one. During this step, the researcher considered bracketing. Bracketing is phenomenological reduction, the process of identifying and holding in abeyance any preconceived beliefs and opinions about the phenomenon under investigation by the researcher (Polit & Beck 2008:748). No pre-conceived ideas of the researcher were applied to distort what the participants were saying.

Step 2: This step was achieved by the collection of participants' descriptions of the phenomenon and the meanings they attached to the phenomenon. Following was the reading of each successive transcript repeatedly and thoroughly, breaking it down into distinct meaning units which consisted of words, phrases, sentences or passages until that deep immersion in the texts had been achieved.

Step 3: Reading and analysis of all the participant descriptions of the phenomenon was done. Each transcript was examined for potential themes and meaningful units to understand the nature of the participants' experiences; looking for the essence of these experiences was considered. Furthermore, the identification of significant statements or quotes to illustrate these themes and link these statements/quotes to concepts was done. The participants' central themes with similar meaningful units were determined.

Step 4: This step entailed the transcription of the participants' words into scientific language. The researcher described the individual themes derived from the participants' responses. Meanings were clarified and elaborated by relating constituents to each other and to the whole. This phase involved reducing the number of different highlighted portions by allocating them to themes or units of meaning.

Meaning units and themes became linked, related, or sometimes separate entities. Themes were compared among transcripts. The themes were written on flip charts to allow for visual sorting of, and reflection on, the themes and the manner in which they fitted together or collapsed into each other.

Step 5: The transformed units of meanings of units were synthesized and analysed into an overall description of the phenomenon. Commonalities of different responses from the participants were identified, grouped together and compared. Common themes from written narratives of different provinces were also identified, grouped together, and compared by analysing different perspectives of the central issues (Patton 1990:376).

This final description of the transformed units of meanings gave structure to the data to accurately communicate the challenges and benefits of online interactivity of HSM learners in an ODL institution.

The similarities of the participants' response to on-line learning in an ODL institution, and prospects and challenges of interactivity were transcribed and categorised from each researched Unisa regional campus. Thereafter, the similarities of the participants' response of the six researched Unisa regional campuses were grouped in order to obtain the final results. The results of the main themes which emerged are also presented and supplemented with verbatim quotations. In step 1 the quotations from the participants during interview were reflected and in step 2 the researcher gave the interpretation of what the participants' were meaning in step 1 so that the reader would understand the information derived from the participants (refer to table 5.2 for transcription and analysis).

Table 5.2: Transcription and analysis

Step 1 :Interview transcriptions	Step 2: Interpretation of participants' meaning	Step 3: Subthemes
1. How can you describe on-line interactivity? BLM P1: (Smiling) errr I describe on-line interactivity as a way of communication *in which we use Internet as the main means of communication*	With a smile she described it as communication using Internet	• communication using Internet
P2: yes *communication can be between the student and the educators or the communication between the students and other students*. (talking softly)	This participant added that it is communication between the student and educators/and student to student/with a soft voice	• communication between the student and educators. • communication between student and student
P1: and between *students and their study material as* well	… in addition the participant added communication between the student and the study material	• communication between the student and the study material
EL P 8: What I think interactivity is, it *is the communication that I have with my peers, with my study material, with my educators or educators* on *Internet via and even via myUnisa*	She indicated communication with peers/study material/and educators/using Internet/emails/ and myUnisa	• communication with peers • communication with study material, • communication with and educators/ • communication using Internet**,** emails, myUnisa
DBN P1: it's through the use of eh *the computer (uhm) and the Internet to communicate with the university and communicate with other students* because I'm an international student, I'm from the United Arab Emirates so my only lines of communication is through myUnisa with my educators and with my colleagues, that's the only way I … I can get to know them is through the forum (uhm) *communication in the forum (uhm)* sometimes because of distance, the study materials take a long time to arrive so it's very easy for me just to download them and start with my assignments and whatever I	The participant is an international student from United Arab Emirates/she started by saying eh … indicating that she is thinking of answers/utilisation of the computer/Internet/to communicate with the university/ colleagues/and educators using myUnisa/knowing colleagues and lectures through the discussion forum/and downloading study material/and starting on time with assignments.	• an international student from United Arab Emirates • to communicate with the university, colleagues, educators using myUnisa • knowing colleagues and lectures through the discussion forum • downloading study materials • starting on time with assignments.

Step 1 :Interview transcriptions	Step 2: Interpretation of participants' meaning	Step 3: Subthemes
have to start with.		
CT P1: uhm from what I understand, its errr, it's when you go *on-line to interact with anything that has to do with your studies at Unisa*, it can either be *to go and check your, errr, financial, your uhhh information, your registration uhm and just to see, maybe go and if your assignment has been received, to issue assignments and to see what other students are up to in the discussion forums.*	To her understanding of on-line interactivity, she has mentioned, and elaborated on the benefits instead/on-line interaction dealing with studies/checking finance/for registration/check assignments if they have been received by the university/to submit assignments/and to check what her peers are discussing in the discussion forum.	• on-line interaction dealing with studies • checking finance • for registration • check assignments if they have been received by the university • to submit assignments
P2: (Closing eyes) In addition to what she said, you can also *communicate with the educators,* let's say if you have err, if *you need uhm clarification* and you can't reach the varsity then you can also err *communicate through emails.*	The participant (with eyes closed) described on-line interactivity as/ communication with educator for clarification purposes/through emails/since she cannot reach the university	• communication with educator for clarification purposes • communication with educators through emails
2. How can you describe ODL? BLM P3: I can describe *it as a method of learning whereby you do work in your own* time but targeting the deadlines that are given and *having the material that you would have to use* to *complete the assignment without a educator standing on front of you*, pushing yourself to the things you need to submit on time.	She described it as pushing herself to submit the things she needs to submit/due to distance/doing work on time/enable her to target deadlines/no educator in front of you/ability to have materials to finalise assignment.	• Student pushing herself • to submit work on time targeting deadline • no educator in front of you
P2: targeting the deadline as well that *are stipulated in your study material* (talking softly).	One participant added with a soft voice on the issue of targeting deadline stipulated in the study material	• targeting deadlines
P4: yes I was going to say, doing your *study at your own pace,* and then with the *communication of other students and the educators.*	She indicated that she can communicate with her peers, and educator at a distance/and can study at her own pace	• communicate with her peers, and educator at a distance • study at own pace
P5: (Using hands) to *clarify where you don't understand.*	She responded using hands, about learners clarification/her response was not what the researcher has asked	• clarification of misunderstanding
P4: *discuss b*ecause during that errr on-line *communication we*	She is able to overcome the challenges students meet during	• overcome study challenges

Step 1 :Interview transcriptions	Step 2: Interpretation of participants' meaning	Step 3: Subthemes
are able to discuss with other students the challenges that we meet while we are doing our studies.	their studies/which is on-line discussion with peers	• through on-line communication with peers
EL P6: Open distance learning to my understanding, *is that you are learning or you are not actively attending the university for educators* but, you also *have access to all the facilities and resources that are available although you are not physically at the university.*	She understood it as having access to university facilities even if she is not actively there/ she is learning/irrespective of not being in contact with the educators	• access to university facilities from a distance • learning not in contact with the educator
CT P3: (Closing eyes) maybe is a *type of learning that allows you to, an opportunity, to study through a distance, away from a normal classroom environment*, err, in *your own pace*, errh but keeping in mind that *you have to keep the submission dates of the assignments.*	She responded with closed eyes as if she was shy to answer/ODL is learning away from the class-room/at own pace and keeping the submission dates of assignment in mind	• learning away from the class-room • learning at own pace • keeping the submission dates of assignments in mind
P4: Well it gives y*ou an opportunity to study on your own, at your own pace,* and uhm for me *it's very convenient because fulltime employment*, I don't have study leave so it suits me.	This participant also said she is fully employed/and can study at her own pace/thus she likes its convenience	• fully employed • study at her own pace • convenient
3. Do you feel comfortable to interact on-line? BLM P6: *sometimes, myself I normally doubt if the information I'm given, especially when I'm chatting with the colleagues, whether it's secure or there are other people who can hack in the information.*	She does not feel comfortable as she is concerned that her information can be hacked by other people/she feels insecure when she is chatting on-line with other people/she is not sure if her information is safe	• does not feel comfortable to interact on-line • afraid that her information can be hacked by other people • feels insecure • when chatting on-line with other people
P4: as for myself, I *feel comfortable because nobody knows my password*, I'm the only one who knows, and *I'm able to open at my own time* so I'm, I feel *comfortable and secured.*	Following what the previous participant has said, this participant does not have fear of security/she feels safe and comfortable/as no one knows her password/and can open on-line interactive tools at her own time	• feels comfortable to interact on-line • feels secured • no one knows her pass word • open on-line interactive tools at own time

Step 1 :Interview transcriptions	**Step 2: Interpretation of participants' meaning**	**Step 3: Subthemes**
P7: I feel comfortable especially when *I'm submitting my assignments because it saves time for going for travelling to the post,* even *financially it saves time and money.*	She indicated her comfort because it saves time, there is no need to go to the post office/and saves money when she is submitting assignments on-line	• feels comfortable to interact on-line • saves time there is no need to go to the post office • saves money when submitting assignments on-line
3.1 Do you feel comfortable using the discussion forums? BLM P2: *I haven't, I haven't*	She responded by saying "I haven't I haven't"./She strongly emphasised that she does not use the discussion forum	• Haven't used the discussion forum
P1: rarely	She uses the discussion forum/ but not always, rarely	• Rarely uses the discussion forum
P3: *sometimes we use but the people do not respond they only respond to others but you find they are not responding to you and I think another thing that makes it a bit hard for us to go on the forums, we just call our colleagues, colleague I have a problem here, there's challenge and then you end up getting a response. If someone writes about that problem again you are like ok mine is solved, and then you ignore and then you go on, so most of the time we communicate on our phones. Ok Ntshupi I've got this challenge, can you assist with this and this and then you don't go to the forum because you have already overcome that challenge, you asked your colleague.*	This participant indicated that sometimes she uses it/but the thing there is no response/they then resort to calling each other/ "okay Ntshupi I've got this challenge can you help me"? knowing that their problems will be solved/so when that problem is on the discussion forum they ignore it knowing that they are sorted/that is why this participant indicated that she sometimes uses it and sometimes not/The problem of no response from the discussion forum is really a challenge to this participant	• Sometimes use the discussion forum • No response from the discussion forum • Learners call each other for any study challenges • Ignores problems on the discussion forum
P3: Ya we *communicate maybe on face book, I know one good friend of mine likes to write those things on Facebook and say ok hey did you see this and this and this, and then I'm like ok let me solve, we don't go to the forum we communicated on other networks.*	The participant indicated that they use a face book preferably more than the discussion forum/ or even other networks	• Uses Facebook preferably • More than the discussion forum and other networks

Step 1 :Interview transcriptions	Step 2: Interpretation of participants' meaning	Step 3: Subthemes
6. Are you benefitting from this on-line interactivity at Unisa? BLM P2: (Using hands) it's because *you are given a feedback right after submitting the assignment. Y*ou are told that the assignment is, has been sent successfully, unlike when you are using post err, postal addresses because you are not going to get feedback right after sending the assignment.(talking with a hard voice).	Emphasising by using hands unlike submitting assignments by post/through on-line submission feedback is given indicating that on-line postage was successful/ feedback is immediate	• On-line assignment submission • Immediate feedback • Compared to postal postage
P4: yes I was going to assay again it is cheap, it's very cheap because we are not going to travel, the money to the post and then to pay the postal charges so we just go to the Internet.	The other participants acknowledged by saying yes/it's cheaper/no need to go to travel to the postal office considering also postal charges/she just use the Internet	• On-line assignment submission is cheaper • No need to go to the post office • Just uses Internet

STEP 4: Commonalities of subthemes	
Subthemes	**Participants' commonalities**
• communicate with almost everyone since the world is virtual.	PTA:P1
• interaction between the individuals • learns more through online interaction	PTA:P2 POL:P1 PTA:P8, P4
• communication with educators	POL:P1
• communication with colleagues via group discussion • enhance online communication to students who stays at rural areas	POL:P2 PTA:P3 POL:P2
• communication online bridges the distance • students makes friend online • social networks • Facebooks • WhatsApp • Internet	POL:P2 POL:P4 PTA:P2 PTA:P2 PTA:P2 PTA:P2

STEP 4: Commonalities of subthemes	
Subthemes	**Participants' commonalities**
• myUnisa	PTA:P2
• Communication on the discussion forum. • Failing to attend group discussion • by interacting through the discussion forum • asking other students about what was discussed during group discussion • put wrong information on the discussion forum • information which should be addressed to a specific person through the email • added that getting into the wrong forum lead to no response to one's concern	PTA P2, P3 POL:P1, P4 POL:P4 POL:P4 POL:P4 PTA:P3 PTA:P3 PTA:P5
• myUnisa • joined myUnisa because of curiosity and the love of technology • not staying in her home place but when she goes home she access myUnisa • myUnisa book tells how to log on and setting everything	PTA: P1, P2, P4,P5,P6,P7,P8,P9,P10,P11,P12,P13 POL:P4 POL:P4 PTA:P5
• with Internet facilities and computers • connect to the internet • internet to be extended to rural area	POL:P2 POL:P5 POL:P2
• online interactive tools	PTA:P2
• share emails and telephone numbers • preferred telephone	POL:P4 PTA:P4
• Recording and posting by the educator on what was discussed during video conference to the students	PTA: P1, P2, P4,P5,P6,P7,P8,P9,P10,P11,P12,P13
• Through emails	P5

STEP 4: Commonalities of subthemes	
Subthemes	**Participants' commonalities**
• email assist like when the educators want to say something to the students urgently where letters and telephones can take time	P2
• Resort to emails knowing that they will be answered	PTA:P4
• with emails not sure of the availability of educators	PTA:P4
• they cannot rely on SMS and email to communicate	PTA:P5
• comparing emails and telephones	PTA:P2
• students are far from the institution of learning.	POL:P2

STEP 5: FOCUS GROUP ANALYSIS: POL, PTA, BLM, EL, DBN, CT	
THEMES	**PARTICIPANTS**
Educators support	**PTA**: P1,P2,P3,P4,P5,P6,P7,P8,P9, P10, P11, P12,P13 **POL:** P1,P2,P3,P4,P5,P6,P7,P8,P9 **BLM:** P1, P2,P3, P4 P5,P7,P8 **DBN:** P1,P2,P3,P4,P5 **CT:** P2, P6
Motivation to use on-line interactive tools	**POL:**P1,P2,P3,P4,P5,P6,P7,P8,P9 **PTA:**P2,P3,P4,P5,P7,P8,P11,P12 **BLM:**P1,P2,P3,P4,P5,P6,P7,P8,P9 **EL:**P1,P4,P6,P9,P10
Interaction with peers	**PTA:**P1,P2,P3,P4,P5,P6,P7, P8,P9, P10,P11,P12P13 **POL:**P1,P2,P4 **BLM:**P1,P2 **EL:**P8 **DBN:**P1
University system delays	**DBN:**P2,P5 **EL:**P1,P2,P3,P4,P5,P6,P9,P10
Problems of on-line interactivity	**POL:**P1,P3,P6 **BLM:**P1,P2,P3,P4,P5,P6,P8,P9 **EL:**P1,P2,P3**,**P4,P6,P9P10 **DBN:**P1,P2,P4,P5 **CT:**P1,P2,P3,P4,P6

STEP 5: FOCUS GROUP ANALYSIS: POL, PTA, BLM, EL, DBN, CT	
THEMES	**PARTICIPANTS**
Educators' unavailability	**PTA**:P1,P2,P3,P4,P5,P6,P7,P8,P9,P10,P11,P12,P13 **POL:**P1 **PTA:**P2,P5 **BLM:**P4 **DBN:**P1,P7

5.2.2.2 The support needed by the learners

The findings indicated that learners have problems institutionally, academically, and administratively. Verbatim quotations have indicated learners' challenges and the support they needed. The researcher further discussed the extent of support provided or not provided by Unisa.

- **Administrative and institutional support**

This is needed to address computer literacy, the shortage and dysfunctionality of computers, late submission of results and study materials, escalating costs, and lack of Internet connectivity in many instances. The entire above are attested to by the following statements from the learners:

The findings revealed that on-line registration at home is slow and unreliable, leading to delays in receiving study material.

> "When you *register from home, the process is slower than when you register at the university. We registered on the same day with a fellow learner, but her books were received almost two weeks later on-line."*

> "*They actually inform you to make a phone call if nothing has happened after registration in two weeks, with the message:." If you haven't had a confirmation of registration [in two weeks], please phone Unisa at this number."*

"I normally phone my other colleagues, maybe I'm struggling to the results, how to get into the place where I can get my examination results, because I normally phone my fellow colleagues and study mates."

"Another thing ma'am, I think with the results issue – they should release the results one by one as soon as they are available to avoid disappointments like last semester."

Late release of results disappoints the learners and puts them in a predicament whether or not to register for the following semester. Even if the results are late registering at home on-line is frustrating. Unisa should give learners support with regard to that.

An indication was also made that computer classes should be organised as some of the learners are not computer literate. Some centres have small computer labs which do not accommodate all learners. In East London, for instance, the computers are at times not in functioning order. These findings are supported by the following statements from the participants:

"… I just think as for computer literacy, we just have to ask Unisa to organise computer classes for students who are starting the programme."

"[*Folding hands] I think they need to open another lab and extend the one they have at least at the moment … they should add another 3 even if it's 5 and they should be in a workable condition like we said that sometimes they are not working."*

Lack of Internet connectivity in other areas, inconsistent network availability and incompetent technicians at some centres cause a lot of inconvenience, especially during video conferences. These findings further indicate that learners consistently need support:

"I was saying also if there's an IT consultant, someone we could email or call direct if we have a problem, because sometimes you write, nobody's answering you and if you know that the one answering is an IT specialist,

you can consult this one faster because I think it will be better and faster to solve the problem."

Some of the findings indicated that learners needed Unisa to subsidise data bundles or airtime in order to encourage and enable them accessibility to interact on-line. Extension of Internet to rural areas will be appreciated so that rurally-based learners can develop interest to use on-line interactive tools.

"*On-line interactive tools are a good thing for such a big number of students and for such a big institution; maybe if they can subsidise you whenever you get into myUnisa with some airtime because learners who are studying through Unisa are not financially strong, if they do not have Internet airtime then they can't communicate."*

The idea of the extension of Internet connectivity in rural areas and buying of data bundles and airtime was further motivated thus:

"There are some [lectures], I don't know whether they are video conferences or not, which are usually held at the [main] Unisa campus and other campuses around South Africa. [raising his voice in animation] If maybe … *students outside South Africa … maybe when those sessions are being conducted* … wherever you are *you can be able to access them [lectures] from your computer on-line."*

"… in Lesotho, people don't have Internet at all [talking louder] and they have to travel to Bloemfontein to register … just to give you an example of that."

Whereas the idea of the university subsidising students' data bundles, a variant of the same notion was proposed thus:

"Not exactly buying data bundles, but credit those students when they apply, those students who are coming, as long as they have registered for that year; the minute you register you know that in the package it [data bundles] is added."

Further findings indicated that computer literacy should be a requirement when registering with Unisa. It could be that the age factor has an impact on computer illiteracy. It was proposed that Unisa ought to send learners who are not computer literate for short courses, or compel them to study basic computer basic skills and to work with on-line interactive tools:

> *"… just to get somebody who knows how to log onto the computer and show you if you want to get, for an example, myUnisa and if you want to register. I know we've got guides, but sometimes when you are with a good somebody who can show you practically, you do save time."*

Issues such as accessing the prescribed reading materials from myUnisa and the delays in on-line registrations frustrate the learners. Learners' needed intensive administratively support:

> *"The processes that can be done on myUnisa [should be simplified, such as] "to register click here, to go to the discussion forum click here". The exact actions that you need to take to for specific purposes should be step-by-step, especially to those learners who are using the computer or accessing the Internet for the first time."*

In order for the learners to register on-line, intensive orientation of myUnisa by information communication technologists need to be embarked on. Learners should be encouraged to support each other. Guidance should appear on the tutorial letters, indicating the utilisation of myUnisa by the educators.

- **Cognitive and academic support**

Educators not responding to emails and discussion forum, no feedback from the educators during on-line interaction, unavailability of the educator with no notification, tutorial letter 101 which is not detailed enough, video conferences which are connected only to students in South Africa and which does not accommodate learners who did not manage to attend and educators to be active on-line and give students work to do.

As already indicated, learners need support with regard to addressing educators' unavailability:

> *"I think that challenge [of educators' unavailability] can be overcome by drawing the program [sic] for the year and ensure that times don't clash … so that when somebody is going out someone should be in the office to attend to all the matters."*

Inactivity of the educators on the discussion forum, as shown by no response, is really frustrating to learners. Support is really needed. Educators should post activities to support learners, as reflected in the following statements:

> *"Maybe there [should be] more activities for students to do … I mean you have a lot of assignments and you forget, but if you get constant reminders … [you can plan ahead]. My other point is that I think the educators should refer us to the Web Sites frequently, like when they refer us to the textbook."*

> *"I think if educators can post something like "Can you discuss this topic, it's important", and that topic should be relevant to whatever is in that module. So, we discuss that on-line and then we see that some think of it this way, and some the other way, just that sort of debate. And if it's from the educator, it might be in the exam, it might be important because it's from the educator. Anything that comes from the educator that we can discuss might bring the attention for students to interact and debate the topic on-line."*

> "*Well, being an international student, I can't attend. You know some lectures are once a month or once in six months … not everybody is posting that information under myUnisa. There were some modules where the educator had a lecture on campus and all the slides are posted on myUnisa, but there are some that are not being posted, so for international students who cannot really come to the country, it really supports us when*

we can go through those slides and see what was taught to the other students …."

Regarding costly study materials, the participants mentioned that the intervention of Unisa and the educators, would resolve this particular challenge:

"I *think the greater variety of e-books would also benefit us because some of us really don't have financial resources to go and buy all the books, so I find a lot of the subjects at Unisa have e-books but, not really in our courses … there are really very few books available to us. If all course could have e-books [speaking emphatically with gestures] it's really going to encourage students to be part of Unisa because it's not necessary to buy hard copies any more, and it's gonna save a lot of paper and … in general I just think it will be a cost-effective way for the university as well as for the students."*

The role of the educator with regard to academic problems is to support the learners accordingly. Educators should inform the learners of their unavailability and refer them to someone who can help them academically. The educator should motivate the learners to be active in the discussion forum, and give them learning activities to engage in on-line.

On-line discussion forums should be encouraged, especially if the forum is observably inactive, and learners should be referred to Web sites in order to obtain additional study information. Furthermore, they should have regular on-line discussions with learners about their (educators') expectations for the examinations, coach and reassure them in preparation for the examinations.

- **Affective and social support**

Distance education students feel isolated and bored. They are occupying multiple roles and lack the social aspect in their lives as they are focusing on studies. Students are in need of support socially and affectively.

The participants indicated that:

> "*I said that uhm sometimes you need to sort of like touch base with somebody else there was last year when we were doing I think it was health science, I can't remember there was a lot of things that we were not understanding, I actually can't remember the sub and, we posted and we had such a great reaction from the other students that we were not the only people that were asking the questions there we thought we were Uhm because a lot of things were not sort of tallying up and there was questions we didn't understand and we were not the only people and it was nice when we posted the reaction we got back from everybody (talking with confidence)."*

> *"Sometimes we use but the people do not respond they only respond to others but you find they are not responding to you and I think another thing that makes it a bit hard for us to go on the forums, we just call our colleagues, colleague I have a problem here, there's challenge".*

Social and affective support should not be neglected. The focus should not be on cognitive and administrative support only. Even if the learner can get cognitive support the affective support should be considered as it has an impact on the learners' psychological aspect. Learners are social beings they also need social support from the educators, the institution and other learners.

5.2.2.3 Benefits of on-line interactivity

Learners indicated that they benefit from on-line interaction because they learn at their own pace. It saves time of going to the post-office to post assignment. It is also convenient to post an assignment online. Once you have posted your assignment on-line you are sure that it has been received as an acknowledgement is received instantly. If perhaps you have made the mistake in your assignment if you have posted it before due time, you can still retrieve it correct and resend. After writing an examination, there is no need to wait for the results per post.

The results are downloaded immediately from the system. It is easy to download even some of the study material on-line. If the university has posted study material, it is easy to trace it on-line. Financial status can be checked on-line. Registration done on-line is convenient and fast as there is no need to stand on the queue.

There is safety and confidentiality in utilising myUnisa because students have passwords for its accessibility. Students have an opportunity to interact through the discussion forum with the educator and other peers. They can even form study groups on-line to share their learning experiences.

5.2.2.4 Challenges of on-line interactivity

Based on the above findings, the challenges of on-line interactivity supersede the benefits. The challenges include: the multiple roles occasioned by work commitments; frequent network problems, unreliable and slow on-line registration; lack of computer skills experienced by some learners; educators not responding to learners' queries; and delayed examination results, which places learners in a predicament as they are uncertain whether to register or not. A shortage of computers, dysfunctional state of some of those that are available, and the open times of the computer lab are some of the challenges experienced.

The educators not responding to on-line interaction and even other students are not responding. None response is annoying and frustrating the students. The findings indicated that educators are not always available in their offices, which the learners' understand. However, the learners insisted on the need to be informed about the educators' unavailability. The issue of non- response from either the educators, is a serious concern to learners.

Unisa delays in addressing learners' critical concern, which is the submission of assignments and receiving results on time:

> "*I even remember that the last time when results were to be issued out, I had a problem, I was down loading my results and I couldn't [closing eyes] then I … I come here [at Unisa] thinking that it's my lap top that is not alright but the same thing happened here and I couldn't download my*

results they said they've changed the date, yet they had said it was the 20th of June, so I tried about a week and I was panicking, and I had to come to the university."

"I just want to add to what she [previous speaker] has said. It took very long for those results to become available, resulting in late registration for the new semester. There were some results that we had to wait for before we could register for the new module, it's very difficult for me because we are rural; sometimes there is not even a bank where you can make a payment …."

"I [logged on to] myUnisa, but the results were not available …."

The results of focus group interviews indicated that, not all learners benefit from on-line interaction especially those who are computer illiterate. It could be that the age factor has an impact on computer illiteracy. Those who are at international countries and rural areas are also not benefitting much as they are challenged by network connection. Irrespective of that, the educator motivated learners to use on-line interactive tools to bridge the gap of time and distance. Challenges were indicated by the learners. As shown in the recommendations the learners attempted to overcome some of the challenges. Learners need support academically, affectively, technologically and institutionally.

5.2.3 Phase 3: On-line questionnaire

5.2.3.1 Introduction

Phase 3 of the study is both **quantitative and descriptive** in nature. Data was presented in the form of tables, bar and pie diagrams. The Chi-Square test was also used to test the null hypothesis of equal proportions/percentages of the categorical variable categories. Hypotheses were formed which led to rejection of null hypothesis in the conclusion as there was an association between research variables.

The Chi-Square test was therefore used to test for the relationship between the categorical variables, on-line interactivity in an Open Distance Learning institution and demographic factors. The P value of less than 0.005 was considered to be statistically significant. The demographic details as illustrated in Table 5.3 were discussed, followed by the background characteristics of this study: namely, information on learners' on-line interactivity in an ODL. Information in Part 2 below related to the results of the Chi-Square tests of association (refer to Annexure H).

The objective being addressed in the above related to:

- determining the extent to which on-line interactive tools are used to enhance learner- to-learner, leaner-to-educator, learner-to-study materials, and learner-to-ODL institution forms of interaction

PART 1

5.2.3.2 Section A: Demographic information

Tables 5.3: Demographic data (N=87)

Demographic data	Classification	Frequency	Percentage
Gender	Male	9	10.3
	Female	78	89.6
Age	21-29	10	11.4
	30-39	42	48.2
	40-49	29	33.3
	Over 50	6	6.9
Marital status	Married	59	67.8
	Single	22	25.2
	Widowed	3	3.4
	Other	3	3.3
Race	Black	65	74.7
	White	9	10.3
	Coloured	7	8.0
	Indian	6	6.9
Residential area	Urban	50	58.8
	Semi Urban	22	25.8
	Rural	13	15.2

Demographic data	Classification	Frequency	Percentage
Mother language	Vernacular	43	49.4
	English	13	14.9
	Afrikaans	6	6.9
	Other	25	28.7
Level of study	Second year	55	63.5
	Third year	42	36.4
Modules	HMA 2601	33	37.7
	HMA 2602	23	26.4
	HMA 3701	12	13.7
	HMA 3702	19	21.8
Country of birth	South Africa	47	54.6
	Africa	26	30.3
	Other	13	15.1
Country of registration of HSM	SA	77	88.5
	Africa	8	9.2
	Other	2	2.3
SA province of birth	Gauteng	9	19.1
	Mpumalanga	10	21.2
	North West	2	4.3
	Free State	1	1.2
	KwaZulu-Natal	16	34.0
	Northern Cape	1	2.1
	Eastern Cape	6	12.7
	Western Cape	2	4.3
SA province of registration of HSM	Gauteng	19	25.7
	Mpumalanga	8	10.8
	North West	3	4.5
	Free State	9	10.8
	KwaZulu-Natal	18	24.3
	Northern Cape	1	1.3
	Eastern Cape	5	6.8
	Western Cape	3	4.5
TOTAL		**87**	**100.0**

Table 5.3 above indicates that 9 (10.3%) of the respondents were males and 78 (89.6%) were females. The reason of the majority of the learners being females is that nursing has historically been a women's profession. Close to 50 of the respondents (48.2%) were in the 30-39 years age group. Of the 87 respondents, 59 (67.8%) are married. It is clear that the findings of the majority of married respondents support the benefit of ODL which is accessibility and accommodation of learners with multiple roles as learners, mothers, and wives and as workers. Since Blacks are historically disadvantaged to access residential universities due to financial constraints, an ODL is

mode of learning is advantageous to them. The respondents' racial composition was mostly Black 65 (74.7%) and vernacular 44 (49.4%) was the mother language. Fifty (58.8%) of the respondents live in urban areas. Demographic information was intended to know more about the background of the second and third year HSM students. Qualification as a registered nurse was one of the requirements for HSM studies. In most cases, students usually opt to start families after qualifying as nurses, hence the average ages of 30-39 being on the majority 42 (48.2%).

There were 55 (63.5%) of the second year respondents and 42 (36.4%) in the third year level of study. Respondents who interacted on-line were targeted for this study. The implications of the lowest percentage 36.4% of the third year learners is that they are not actively interacting on-line. The findings seemed to suggest that third year learners need more support to interact on-line. Learners studying for the HMA2601 module are 33 are (37.7%) and 23 (26.4%) for the HMA2602. On the other hand 12 (13.7%) are in the HMA3701 module, whereas 19 (21.8%) are in the HMA3702 module. HMA2601 and 2602 modules are for second year learners, and HMA3701 and HMA3702 modules are for third year learners. This shows that third year learners are not participating on-line as much as second year learners.

Regarding country of birth indication is given that 26 (30.2%) are born in Africa, while 13 (15.1%) are born in other countries outside of Africa. The nursing profession in South Africa is experiencing challenges of staff shortage. In order to overcome that, there are movements of nurses from other African countries and abroad to South Africa, hence the results indicate that the majority (30.2%) of the nurses are not born in South Africa.

Most of the respondents 77 (88.5%) have registered HSM in SA. The findings is suggestive that the high percentage of 88.5% registered in South Africa is apparently due to the fact that nurses from other countries have immigrated to South Africa and thus increased the number of nurses' registrations.

The majority of the respondents who were born in SA were from KwaZulu-Natal 16 (34%) followed by 9 (19.1%) who were born in Gauteng Province. KwaZulu-Natal and Gauteng are the provinces with big cities in South Africa, where most of the people relocate for job opportunities. The respondents who have registered for HSM in Gauteng Province is 19 (25.7%) followed by 18 (24.3%) in KwaZulu-Natal Province.

The reflection of the majority of learners who have registered in Gauteng Province (24.3%) as compared to 1.3% who registered in Northern Cape Province might imply that, the larger the province the more the learners. It has already been indicated that Gauteng and KwaZulu-Natal are the largest provinces in South Africa (refer to Annexure L for a map of SA).

5.2.3.3 Section B: On-line interactivity in an ODL environment

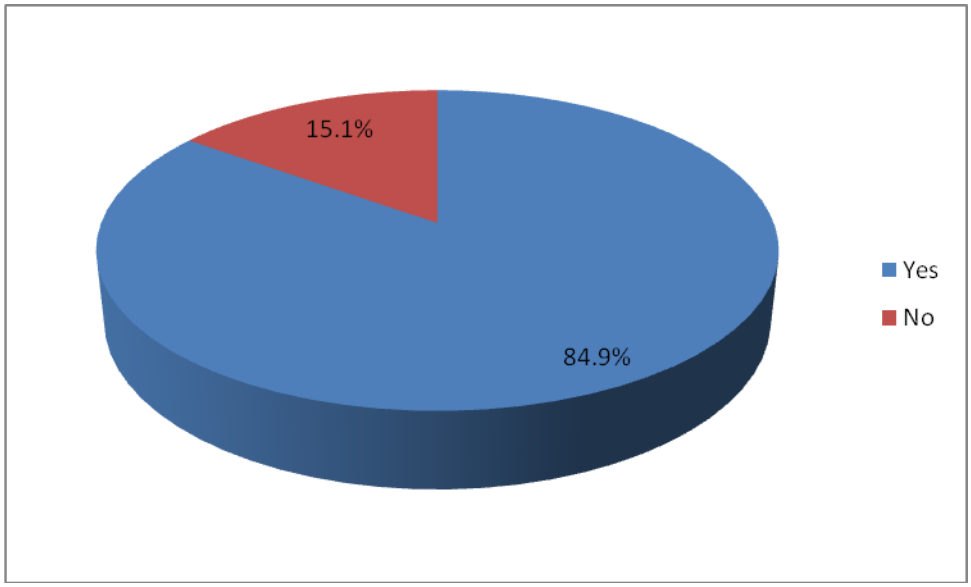

Figure 5.1: Distribution of students by computer ownership (N=86)

Figure 5.1 indicates that 73 (84.9%) of the respondents own computers. This finding suggests that there should be a high probability that learners might interact on-line, as the computer is one of the key tools which enables accessibility for on-line interactive tools.

- **Distribution of students by cell phone ownership (N=86)**

All the respondents 86 (100%) gave an indication of cell phone ownership. HSM educators communicate with learners through cell phone SMS to make learners aware of urgent matters to attend, like reminding them of assignment submission. The findings of cell phone ownership give an impression that the message sent through SMS by the educator reaches large numbers of learners.

- **Frequency of use of email communication**

Table 5.4: Use of email to communicate with peers, educators and Unisa administration (N=86)

Communicate with	Daily		Weekly		Bi-weekly		Monthly		Not at all	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Peers (N=86)	19	22.0	17	19.7	7	8.1	17	19.7	26	30.2
Educators (N=86)	0	0	2	2.3	2	2.3	26	30.2	56	65.1
Unisa admin (N=84)	1	1.1	7	8.3	6	7.1	32	38.1	38	45.2

The respondents 56 (65.1%) do not communicate with educators at all by using emails. This means that in spite of approximately 84.9% of learners having access to the computer, they do not communicate with their educators. The findings suggest that emails might not be a preferred method of on-line interaction with the educators. This could indicate that learners might have other preferred ways of interacting on-line. The majority of learners 32 (38.1%) do communicate by means of emails on a monthly basis with the Unisa administration, 17 (19.7%) with peers, and 26 (30.2%) with educators. Despite the lower percentages of monthly interaction, the implication of more monthly communication with Unisa administration as compared to peers and educators might be that, since learners submit assignments on a monthly basis through myUnisa, they need to enquire from the Unisa administration whether their assignments have been submitted and received successfully.

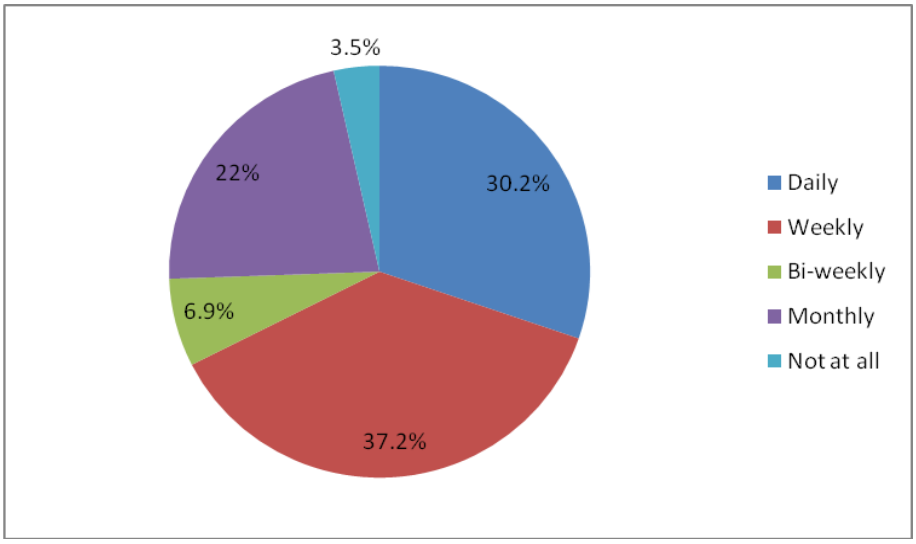

Figure 5.2: Distribution of students by frequency of use of the Internet to search for information (N=86)

Figure 5.2 indicates that 32 (37.2%) of the respondents use the Internet weekly to search for information, followed by the daily search 26 (30.2%) of the respondents. Search of information on monthly basis is 19 (22%) and 6 (6.9%) search for information on the Internet bi-weekly. This means that a majority of students have access to the Internet and they use it to search for information.

- **Frequency of use of myUnisa to communicate with Unisa administration, educators and peers**

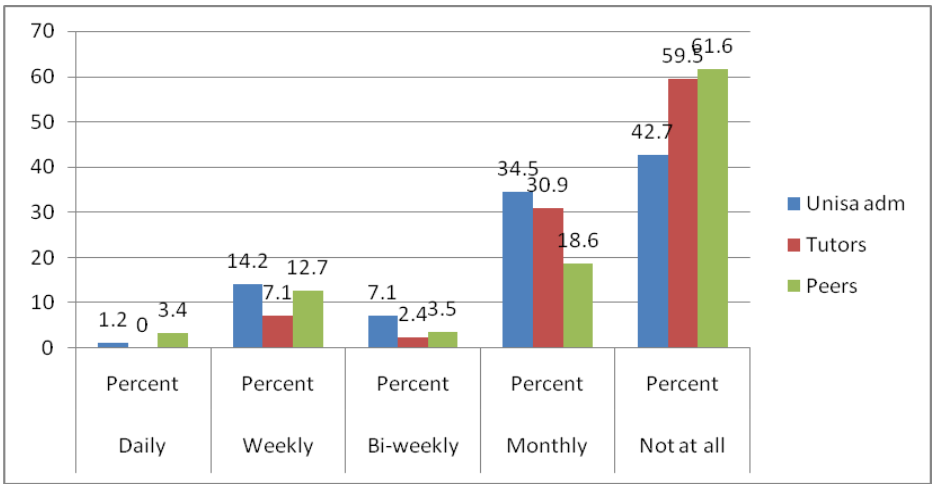

Figure 5.3: Use of myUnisa to communicate with the Unisa administration (N=87)

myUnisa and emails are interactive tools which learners are expected to utilise for purposes of interacting on-line purpose, but the findings reflect that the majority of the learners 53 (61.6%) do not interact at all by both means of myUnisa. It has been discussed in table 5.4 that even emails 56 (65.1%) are not utilised at all for interaction. and myUnisa). In an ODL environment, learners are expected to interact with their peers, educators and Unisa to enhance teaching and learning, sharing of problems and formation of study groups on-line. Interaction with their peers, educators, study materials and Unisa is one of the objectives of this study being exploration of learner-to-learner, learner–to-educator, learner-to-study material and learner-to-Unisa interaction. The possibility of under-utilisation of interactive tools might be that, since the majority of learners are married, they may have challenges of time and the multiple roles they play. One of the possibilities of under-utilisation might be that of some learners not computer literate.

- **Frequency of use of a cell phone to communicate with Unisa, educators and peers**

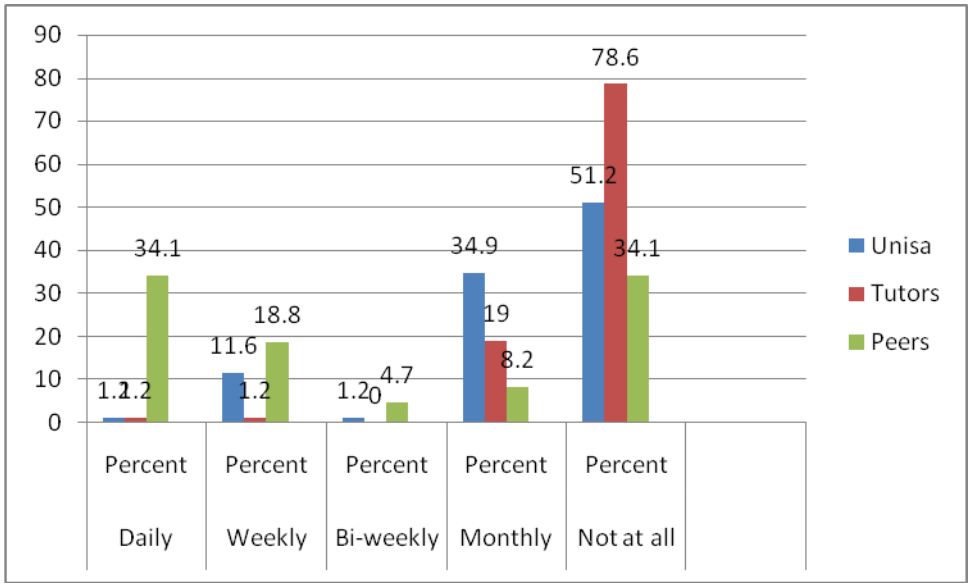

Figure 5.4: Use of a cell phone to communicate with Unisa (N=86)

Although many of the learners own cell phones, majority of them do not use it for teaching and learning only 30 (34.9%) communicate with peers on a monthly basis. The findings give an impression that ownership and utilisation of cell phones by learners might be related to social, more than academic interaction.

- **Frequency of the use of video conference with educators, peers and Unisa**

Table 5.5: Use of video conference with educators, peers and Unisa (N=84)

Video conference	Daily		Weekly		Bi-weekly		Monthly		Not at all	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Educators (N=83)	0	0	1	1.20	0	0	13	15.6	69	83.1
Peers (N=84)	0	0	1	1.19	0	0	4	4.7	79	94.0
Unisa (N=84)	0	0	1	1.19	0	0	1	11.9	73	86.9

Video conferencing is one of the interactive tools organised by Unisa. It is connected to all regional campuses of Unisa around South Africa. It benefits the learners as they are able to interact on-line and to see the faces and hear the voices of other learners and the educators on-line.

The educators give presentations of modules on-line, and this further stimulates learner-to-learner on-line interaction. Most importantly, it gives learners an opportunity to present their learning problems.

- **Frequency of reading myUnisa announcements, use of discussion forum, self assessment, and looking for study materials**

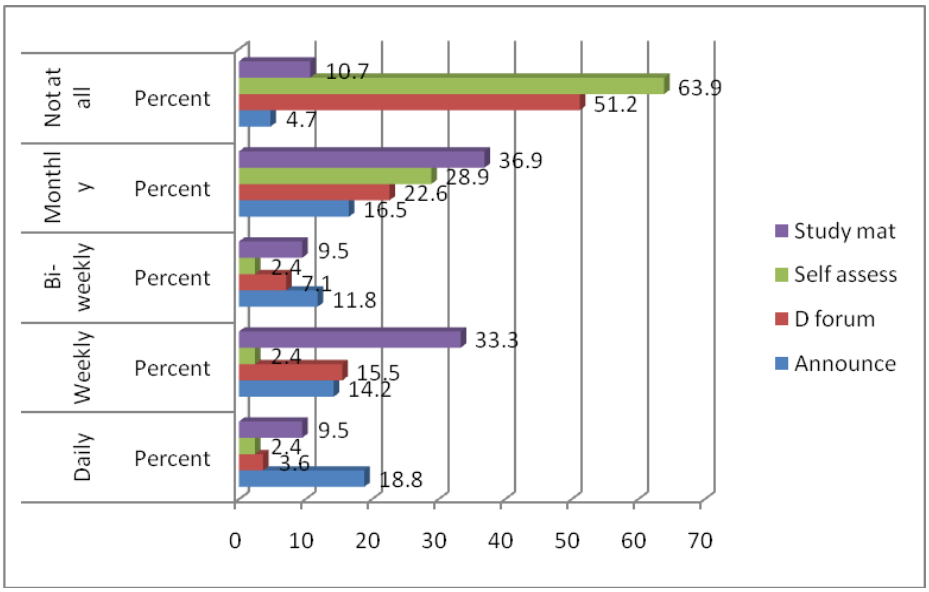

Figure 5.5: Reading myUnisa announcements, use of discussion forum, self assessment and study material (N=85)

This finding of non-utilisation of myUnisa 54 (63.9%) self assessment is related to the findings in Figure 5.8, where the minority of the learners 3 (3.5%) are not searching for information at all through the Internet. These findings imply that the learners might be satisfied with the information they obtain from other sources, and do not doubt their knowledge, hence they feel that there is no need to read self assessment of myUnisa.

The majority of the learners 44 (51.2%) read the discussion forum. In order to read the discussion forum, learners access the myUnisa Web site. However, the majority of learners 53 (61.6%) as indicated in figure 5.3 revealed that they do not use myUnisa at all to communicate with peers, educators and Unisa. The findings are contradictory. This implication is suggestive that learners can access myUnisa only to have access to the discussion forum link but not to other links such as self assessment and study material.

The discussion forum link of myUnisa gives learners an opportunity to interact with other learners and the educator.

- **Frequency of submission of assignments via myUnisa, use of schedules, additional resources through myUnisa, and viewing of podcast and Frequently Asked Questions through myUnisa**

Table 5.6: Submission of assignments via myUnisa, use of schedules, and additional resources (N=86)

Use of myUnisa	Daily		Weekly		Bi-weekly		Monthly		Not at all	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Submission of assignments (N=86)	6	6.9	22	25.5	10	11.6	37	43.4	11	12.7
Schedules (N=82)	3	3.6	11	13.4	4	4.8	23	28.1	41	50
Additional resources (N=85)	3	3.5	21	24.7	4	4.7	34	40	23	27.0
Podcast (N=85**)**	0	0	4	4.7	1	1.2	5	5.9	75	88.2
FAQ (N=84)	2	2.3	12	13.9	2	2.3	43	50.0	27	31.4

Table 5.6: A podcast is an audio communication tool which enhances teaching and learning. It is one of the tools used for communication at Unisa, by which the educator posts information on-line for the learners to read. Learners are then encouraged to view and listen to the podcast so that they can hear the voice of the educator and the information the educator conveys to enhance learning; but irrespective of such initiative, the findings indicate that 75 (88.2%) of the respondents do not view the podcasts at all.

The schedule is the link where other on-line information is posted on myUnisa. The findings indicate that 43 (50%) of the learners do not view schedules at all. However, 37 (43.4%) of the learners do submit their assignments on a monthly basis via myUnisa; frequently asked questions 43 (50%) are viewed through myUnisa; and 34 (40%) of the respondents do look for additional resources. Submission of HSM assignments is usually on a monthly basis. The findings indicate that the learners become more active, knowing that the assignments will be due, hence the majority do view additional resources and frequently asked questions.

- **Student proficiency in using a computer, the email, Internet, and myUnisa**

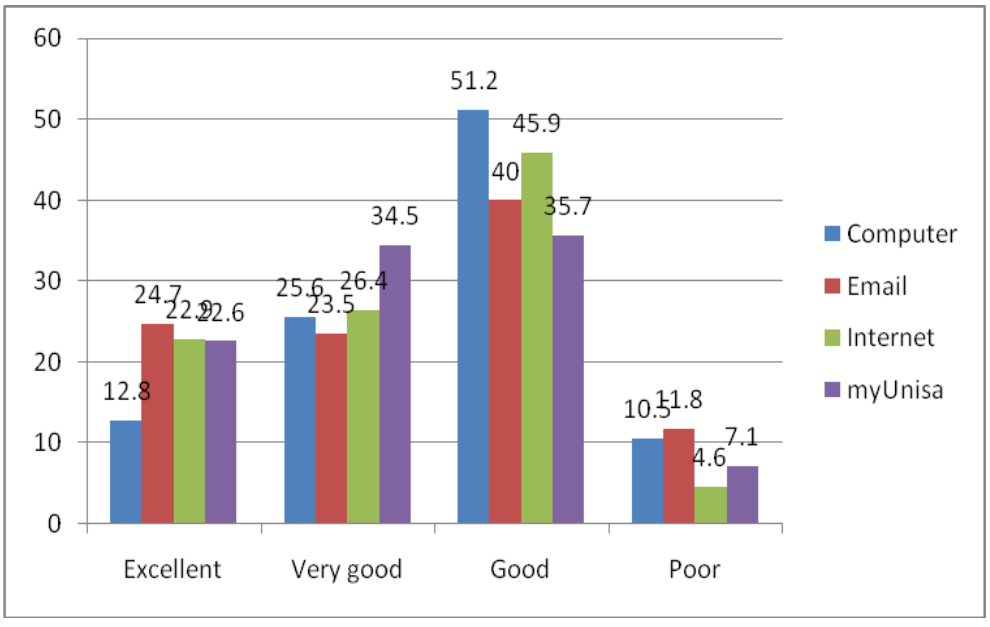

Figure 5.6: Students use of a computer email, Internet, and myUnisa (N=87)

Of the respondents 45 (51.2%) are good in using the computer and 31 (35.7%) are also good in using myUnisa. Irrespective of learners being good in using myUnisa previous findings reflected in figure 5.3 indicate that the majority of learners 56 (61.6%) do not communicate at all with peers and educators by using emails and myUnisa. This is a concern to the researcher and needs intervention.

- **How good are students at using video conference, announcements, discussion forum and study material**

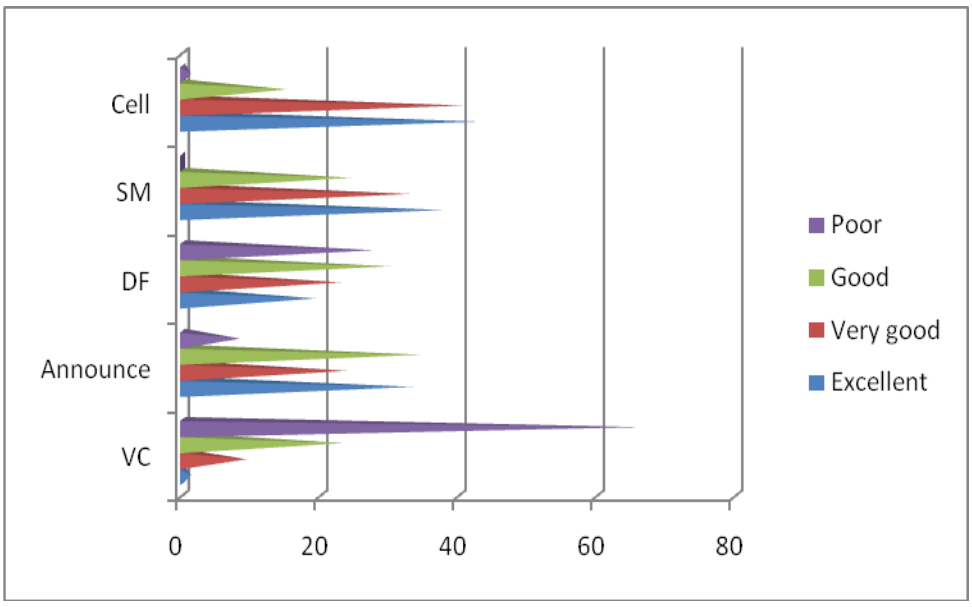

Figure 5.7: Students' use of discussion forum (N=86)

This finding of poor attendance of video conferences 57 (66.3%) is supported by previous findings of this study which revealed that some learners do not use video conference to communicate with their educators and peers. These findings suggest that there is a need for serious intervention from the university and the educators as the organisers of the video conferences.

Of the total number of respondents (n=86), only 26 (30.1%) are good in using the discussion forum, 30 (34.5%) are good in using announcements; and 21 (24.4%) are good in accessing study materials in myUnisa. This is questionable, considering that the percentages are lower regarding the excellence and the good responses relating to the utilisation of cell phones, access to study materials, announcements, and the discussion

forum. It is suggestive that the reason for under-utilisation of the tools should have been asked, which is a limitation of this study.

- **How good are students' at using myUnisa self assessment exercises, module assignments, schedules, additional resources, podcast and frequently asked questions**

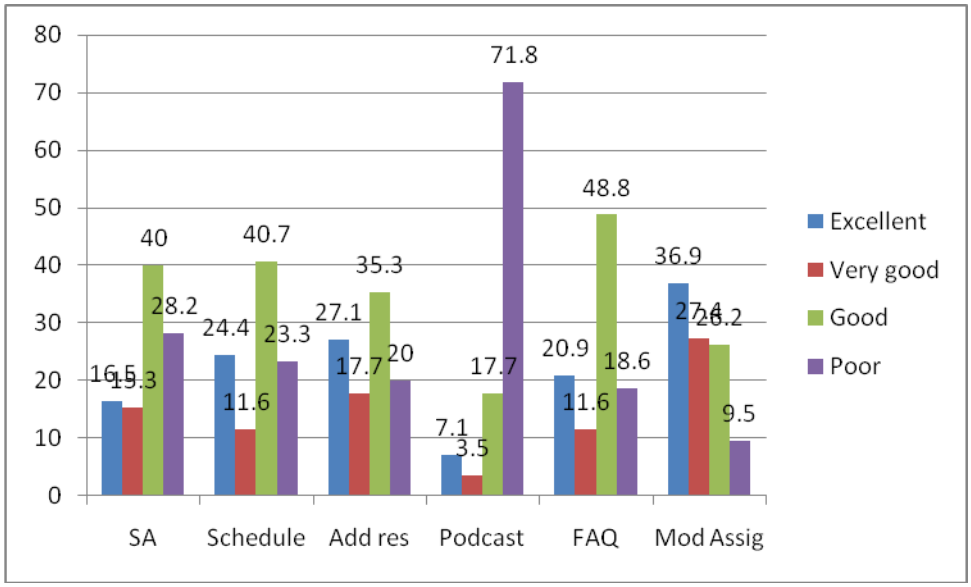

Figure 5.8: Students use of myUnisa self assessment exercises (N=86)

Figure 5.8 illustrates that 62 (71.8%) of the respondents are poor in using the podcast, and 25 (28.8%) are poor in using self assessments. Of the total number of respondents, 42 (48.8%) are good in using frequently asked questions, 34 (40%) are good in using self assessment, 35 (40.7%) are good in using schedules, and 30 (35.3%) in using additional resources. Of the total number of respondents (n=86), 32 (36.9%) are excellent in the use of modular assignments. That the learners are poor in using podcast, is supported by the findings reflected in table 5.6, where there is an indication that 75 (88.2%) of learners do not view podcasts. Such a huge indication 88.2% can only suggest that learners need urgent support in the utilisation of podcasts.

- **Students' opinions on the value of on-line interactivity with educators/educators and Unisa effectiveness of on-line interactive tools, availability of educators to solve teaching and learning problems, and assignment on-line feedback**

Table 5.7: Students' opinions on the value of on-line interactivity with tutors/educators (N=87)

Distribution of students	Strongly agree		Agree		Strongly disagree		Disagrees		Not sure	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
On-line interactivity with educators (N=84)	37	44	37	44	1	1.19	2	2.38	7	8.3
Effectiveness of on-line interactive tools (N=86)	30	34.8	45	52.3	1	1.16	1	1.6	9	10.4
Availability of educators to solve problems (N=87)	23	26.4	38	43.7	10	11.49	5	5.75	11	12.6
Assignment on-line feedback (N=87)	49	56.3	34	39.0	0	0	2	2.30	2	2.3

It is illustrated in table 5.7 that 37 (44%) of the respondents strongly agree on the value of on-line interactivity with educators, and 49 (56.3%) strongly agree on the value of on-line assignment feedback. The effectiveness of on-line interactive tools is agreed to by 45 (52.3%) of the respondents, while 38 (43.7%) agree on the availability of educators to solve their learning-related problems.

Indications are that learners own computers and agree on the effectiveness of on-line interactive tools and the availability of educators to solve problems. However, some learners still under-utilise these learning tools, which points out to the fact that learners are indeed experiencing challenges insofar as the effective utilisation of on-line interactive tools is concerned.

- **Distribution of students' opinions on the efficacy of the on-line discussion forum to study with their peers**

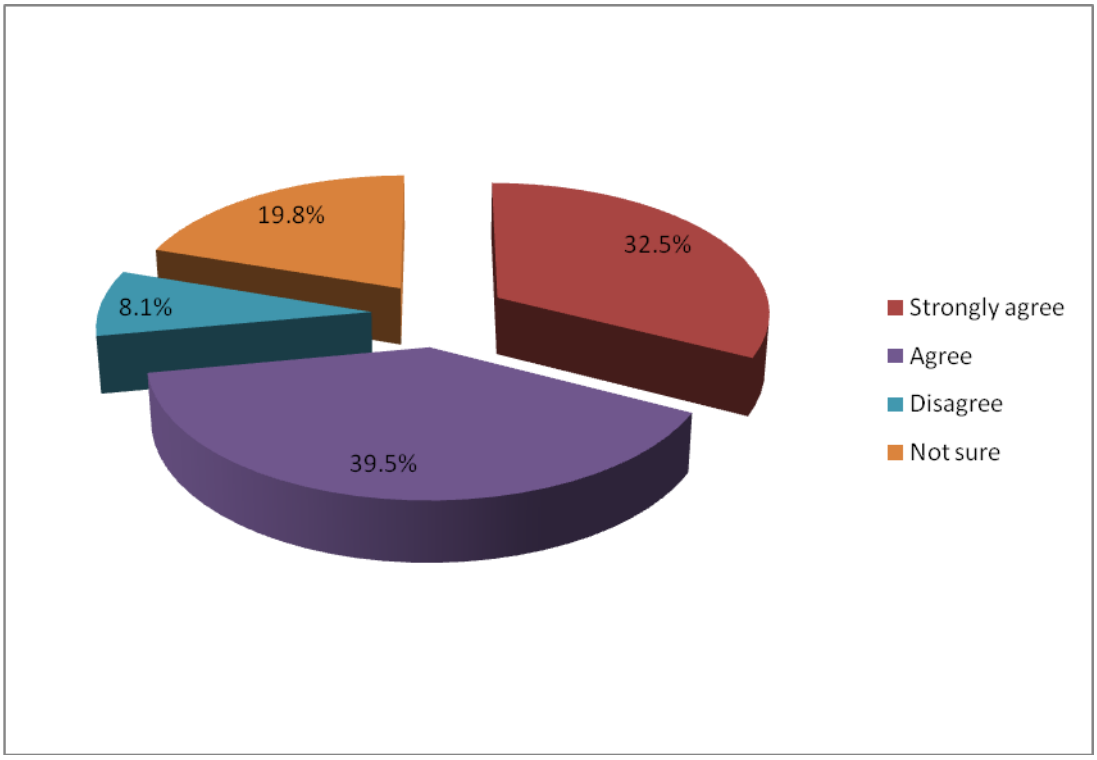

Figure 5.9: Students' opinion on the efficacy of the on-line discussion forum to study with their peers (N=86)

In figure 5.15, 34 (39.5%) of the respondents agree on the allowance by the on-line discussion forum to study with their peers; 28 (32.5%) strongly agree; and 17 (19.8%) are unsure of the on-line discussion forum's allowance to study with their peers. Only 7 (8.1%) of the respondents disagree on the allowance by the on-line discussion forum to study with their peers.

Since almost 40% which is the majority in this category agree on the allowance of the discussion forum to study with peers, it is convincing that the learners do value the on-line discussion forum.

- **Students' opinion on the necessity of computer skills for on-line interactivity**

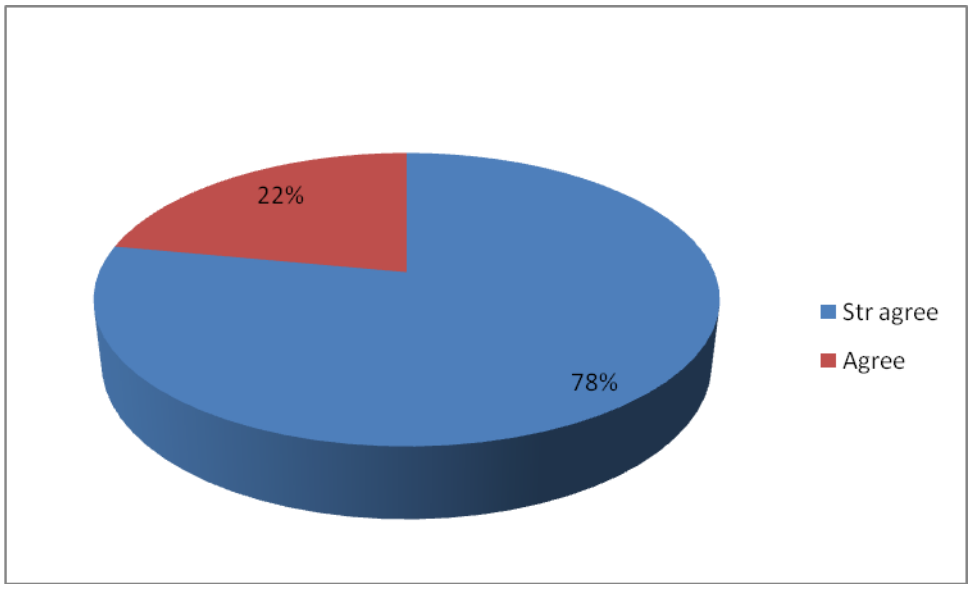

Figure 5.10: The necessity of computer skills for on-line interactivity (N=86)

Figure 5.10 illustrates that 67 (78%) of the respondents strongly agree on the necessity of computer skills for on-line interactivity. The findings concur with findings in figure 5.6, which has indicated that 45 (51.2%) of the respondents are good in using the computer.

- **Distribution of students' opinions on receiving SMS from educators**

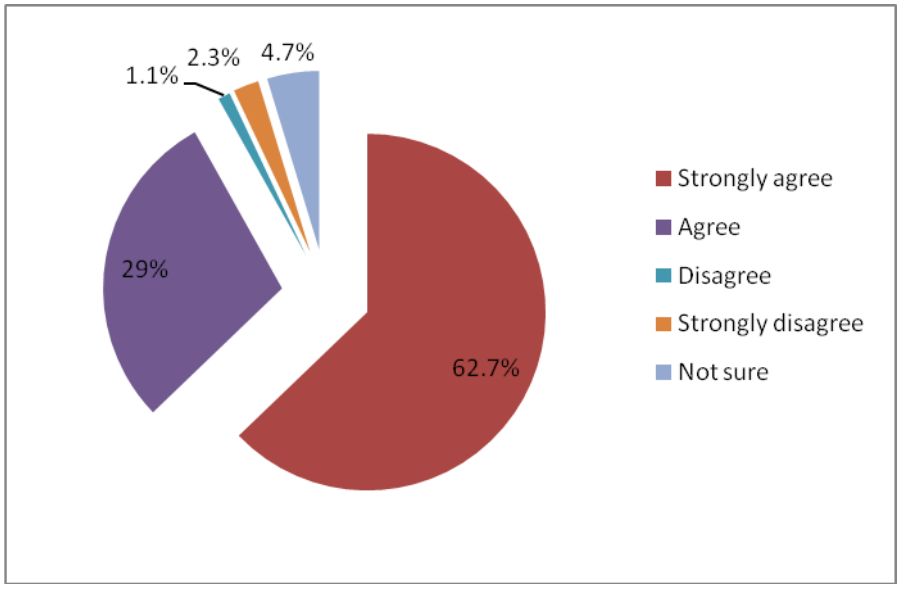

Figure 5.11: Students' opinions on receiving SMS from educators (N=86)

The findings shows that 54 (62.7%) of the respondents strongly agree on receiving SMS from their educators, while 25 (29%) just agree, and only 4 (4.7%) of the respondents were unsure of receiving SMS from educators. Only 1.1% disagrees on receiving SMS from the educators. The learners' strong agreement on receiving SMS from the educators by a majority of 62.7% is convincing that they completely support the usage of cell phones as a means of interacting on-line.

- **Distribution of students' opinions of on-line support**

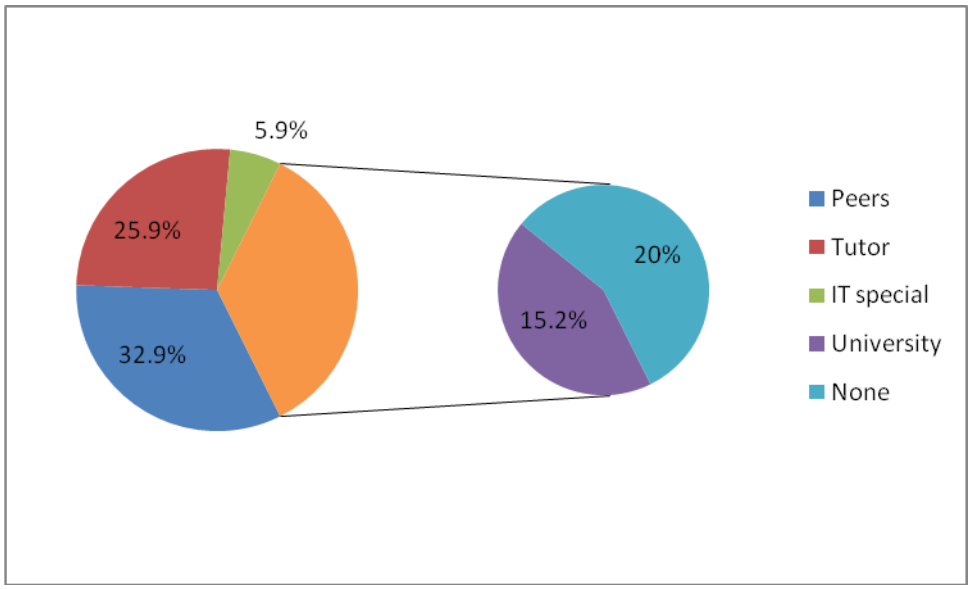

Figure 5.12: Support for students' on-line interaction (N=85)

An illustration is given that 28 (33%) of the respondents confirmed that they do get support from their peers when interacting on-line, followed by 22 (25.9%) who indicated that the support they receive is from their educators and 17 (20%) of the respondents indicated no support from both educators and fellow learners when interacting on-line. The findings indicate that learners need also educator support when interacting on-line.

PART 2

5.2.3.4 Results of the Chi-square tests of association of the variables

The statistically derived tables of all the demographic variables (explanatory or independent variables) to be discussed are: gender, age, marital status, level of study, module, country of birth, SA province of birth, country of registration, SA province of registration, mother language, race, residential area, and computer ownership (though it is not a demographic variable but relevant to the discussion). Questions 3-50 of the on-line questionnaire are reflective of the rest of the non-demographic variables which also have a direct bearing on on-line interactivity in an ODL environment. The association of the variables is supported by the p- value test (< 0.005), degree of freedom and the conclusion based on the Chi square test (refer to Annexure H).

Table 5.8: Significance of the variables on frequency of email usage

Variable	Frequency	P-value <0.005	Degree of freedom
Frequency of use of emails with peers	30.2%	0.0005	4
Frequency of use of emails with educators	**65.1%**	0.0005	3
Frequency of use of emails with Unisa	45.2%	0.0005	4
Frequency of use of Internet to search for information	37.2%	0.0005	4

Table 5.8 illustrates that the frequency of use of emails by educators is high at 65.1%, as compared to other variables.

Table 5.9: Significance of the variables on frequency of usage of myUnisa

Variable	Frequency	P-value <0.005	Degree of freedom
Frequency of usage of myUnisa to communicate with peers	**61.6%**	0.0005	4
Frequency of usage of myUnisa to communicate with educators	59.5%	0.0005	3

Table 5.9 illustrates that the frequency of the usage of myUnisa to communicate with peers is high at 61.6%, as compared to other variables.

Table 5.10: Significance of the variables on frequency of cell phone usage

Variable	Frequency	P-value <0.005	Degree of freedom
Frequency of usage of cell phones to communicate with Unisa	51.2%	0.0005	4
Frequency of usage of cell phones to communicate with educators	**78.6%**	0.0005	3
Frequency of usage of cell phones to communicate with peers	34.1%	0.0005	4

Table 5.10 illustrates that the frequency of the usage of cell phones to communicate with educators is high at 78.6%, as compared to other variables. This finding projects that learners are more comfortable to interact by utilising cellular phones. This indicates that ODL institutions should encourage learners to have smart phones because of their Internet accessibility, which enables learners to access myUnisa Web Site at any time, irrespective of their physical location.

Table 5.11: Significance of the variables on frequency of usage of video conferencing

Variable	Frequency	P-value <0.005	Degree of freedom
Frequency of usage of video conferencing with educators	**83.3%**	0.0005	2
Frequency of usage video conferencing with peers	**94%**	0.0005	2

In table 5.11, the frequency of the usage of video conferencing with educators is high at 83.3%, and the frequency of the usage of video conferencing with peers is the highest at 94%, suggesting that video conferencing is a preferred mode of learning by learners.

Table 5.12: Significance of the variables on frequency of usage of myUnisa

Variable	Frequency	P-value <0.005	Degree of freedom
Frequency of submitting assignments	43.4%	0.0005	4
Frequency of the usage of schedules	50%	0.0005	4
Frequency of the usage of additional resources	40%	0.0005	4
Frequency of viewing podcasts	**88.2%**	0.0005	3
Frequency of viewing frequently asked questions	50%	0.0005	4

In table 5.12, the frequency of viewing podcast is high at 88.2% as compared to other variables. This implies that educators must actively post information on the podcast.

Table 5.13: Significance on the variables on the level of ability to use video conference

Variable	Frequency	P-value <0.005	Degree of freedom
Level of ability to use computers	51.2%	0.0005	3
Level of ability to use emails	40%	0.0005	3
Level of ability to use the Internet	45.9%	0.0005	3
Level of ability to use myUnisa	34.5%	0.0005	3
Level of ability to use cell phones	43%	0.0005	3
Level of ability to use video conference	**66.3%**	0.0005	3
Level of ability to access announcement in myUnisa	34.5%	0.0005	3
Level of ability to access discussion forum in myUnisa	30.1%	0.0005	3
Level of ability to access study materials in myUnisa	37.8%	0.0005	3
Level of ability to access self assessment exercises in myUnisa	40%	0.0005	3
Level of ability to access module assignments in myUnisa	36.9%	0.0005	3
Level of ability to access schedules in myUnisa	40.7%	0.0005	3
Level of ability to access podcasts in myUnisa	**71.8%**	0.0005	3
Level of ability to access frequently asked questions in myUnisa	48.8%	0.0005	3

Table 5.13 indicates that the frequencies of the levels of ability to use video conferencing 66.3% and to access podcasts from myUnisa 71.8% are high as compared to other variables. This means that educators must keep on encouraging the learners to use podcast and video-conference. It seems that learners are benefitting in accessing those learning management systems. The discussion forum accessibility is low 30.1%, which is a concern because it gives learners platform to interact with other learners and educators anywhere and at anytime. It also gives learners an opportunity to form study groups on-line.

Table 5.14: Significance of the variables on the level of agreement on the necessity of computer skills

Variables	Frequency	P-value <0.005	Degree of freedom
The level of agreement by opinion on the effectiveness of on-line interactive tools	52.3%	0.0005	4
The level of agreement by opinion on the availability of educators to solve problems related to teaching and learning	43.7%	0.0005	4
The level of agreement by opinion on the value of on-line feedback on assignments	56.3%	0.0005	3
The level of agreement by opinion on the allowance of discussion forum of learner to study with peers	39.5%	0.0005	3
The level of agreement by opinion on the necessity of computer skills for effective on-line learning	**78%**	0.0005	1
The level of agreement by supports learners when interacting on-line	32.9%	0.0005	5

Table 5.14 indicates that the frequency of the levels of agreement by opinion on the necessity of computer skills for effective on-line learning is high at 78%, as compared to other variables. This gives an impression that learners need support in order to acquire computer skills.

5.3 CONCLUSION

The data brought to the fore the fact that learners encountered challenges of on-line interactivity, despite the benefits that have already been indicated. The majority of

learners (100%) own computers, but utilisation of on-line interactive tools like myUnisa, podcasts and video conferences is poorly effected. In chapter 6 the research results conclusion, limitations of the study and recommendation will be discussed.

Various sources of reference (literature review) consulted for these studies were critical in the consolidation of the research findings. In the data analysis process and interpretation of the findings, the literature will either corroborate or disprove these findings, and/or vice versa; that is the extent of on-line interactivity among HSM learners at an ODL institution.

To consolidate the research findings, the literature were consulted which concurs or differs with the present study. On-line interactivity literature was used.

CHAPTER 6

FINDINGS, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

The general purpose of the study was to explore the extent to which the on-line interactivity mode is utilised by the HSM learners in an open distance learning institution in order to facilitate learning. The previous chapter presented the three phases of data collection and analysis of the results obtained from those three phases, outlined as follows:

- Phase 1: Data was collected by means of the discussion forum to determine the nature of on-line interaction between the learners and their educators.
- Phase 2: Data was collected by means of focus group interviews in order to explore the learners' on-line interactivity in an ODL institution with other learners, their educators, their study materials, and the open distance learning institution.
- Phase 3: Data was collected by utilising the on-line questionnaire in order to determine how on-line interactive tools could be used to enhance interactions between learners and their peers, their educators, their study materials, and their ODL institution.

Chapter 6 specifically sets out to discuss and synthesise the main findings reflected in chapter 5. In the current chapter, a summarised discussion and interpretation of the study's findings is undertaken by the researcher in tandem with the research topic and its declared objectives.

Mixed research methods were opted for in order to enhance a triangulated approach to the study, where triangulation refers to the use of multiple methods, data collection strategies and data sources to obtain a more complete picture of the research subject and to cross-check information (Gay, Mills & Airasian 2009:608).

Accordingly, the discussion focuses on the consolidation of the interpretation of the discussion forum, focus group interviews, and the on-line questionnaire. Data from original sources in other studies were also used to contextualise and locate the discussion within comparable national and international milieus. The developed summary obtained will help in articulating concomitant recommendations of the study. The limitations of this study and the recommendations for further study are also included in the discussion.

6.2 SUMMARY OF THE DISCUSSION OF THE FINDINGS OF THE THREE PHASES OF DATA COLLECTION

The discussion to follow consolidates and summarises the discussion of the three phases of data collection. The intended outcome of this trajectory of discussion is to produce a logically coherent picture of the achieved objectives and the recommendations made in this study. The findings were based on the theoretical framework of Bruner's constructivist theory; the conversation theory of Pask; the social development theory of Vygotsky; and Moore's transactional distance theory. Vygotsky's ideas are considered relevant as they address pedagogy and learner interaction; Brunner's ideas explicate students' interaction with the world by exploring and manipulating objects; while Pask's ideas illuminate that learning occurs through conversations; and Moore's theory is also more relevant to distance learning as it explains the relationship between participants in a distance learning situation. The relevance, implications, and impact of these theories is reflected in the ensuing discussion.

6.2.1 Trends in learner on-line interaction

Learners use their minds in order to understand and make sense of their experiences when interacting with their learning materials, their educators, their peers, and their learning resources (Vygotsky 1978:56-57). It is these experiences that necessitated a study and monitoring of their trends of interaction. The implications of these trends of interaction are illustrated sequentially in accordance with the months during which learners engaged in associated learning activities.

The observed on-line interaction trends reflect that during the month of *March*, the discussions were based on registration, procurement of study materials, study group discussions and submission of assignments. In *April,* the trend focused on assignment queries, video conferencing, and study groups; and in *May,* delayed feedback on assignments was queried. Concerns with delayed feedback on assignments gave the impression that learners are preparing for examination. In *June* there was no active interaction due to the fact that the learners were writing their examinations. It was further noted that there were differences between the second and third year learners. In *March,* on-line interaction of third year learners focused on study materials, study groups, assignments, best wishes, video conferencing, social networks and podcasts; while second year learners' interaction focused mainly on on-line registration. The second year learners' focus and prioritisation of on on-line registration indicates that they do utilise myUnisa to register and do not prefer queuing at the registration offices to register physically.

In April, third year learners; on-line interaction premised on forming study groups or discussions on examinations. The second year learners focused on supporting one another by means of cell phones and social networks such as BBM. In *May,* learners were concerned with feedback on their written assignments, which would assist them in preparing for their examinations.

*I*n *June,* for both second and third year learners there, was minimal interaction as the examinations were in full session. Second year learners experienced the difficulty of accessing Multiple Choice Question link. This gave a positive impression that learners are seriously revising for examinations and planning to compare answers with those on myUnisa.

6.2.1.1 Learner-to-educator interaction

Student-educator interaction is one of the most critical factors in enhancing student satisfaction in an on-line course (Nandi, Hamilton & Harland 2012:5).

In this study indication was given that 51.2% of the learners are good in using the computer. Irrespective of learners being good in using the computer the majority of

them 61.6% do not interact with educators by using myUnisa and 65.1% do not also communicate at all with the educators through the use of emails but 62.7% of the learners' strongly agreed on receiving SMS from the educators.

Vygotsky's and Brunner's theories emphasise the interactive engagement of the learner with the learning material, peers and educators. The transaction known as distance education is therefore construed as the "interplay between people who are teachers and learners, in environments that have the special characteristic of being separated from one another" (Moore & Kearsley 2012:132). The first type of interaction regarded as essential by most learners, and is highly desirable by most educators, is the interaction between the learner and an educator (Moore & Kearsley 2012:132). It is this perspective (first type of interaction; namely, learner-educator interaction) that influenced the researcher to consider learner-to-educator interaction as critical in area of focus in any meaningful discussion on trends in learner on-line trends. Tomei (2008:696) illuminates that the educator-student interaction is imperative to learning, and student and educator are expected to be engaged in active dialogue.

Both academic and social on-line interactions are expected to facilitate teaching and learning. If the two types of interactions are deficient in ODL institutions, it is unlikely that teaching and learning will be enhanced. Academically, interaction enables learners to share their knowledge and raise their problems**.** Socially, learners can form study groups on-line.

According to Vygotsky (1978:56-57), social constructivism suggests that learners be actively involved in a joint enterprise with the educators and fellow learners in creating new meanings of their experiences. Learners are the main characters in the learning activities and are expected to actively participate in the knowledge-sharing and construction process (Ruey 2010:718).

Most types of interactions take the form of asynchronous interaction, since that meets the needs of students for convenience any place and any time (Moore & Kearsley 2012:131). According to Nandi, Hamilton and Harland (2012:6), on-line asynchronous discussion forums are becoming a common feature in on-campus and on-line courses as they allow students and educators to communicate with each other regardless of time and space; learners share and gain knowledge from each other. However, on-line

engagement does not always happen automatically between students. It was reported by Nandi, Hamilton, Chang and Balbo (2012: 684) that the use of discussion forums in education has been a controversial and robustly debated topic in tertiary education.

However, setting up discussion forums does not ensure that learners will interact with each other actively. Grading of the discussion forums participation is done to ensure qualitative learner participation. In this discussion, the researcher focuses on the findings of three data collection phases of learner-to-learner interaction.

Activities relating to assignments are crucial on-line trends, as attested to by 56.3% of the respondents who strongly agreed on the value of assignment feedback. The findings indicated that learners sometimes received erroneous feedback on assignments from their educators. The educators were made aware of these errors, some educators acknowledged the errors and thanked the learners; while other educators did not respond at all to these errors. This show how vigilant the learners were in checking the assignment feedback and how assertive they were in approaching the lectures regarding these feedback errors.

Learners become very uncomfortable in the event of educators not responding or delaying in responding to their queries. Some learners are constrained by geographic distance, and find it difficult to physically present their queries. This implies that lack of feedback from the educator may engender undesirable emotions. Feedback is important for the learners' revision purposes and in preparation for examinations. Educators should provide feedback to learners on time in order to alleviate their anxiety.

The presence of social cues includes the signals that make the individuals aware that they are being acknowledged by the other party with which they are engaged in the interaction (Franceschi, Lee, Zanakis & Hinds 2009:83). In the event that the learner receives no responses from peers or educators, he/she would be uncertain that the interaction has been acknowledged.

Within the constructivist framework of on-line distance education, feedback is considered a key element of teachers' roles, as it promotes the regulation of learning.

A comparable study on the value of feedback was conducted with a sample of 186 students at the Open University of Catalonia. The aims of the study was to identify the presence of feedback according to the learning required, and to explore the possible relationships between content feedback and the results of teaching and learning processes in on-line environments.

Feedback corresponding to interactive regulation (response to questions about course content) and retroactive regulation (feedback following an assignment) were required by the learner. It was concluded that in general, the presence of feedback is associated with improved levels of performance and higher levels of satisfaction with the general running of the course (Espasa & Meneses 2010:277, 283).

Several other studies support the value of on-line feedback on assignments. For instance, the research by Lee and Choi (2011:593) reported that students will be motivated to pursue on-line courses if faculty gave timely and appropriate feedback, involve students in interactive activities, and promptly provide support to struggling students.

Periodic feedback from the educators is essential and always valued highly by students as it keeps them on track (Nandi, Hamilton & Harland 2012:23). Students' feedback, both formal and informal, usually drives the basis of improvement in many aspects of on-line environments. These environments include availability of discussion forums, access, communication clarity, clear links between assessment activity, and unit outcomes (Dixon, Dixon & Axmann 2008:256).

In further support of the need for providing feedback to learners, a study was conducted by Nandi, Hamilton, Chang and Balbo (2012:684), which focused on the evaluation of the Educator's participation in a discussion and its impact on students. The results show that students depend highly on the educator's feedback, and the participation of students can only be evaluated with reference to the moderation of educators.

Active communication and feedback to learners ensures that the learning environment meets their expectations (Liu, Hodgson & Lord 2010:100).

Students (at the selected ODL institution for this study) complained about the late delivery of study materials, which can impact negatively on early submission of their assignments. This problem is administrative, but was directed to the educator due to the fact that the educator would have clout in addressing the problem of late submission of assignments. The latter problem might lead to learners' year mark being affected due to the penalty meted during marking by educators on-line.

According to Nandi, Hamilton and Harland (2012:5), interactive activities can assist learners to share and gain knowledge from each other. In this study, learners supported one another. One of these learners referred another learner to a Web Site with a quick, efficient, and cost effective service; while another informed his/her colleagues of a second-hand book being sold. It was further observed and noted (in this study) that a degree of student support was provided in the form of educators directing and advising learners where to get other prescribed study materials. This implies that even if the interaction in the discussion forum is directed to the educator, the learners themselves are at liberty to respond if they have answers. Interaction in the discussion forum is a two-way leaner-to-learner and even learner-to-educator. According to Tsai (2011:506), the teacher should initiate efforts to help establish learners' essential knowledge and develop basic skills in the initial stage of the course.

Although the learners applauded the presence of the discussion forum as the main tool of on-line interactivity as compared to other tools, they realised that the challenges of on-line interactivity supersede the benefits. This is a concern that needs university management's intervention. Where student on-line interactivity is minimal, ODL institutions face the possibility of gradual decline in student enrolments, and begin to fall apart; with the inevitable consequence of students resorting to the residential universities.

Moore and Kearsley (1996:126) indicated that educators experience distance learning challenges as well, such as the challenge of transactional distance imposing the inability to see students' reaction to what it is said and done in respect of the essential aspects of teaching and learning. Effectiveness of teaching is dependent on how well educators use the technology involved. The following discussion focuses on the challenges and benefits of on-line interactivity.

6.2.1.2 Learner-to-learner interaction

Learner-to-learner interaction is an encounter where learners interact on-line with each other. The results of this study have indicated that on-line learners are isolated and bored because they do not see each other. Isolation can be alleviated by interacting specifically on-line.

Although 100% of learners own cell phones, they do not use it for teaching and learning 34.9%. The majority of the learners 61.6% do not communicate at all with peers by using emails and myUnisa. Learning involves more than an individual person trying to make sense of the world in isolation. It extends beyond that. The social situation is of importance too (Quay 2003:116).

Learners are encouraged by the university to interact on-line by utilising the discussion forum. The discussion forum is one of the interactive tools which is utilised by the learners to communicate with each other, educator, study material and the institution. By utilising the discussion forum learners can share academic knowledge and form study groups to alleviate both social and academic isolation.

According to Vygotsky (1978:56-57), social constructivism suggests that learners be actively involved in a joint enterprise with fellow learners in creating new meanings of their experiences.

The results as indicated in myUnisa discussion forum revealed that learners invited each other to form study groups but, there was no response. Social constructivism, according to Quintana (2005:6), further notes the importance of two major types of social interaction in learning, engaging in dialogue with others and gaining assistance from others. It is unfortunate that the other learners such as those living in rural areas do not have Internet connection in their areas thus leading to minimal or no interaction at all. These unfortunate learners have to travel for a distance from their residential areas in order to be connected.

In response to the question, the nature of on-line interaction between the learners and other learners, the interaction was revealed to be vague. It is worse if one is the first-time user and is poor in using on-line interactive tools as most learners are not familiar

with computers. Dixon, Dixon and Axmann (2008:261), in the study of on-line centered discussions, reported the complex nature of on-line interaction and its interpretation appears to have surprised the participants especially with regard to the demand it made on them and the variability of the experience. On-line discussion forums were very demanding in time and effort to effectively frame the conversation.

The creation of a discussion forum to encourage student interaction whilst undertaking studies on-line has become a challenge as increasingly sophisticated learning management systems begin to pervade higher education.

Many universities are increasingly transferring courses and programs on-line at both graduate and undergraduate level into fully interactive environment (Dixon, Dixon & Axmann 2008:256, 258). Unisa is also not lagging behind. Although it seems the issue of learners' computer literacy was not taken into consideration. A learner indicated that their children and spouse assist them to access the discussion forum.

In this study indication has been given that almost 40% of the learners which is the majority on this category agree on the allowance of discussion forum to study with peers although only 30.1% are good in using it. The study on the changing nature of universities going on-line concurs with the findings of this study. Indication was given that successful students check into their courses several times each week. They set aside particular times that they will dedicate to work on the course. Self directed learners will find on-line learning a rewarding experience. They no longer need to be fortunate enough to live near a university that offers a course in their preferred model of education. Well designed on-line courses can furnish adult learners with more control over the learning process. The simulation of case-based courses is popular and promotes authentic learning. Case based courses can also include reflection through discussion posts. Students can work alone or in groups as they investigate their case study (Siegle 2010:58).

However, the literature indicates that the conventional approach to on-line discussion, asking probing questions does not necessarily advance the discussion through the phases of cognitive presence, triggering events, exploration, integration and resolution which are crucial for deep knowledge construction as indicated by the study on

cognitive presence in asynchronous on-line learning by (Darabi, Arrastia, Nelson, Cornille & Liang 2011:216).

A study by Barbera and Linder-VanBerschot (2011:169-170) indicate that the on-line educator must be resourceful in guiding students through the learning process, as well as leading them to other people who can provide support such as the university technical support team with the aim of positively influencing the student's on-line learning experience.

The learners' 20% indicated that educators do not support them when interacting on-line. The educators should emphasise to the learners the importance of using on-line activities and how to access and participate in myUnisa. They should socialise them to the system. Educators should send questions and other activities on-line for student to respond and this should be done to all modules. They must also interact on-line to motivate the learners. When the discussion forum is quiet the educator should intervene and ask students why are they quiet. An educator has the right to have access to the discussion forum even if the discussion is between learners. To concur with the recommendation of socialising the learners to the system, Alvarez, Guasch and Espasa (2009:332) indicated that, social role of the educator includes behaviour related to influencing students' relationships with educators and with other students. Social role tasks include managing cooperative interactions among students. This could be done through its synchronous activities such as live lessons exchange of didactical methodologies between educators and communication in the virtual environment.

The minority of the learners 33% indicated that peers supported them when interacting on-line. The findings indicate that learners also need support from the educators and the institution. According to Moore and Kearsley (2012:182), institutional learner support involves administrators. Administrators must also step in to assist learners with technological problems like ensuring that the system must not be off-line during peak times such as during assignment submission and registration.

However, the challenge of the utilisation, as was reported by Osang, Tsuma and Ngole (2013:6) in their study, is acceptability and readiness to determine success and usage of the technology for teaching and learning. Most studies revealed that the students are not necessarily ready to fully move into the mobile space for their course work. They are

usually on the net, for social networking, listening to music, on-line charting and other social networking activities (Osang et al 2013:12). According to Tsai (2011:506), initiation is regarded as teacher's help and effort to establish learners' essential knowledge and develop basic skills in the initial stage of the course.

6.2.1.3 Learner-to-study material interaction

In order for the effective learning to take place the learners must interact with the study material to search for information. Only 36.9% of the learners access the study material monthly through myUnisa. The emphasis of computer skills is indicated because without these skills the challenges of accessing on-line interactive tools will prevail. The findings indicated that the learners' were frustrated because of the delay of getting study materials after registration. There were no study materials on-line. Their concern was that this delay will lead to late submission of assignments. Late submissions of assignments result in a penalty from the educators. It was indicated that the tutorial letter for general information about the module is not detailed enough.

It is suggested that if it can have some benefits to students when interacting on-line. The prescribed books edition which is indicated in the tutorial letter was not found at the bookshop. This makes learners to panic as it takes time to enquire about study materials that should be made available on-line. All updates should be communicated to the learners on-line for example the closing date for registration. The loading of information on learners', profile is of importance, so that the educators are also aware of what is happening for instance in the registration department. The details of all modules should also appear on myUnisa. It is recommended that samples of essay type examination should be provided. Irrespective of the recommendations some learners indicated that they are satisfied with on-line interactive tools to learner-to-module (study material) interaction.

6.2.2 Benefits of on-line interactivity

Learners indicated that they benefit from on-line interaction because they learn at their own pace. It saves time of going to the post-office to post assignment. It is also convenient to post an assignment on-line. Carlson and Jesseman (2011:125) add that another benefit relates to more interaction between students than in traditional face-to-

face class rooms, as on-line courses provide both synchronous and asynchronous modes of learner communication.

Furthermore, on-line interaction creates confidence to the learners that they are able to use interactive technological tools. The technologically acquired skills will also prepare them for use in their own work environments. There is safety and confidentiality in utilising myUnisa because students have passwords for its accessibility. Students have an opportunity to interact through the discussion forum with the educator and other peers. They can even form study groups on-line to share their learning experiences.

6.2.3 Challenges of on-line interactivity

Participant indicated that they felt comfortable to interact on-line, while others were not. With regard to learners' discomfort engendered by uncertainty over the security of their information, Chao (2009:77, 336) proposes that the learning management system should include tools for enforcing security measures and managing users' access. In order to counteract this threat, it is proposed that more security measures be developed and instituted to protect sensitive information on the network against hacker attacks.

On-line students do not necessarily need to be technology experts, but they should be comfortable finding and exchanging information on-line. Technology experts should be aware of, and accept technology failures and also be creative and flexible in developing alternative means if technology goes awry (Siegle 2010:58).

The creation of a discussion forum to encourage student interaction has become a challenge as increasingly sophisticated learning management systems begin to pervade higher education. Many universities both in Australia and other countries are increasingly transferring courses and programmes on-line at both graduate and undergraduate levels into fully interactive environments (Dixon, Dixon & Axmann 2008:256, 258). Most comforting is the fact that Unisa is not lagging behind in this regard. Discussion forums are some of the most commonly used interactive tools used by learners to communicate with each other, their educators, their study materials, and the ODL institution.

In this study, almost 40% of the learners – which is a low percentage and a concern to the researcher – agreed that the discussion forum allows them to study and interact with their peers. A more serious concern was brought to the fore in the form of only 53 registered second and third HMS learners in the first year – from a total of 1379 – actually participated in the discussion forum. Contrarily, Siegle (2010:58), in a study on the changing nature of universities going on-line, differs with the findings of this study. The findings of Siegle's study indicated that successful students check into their courses several times each week. They set aside particular times that they will dedicate to working on the course on-line.

Self-directed learners will find on-line learning a rewarding experience. They no longer need to be fortunate enough to live near a university that offers an on-line course. Well-designed on-line courses can furnish adult learners with more control over the learning process. The simulation of case-based courses is popular and promotes authentic learning. Case-based courses can also include reflection through discussion posts. Students can work alone, or in groups as they investigate their case study. However, the literature indicates that the conventional approach to on-line discussion by asking probing questions does not necessarily advance the discussion through the phases of cognitive presence, triggering events, exploration, integration and resolution – all of which are crucial for deep knowledge construction as indicated by the study on cognitive presence in asynchronous on-line learning by (Darabi et al 2011:216).

Video conferencing is a theme which emerged during discussions with participants. It was rather unfortunate that other learners could not attend some or all video conferences due to time and distance constraints. The learners raised their frustrating concerns with intermittently disruptive network disconnections to video conferences at their regional campuses.

6.3 RECOMMENDATIONS

In developing the recommendations, the researcher was guided by the findings of this study based on the collected data and its resultant analysis and interpretation. The proposed recommendations are important, and serve to contribute towards a better understanding of learners' on-line interactivity in ODL institutions. The findings of this study yielded potential to be used for policy influencing and planning of enhanced and

effective utilisation of on-line interactive tools in a distant learning environment. A possible resolution of the challenges identified by the learners with the addition of action plans by the researcher is addressed by the following recommendations.

6.3.1 Recommendations addressing the practice of on-line interactivity in ODL institutions

The following recommendations are specific to the practice of on-line interactivity in ODL institutions, and are premised on the scientifically achieved findings. They are comprised of recommendations to ODL institutions, educators and administrators/ICT specialists.

6.3.1.1 ODL institutions

- The management of ODL institutions should take the lead in a collaborative approach intended to overcome the challenges experienced by the learners. The collaborative approach should include the ODL institution's top management, the government sector, the broader community, various Unisa academic departments being the Institute of Open and Distance Learning, curriculum development, learner support, as well as representatives of the learners, educators and the representatives from the Information Communication Technology (ICT) Department at Unisa.
- Awareness on, and availability of various on-line interactive tools should be made frequently to the learners. This awareness should be embarked on by marketing Unisa on social media and mainstream TV channels. Such marketing strategies will help prepare students who plan to register at Unisa, so that they are aware of Unisa's expectations of learners' on-line interaction before they even register.

- Accessibility to on-line interactive tools demands that learner should own, or have access to a computer or smart phone with Internet connectivity. Unfortunately, there are areas which do not have Internet facilities due to infrastructural or geographic reasons. Since universities do collaborate with the government sector, especially the Department of Higher Education and the Department of Basic Education, they should work as a team to resolve the problem of many learners becoming computer literate much later in their educational progression.

- ODL institutions cater mainly for the majority of adult learners who occupy multiple roles and are not so computer literate. Training on the usage of on-line interactive tools should be considered by ODL institutions.
- The universities should made provision for email addresses and telephone numbers of IT specialists for the learners to call when problems are encountered.
- Future recommendations include that distance education learners should be encouraged to own smart phones for asynchronous accessibility of on-line learning tools.
- Video conferencing should be extended to international and neighbouring SADC countries to accommodate the majority of the non-resident learners.
- ODL institutions should introduce a system according to which all multiple choice questions are to be responded to on-line, in order to encourage more learner utilisation of on-line interactive tools.
- There should be enough and competent information technology specialists at these centres. The computer lab should not be closed at lunch hours because some learners' utilises that time to rush to the lab.
- Unisa should notify the learners in advance if the network will be temporarily unavailable due to service requirements.
- The network servicing times should not happen during peak times – such as when the results are to be released as this sometimes delays the learners' registration for the next semester.

6.3.1.2 Educators

- Educators should be advocates of the learners insofar as presenting academic challenges such as little or no feedback and educators'; that is to say, educators should discuss with top management on behalf of the learners.

- Educators should be made aware, consulted and up-dated regarding the changes or addition of on-line interactive tools.

- Regular evaluation should be done by ICT Department to check if educators are feeling comfortable with the utilisation of on-line interactive tools and the challenges they are encountering.

6.3.1.3 Administrators/ICT specialists

- IT specialists and educators should become ‘guardians’ and motivators of learners to interact on-line. In order to do that, they should be self-motivated in using the on-line interactive tools themselves and should update themselves through continuous re-training of the usage of emerging technological tools.
- Computer labs at ODL institutions should be in functioning order at all times. Efficient IT specialists should be available in the computer labs at all times.
- Technology changes from time to time. The use of chat rooms is recommended, in order for learners to update each other on these non-static technological developments.
- A special Web Site should be created for each department and be managed by the particular department. Learners’ on-line queries should be addressed both intra-departmentally and inter-departmentally. There should be information technology specialist based in the different departments to assist learners and educators when they do encounter problems relating to accessibility of on-line interactive tools.

6.3.2 Recommendations for further research

The following recommendations in this category relate specifically to further investigations on the complex subject of prospects and challenges of on-line teaching and learning, with HSM learners as the focal point.

Different academic departments of Unisa are encouraged to conduct on-line surveys regarding the views of academics and learners on the utilisation and improvement of on-line interactive tools. The efficacy and sustainability of mobile phones as instruments of learning and teaching by educators and students alike should be further investigated. Is such a mode a viable service feature in the future regarding teaching and learning? Serious consideration should be given to further research on the views of physically challenged learners regarding the use of on-line interactive tools in an ODL environment.

6.4 CONTRIBUTION OF THE STUDY

This study is of significance to all ODL institutions in the light of the learners' experiences; the various on-line benefits and challenges; as well as the proposed recommendations – all of which is a collective contribution to the corpus of empirically and theoretically obtained knowledge in respect of the research topic;

Based on some of the recommendations, this study is of value to the ODL institution itself, as it sheds light on the internal on-line teaching and learning environment – which is the basis for developing an externally much improved image of its staff's capabilities, the academic content of courses, and administrative viability of student registration and other related aspects; The recommendations of the study will further benefit the future application of on-line interactivity in ODL institutions.

The study provides a student-centric approach on the research topic, which enhances an understanding of the various research variables from students' perspectives.

6.5 LIMITATIONS OF THE STUDY

The study was confined to second and third year HSM students at only one Open Distance Learning institution. The findings might therefore be relevant only to that particular research milieu.

For reason cited above, the findings may defeat their transferability and generalisability to other research settings.

Whereas the focus was only on second and third year distance learning HSM students, the experiences of all other HSM students would have shed a richer and broader perspective of the findings.

During focus group interviews, the researcher was multi-tasking – taking fields notes, observing verbal cues, interviewing and listening simultaneously – which was not easy as some verbal cues might have been missed when writing field notes, thereby increasing the margin of error on the part of the researcher.

6.6 CONCLUSION

The aim of this study was to explore the extent to which the on-line interactivity mode of teaching and learning is utilised by the HSM learners in an open distance learning institution. The motivation for such an exploration is premised on the intention towards a better understanding of learners' on-line interactivity in ODL institutions.

The objectives of this study have been addressed, and the research questions were effectively responded to. Learners do encounter major challenges, which have academic, technological, institutional, and administrative ramifications and warrant concomitant resolution and support.

Learners who are located in rural areas and outside South Africa do not benefit much from on-line interactivity due to challenges of poor connectivity and inaccessibility to some of the interactive tools.

Challenges of learners' lack of sufficient on-line time and below-average computer literacy were observed. Educators' delays in responding to the learners' queries also frustrated the learners, the majority of whom do under-utilise on-line interactive tools with their fellow learners and educators, study materials, and ODL institution.

The viability and relevance (contribution) of this study, in spite of its limitations, are measures of considerable magnitude in the dual helix of technology and education.

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ANNEXURE A

UNISA ETHICAL CLEARANCE CERTIFICATE

UNISA

UNIVERSITY OF SOUTH AFRICA
Health Studies Higher Degrees Committee
(HSHDC)
College of Human Sciences
ETHICAL CLEARANCE CERTIFICATE

Date of meeting: 26 May 2011 Project No: 0567-237-6

Project Title: On-line learning among health studies' students at an open distance learning institution: Prospects and challenges for interactivity.

Researcher: Kefiloe Adolphina Maboe

Degree: DLITT et Phil Code: DPCHS04

Supervisor: Prof ON Makhubela-Nkondo
Qualification: DLITT et Phil
Joint Supervisor: Dr BL Dolamo and Dr ME Makoe

DECISION OF COMMITTEE

Approved [√] **Conditionally Approved** [ ]

Prof E Potgieter
RESEARCH COORDINATOR

Prof MC Bezuidenhout
ACADEMIC CHAIRPERSON: DEPARTMENT OF HEALTH STUDIES

PLEASE QUOTE THE PROJECT NUMBER IN ALL ENQUIRIES

ANNEXURE B

LETTER OF REQUEST FOR PERMISSION TO CONDUCT THE STUDY

Request for permission to conduct the research

Mrs K.A. Maboe
Department of Health studies
University of South Africa
TvW 7 – 174
012-4292393
maboeka@unisa.ac.za

Professor MC Bezuidenhout
Chair of theDepartment of Health Studies
University of South Africa

Dear Professor Bezuidenhout

DOCTORAL THESIS TITLE RESEARCH PROJECT: ON-LINE LEARNING AMONG HEALTH STUDIES' STUDENTS AT AN OPEN DISTANCE LEARNING INSTITUTION: PROSPECTS AND CHALLENGES FOR INTERACTIVITY

This letter serves to request for your permission to conduct a research project. This will involve students who are registered for the 2nd and 3rd year Health Services Management modules with the Department of Health Studies at UNISA.

The study will be conducted both on-line and face-to-face. A questionnaire will be utilised as an on-line mode of data collection. The latter will constitute the first phase of this study. For face-to-face empirical data collection, the researcher will personally administer the questionnaire to the respondents during the Health Services Management practicals. This will be the second phase of data collection. The practicals will be conducted in six (6) provinces around the country. This opportunity will also be used for focus group interviews with a target group of between five and ten participants. Focus group interviews will form the third phase of data collection. For both on-line and face-to-face data collection, the number of respondents is envisaged to be more than one-hundred and fifty (150).

The respondents who participated on-line will be requested not to participate during the face-to-face data collection phase in order to avoid duplication of the findings.

The research will not be invasive; intrusive, neither will it disrupt the students' academic programme nor cause any harm. I will appreciate it very much if you could support my request at your earliest opportunity.

My supervisors are Professor ZZ Nkosi, Professor ME Makoe and BL Dolamo.

Kindly receive the attached research proposal, ethical clearance certificate and research instrument. Thanking you in advance.

Sincerely

K.A. Maboe (Mrs.)
Staff number 90167694
Student number 0567-237-6
Doctoral candidate and researcher

ANNEXURE C: LETTER OF APPROVAL FOR CONDUCTING THE STUDY

UNISA university of south africa

DEPARTMENT OF HEALTH STUDIES

Mrs K A Maboe
Department of Health Studies
University of South Africa
TvW 7-174

Prof M C Bezuidenhout
Tel (012) 429-6369
Fax (012) 429-6688
18 June 2011

Dear Mrs Maboe

DOCTORAL STUDIES

Entitled

ON-LINE LEARNING AMONG HEALTH STUDIES' STUDENTS AT AN OPEN DISTANCE LEARNING INSTITUTION: PROSPECTS AND CHALLENGES FOR INTERACTIVITY

Your undated, written request for permission in view of utilising the Health Services Management students as your participants, has reference.

Your research addresses an important facet of *Open Distance Learning* and the results could be well utilised in the Department's quest for greater interactivity with our students. Your request to utilise the Health Services Management students is supported with the proviso that informed consent be acquired from the participants and that the data collection process (by means of the questionnaire and focus groups) during the practica sessions in six different provinces, be conducted after normal class times.

Best wishes with your research project.

Yours sincerely

MC Bezuidenhout

Prof M C Bezuidenhout

Academic Chairperson: Department of Health Studies

University of South Africa
Preller Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
www.unisa.ac.za

ANNEXURE D: INFORMED CONSENT

Informed consent

My name is Kefiloe Adolphina Maboe. I am a educator in the Department of Health Studies at the University of South Africa (UNISA). I am conducting a research project to determine the implications of learners' utilisation of on-line interactivity tools like myUnisa at an ODL environment, and to determine the learners' on-line interaction an ODL with each other, with their educators, with their study materials, and with their ODL institution.

I would very much appreciate your participation in this research project; as it will benefit you, other learners, the educators and the open distance learning institution concerned. If you grant permission for your participation in the research project, I give surety that the data will be collected and maintained with integrity, confidentiality, and anonymity. Your name will not appear on the questionnaire. Furthermore, your response will not be linked to any identifier. This study is neither an invasive nor an intrusive means that will cause any harm to you. As a respondent, you are entitled to full rights, namely:

i) The right to be informed - you should know the risks (if they exist) and benefits of the research project ;
ii) The right to refuse – if you are reluctant or feel uncomfortable, you may refuse to participate in the study;
iii) Conditional participation – if you agree to participate, give honest answers;
iv) Withdrawal – if at any stage you feel uneasy, you can still withdraw irrespective of your signing this informed consent form;

On the proviso that the respondent agrees then tick Yes (1) and continue.
If No (2), then stop.
Result code: 1. Completed 2. Refused 3. Partial 4. Other
Verbal consent _____
Interviewer name _____
Signature _____
Witness
Name _____
Signature _____
Date _____

ANNEXURE E

INTERVIEW GUIDE

Interview guide (for focus group interview)

1 Please describe in your own words what you perceive as:

1.1: On-line interactivity . . . . . .

1.2: ODL . . . . . .

2. Do you feel comfortable to interact online?
3 How often do you participate in online discussion forums with other students, educator, study material and UNISA
To what extent do you interaction with other students

4 How do you view online interactivity at UNISA. Are you benefitting from it?
5 How do you view the importance of interacting online regarding learner to learner, learner to instructor and learners –to content and learner to ODL institution

6 How do you feel when you interact online with peers and educators and ODL institution but you do not get the response?

7 How do you feel if one of your peers dominate the discussion

8 Since you are an ODL environment learner which method do you prefer of interacting online at UNISA
9 Do you have any new methods in mind of interacting online in an ODL institution?
10 Does online interactivity add value to your learning process?
11 Do you feel challenged to interact online? Please indicate those challenges

12 How can the tutor/educator and Unisa support/ motivate/encourage you in using online interactive tools?

13 Can you describe how online interactive tools be improved to enhance interaction in teaching and learning?
14 Are there strengths, weaknesses, opportunities and threats (SWOT) of interacting online?.

Strengths . . . . . .

Weaknesses . . . . . .

Opportunities . . . . . .

Threats . . . . . .

14 How can Unisa improve online interaction tools in order to enhance

Learner-to-learner interaction . . . . . .

Learner-to-tutor/educator interaction . . . . . .

Learner-to-module study material interaction . . . . . .

Learner-to-Unisa interaction . . . . . .

15 Are you satisfied with the current nature (discussion forum) of online interactivity which is utilised at UNISA

ANNEXURE F

ON-LINE DATA COLLECTION INSTRUMENT-QUESTIONNAIRE

On-line data collection instrument-questionnaire

Question 1 True False - 0.0 points Remove | Edit

Hi, my name is Kefiloe Maboe. I am a educator of Health Services Management in the Department of Health Studies at the University of South Africa. Those learners who are interacting on-line through the utilisation of emails and myUinsa tools, can you kindly further assist me in collecting information in the utilisation of the indicated interactive tools. The data will be collected with integrity. Confidentiality and anonymity will be maintained. Your name will not appear on the questionnaire. Your response will not be linked to any identifier. This study is neither an invasive nor an intrusive means that will cause harm to you. You can choose to withdraw at any stage of participating if you feel uneasy.

This questionnaire will take you 20 to 30 minutes to complete. Please submit the completed questionnaire on or before the 15th of October 2012. I thank you in advance for participating to this study.

Please indicate TRUE if you do not mind being part of the study!

If you do not want to form part of the study select FALSE and then please do not answer any further questions in this survey.

- (•) True
- ( ) False

Answer Key: True

Insert New Question select a question type

Part 2 Demographics - 11 questions Copy to Pool | Remove | Edit

Question 1 Single Correct - 0.0 points Remove | Edit

Please indicate your GENDER

- (•) A. Male
- ( ) B. Female

Answer Key: A

Insert New Question select a question type

Question 2 Single Correct - 0.0 points Remove | Edit

Please indicate your age group in years.

- (•) A. Less than 21
- ( ) B. 21 - 29
- ( ) C. 30 - 39
- ( ) D. 40 - 49
- ( ) E. Over 50

Answer Key: A

Insert New Question select a question type

Question 3 Single Correct - 0.0 points Remove | Edit

Please indicate your Marital Status

- A. Married
- B. Single
- C. Widowed
- D. Other

Answer Key: A

Insert New Question select a question type

Question 4 Single Correct - 0.0 points Remove | Edit

Level of study in Health Services Management at Unisa?

- A. Second year
- B. Third year

Answer Key: A

Insert New Question select a question type

Question 5 Single Correct - 0.0 points Remove | Edit

Please indicate country of birth.

- A. South Africa
- B. Africa
- C. Other

Answer Key: A

Insert New Question select a question type

Question 6 Single Correct - 0.0 points Remove | Edit

If born in South Africa, indicate which province?

- A. EC
- B. FS
- C. GP
- D. KZN
- E. LP
- F. MP
- G. NC
- H. NW
- I. WC

Answer Key: A

Insert New Question select a question type

Question 7 Single Correct - 0.0 points Remove | Edit

Country in which you registered for the Health Services Management studies at Unisa?

- A. South Africa
- B. Africa
- C. Other

Answer Key: A

Insert New Question select a question type

Question 8 Single Correct - 0.0 points Remove | Edit

If registered in South Africa, indicate which province?

- A. EC
- B. FS
- C. GP
- D. KZN
- E. LP
- F. MP
- G. NC
- H. NW
- I. WC

Answer Key: A

Insert New Question select a question type

Question 9 Single Correct - 0.0 points Remove | Edit

Please indicate your RESIDENTIAL AREA

- A. Urban
- B. Semi Urban
- C. Rural

Answer Key: A

Insert New Question select a question type

Question 10 Single Correct - 0.0 points Remove | Edit

Mother language?

- A. Vernacular
- B. English
- C. Afrikaans
- D. Other

Answer Key: A

Insert New Question select a question type

Question 11 Single Correct - 0.0 points Remove | Edit

Race?

- A. Black
- B. White
- C. Coloured
- D. Indian
- E. Other

Answer Key: A

Insert New Question select a question type

Part 3 On-line Interactivity in ODL Environment - 58 questions Copy to Pool | Remove | Edit

Question 1 True False - 0.0 points Remove | Edit

Do you own a Computer?

- True
- False

Answer Key: True

Insert New Question select a question type

Question 2 True False - 0.0 points Remove | Edit

Do you own a Cell phone?

- True
- False

Answer Key: True

Insert New Question select a question type

Question 3 Single Correct - 0.0 points Remove | Edit

How often do you use E-mail with PEERS. Please rate yourself by indicating your response.

- A. Daily
- B. Weekly
- C. Bi-weekly
- D. Monthly
- E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 4 Single Correct - 0.0 points Remove | Edit

How often do you use E-mail with EDUCATORS. Please rate yourself by indicating your response.

- A. Daily

B. Weekly

C. Bi-weekly

D. Monthly

E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 5 Single Correct - 0.0 points Remove | Edit

How often do you use E-mail to communicate with UNISA. Please rate yourself by indicating your response.

A. Daily

B. Weekly

C. Bi-weekly

D. Monthly

E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 6 Single Correct - 0.0 points Remove | Edit

How often do you use INTERNET to search for information. Please rate yourself by indicating your response.

A. Daily

B. Weekly

C. Bi-weekly

D. Monthly

E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 7 Single Correct - 0.0 points Remove | Edit

How often do you use myUnisa to communicate ADMINISTRATIVE issues with UNISA. Please rate yourself by indicating your response.

A. Daily

B. Weekly

C. Bi-weekly

D. Monthly

E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 8 Single Correct - 0.0 points Remove | Edit

How often do you use myUnisa to communicate with EDUCATORS. Please rate yourself by indicating your

response.

- A. Daily
- B. Weekly
- C. Bi-weekly
- D. Monthly
- E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 9 Single Correct - 0.0 points Remove | Edit

How often do you use myUnisa to communicate with PEERS. Please rate yourself by indicating your response.

- A. Daily
- B. Weekly
- C. Bi-weekly
- D. Monthly
- E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 10 Single Correct - 0.0 points Remove | Edit

How often do you use MULTIMEDIA for learning. e.g Self help training packages.

- A. Daily
- B. Weekly
- C. Bi-weekly
- D. Monthly
- E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 11 Single Correct - 0.0 points Remove | Edit

How often do you use MULTIMEDIA in myUnisa. Please rate yourself by indicating your response.

- A. Daily
- B. Weekly
- C. Bi-weekly
- D. Monthly
- E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 12 Single Correct - 0.0 points Remove | Edit

How often do you use a Cell phone to communicate with UNISA. Please rate yourself by indicating your response.

- A. Daily
- B. Weekly
- C. Bi-weekly
- D. Monthly
- E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 13 Single Correct - 0.0 points Remove | Edit

How often do you use a Cell Phone to communicate with EDUCATORS. Please rate yourself by indicating your response.

- A. Daily
- B. Weekly
- C. Bi-weekly
- D. Monthly
- E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 14 Single Correct - 0.0 points Remove | Edit

How often do you use a Cell phone to communicate with PEERS. Please rate yourself by indicating your response.

- A. Daily
- B. Weekly
- C. Bi-weekly
- D. Monthly
- E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 15 Single Correct - 0.0 points Remove | Edit

How often do you use Video conference with EDUCATORS. Please rate yourself by indicating your response.

- A. Daily
- B. Weekly
- C. Bi-weekly
- D. Monthly
- E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 16 Single Correct - 0.0 points Remove | Edit

How often do you use Video Conference with PEERS. Please rate yourself by indicating your response.

- A. Daily
- B. Weekly
- C. Bi-weekly
- D. Monthly
- E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 17 Single Correct - 0.0 points Remove | Edit

How often do you use Video Conference with UNISA. Please rate yourself by indicating your response.

- A. Daily
- B. Weekly
- C. Bi-weekly
- D. Monthly
- E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 18 Single Correct - 0.0 points Remove | Edit

How often do you read myUnisa ANNOUNCEMENTS. Please rate yourself by indicating your response.

- A. Daily
- B. Weekly
- C. Bi-weekly
- D. Monthly
- E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 19 Single Correct - 0.0 points Remove | Edit

How often do you use the DISCUSSION FORUM in myUnisa. Please rate yourself by indicating your response.

- A. Daily
- B. Weekly
- C. Bi-weekly
- D. Monthly
- E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 20 Single Correct - 0.0 points Remove | Edit

How often do you use SELF ASSESSMENTS in myUnisa. Please rate yourself by indicating your response.

- A. Daily
- B. Weekly
- C. Bi-weekly
- D. Monthly
- E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 21 Single Correct - 0.0 points Remove | Edit

How often do you look for STUDY MATERIALS on myUnisa. Please rate yourself by indicating your response.

- A. Daily
- B. Weekly
- C. Bi-weekly
- D. Monthly
- E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 22 Single Correct - 0.0 points Remove | Edit

How often do you submit ASSIGNMENTS via myUnisa. Please rate yourself by indicating your response.

- A. Daily
- B. Weekly
- C. Bi-weekly
- D. Monthly
- E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 23 Single Correct - 0.0 points Remove | Edit

How often do you use SCHEDULES on myUnisa. Please rate yourself by indicating your response.

- A. Daily
- B. Weekly
- C. Bi-weekly
- D. Monthly

E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 24 Single Correct - 0.0 points Remove | Edit

How often do you use ADDITIONAL RESOURCES provided on myUnisa. Please rate yourself by indicating your response.

A. Daily

B. Weekly

C. Bi-weekly

D. Monthly

E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 25 Single Correct - 0.0 points Remove | Edit

How often do you view PODCASTS on myUnisa.

A. Daily

B. Weekly

C. Bi-weekly

D. Monthly

E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 26 Single Correct - 0.0 points Remove | Edit

How often do you view FREQUENTLY ASKED QUESTIONS (FAQ's) on myUnisa

A. Daily

B. Weekly

C. Bi-weekly

D. Monthly

E. Not at ALL

Answer Key: A

Insert New Question select a question type

Question 27 Single Correct - 0.0 points Remove | Edit

How good are you at using a COMPUTER?

Please indicate your response by selecting the most appropiate option.

A. Excellent

B. Very Good

C. Good

D. Poor

Answer Key: A

Insert New Question select a question type

Question 28 Single Correct - 0.0 points Remove | Edit

How good are you at using E-mail?

Please indicate your response by selecting the most appropriate option.

A. Excellent

B. Very Good

C. Good

D. Poor

Answer Key: A

Insert New Question select a question type

Question 29 Single Correct - 0.0 points Remove | Edit

How good are you at using the INTERNET?

Please indicate your response by selecting the most appropriate option.

A. Excellent

B. Very Good

C. Good

D. Poor

Answer Key: A

Insert New Question select a question type

Question 30 Single Correct - 0.0 points Remove | Edit

How good are you at using myUnisa?

Please indicate your response by selecting the most appropriate option.

A. Excellent

B. Very Good

C. Good

D. Poor

Answer Key: A

Insert New Question select a question type

Question 31 Single Correct - 0.0 points Remove | Edit

How good are you at using MULTIMEDIA?

Please indicate your response by selecting the most appropriate option.

A. Excellent

B. Very Good

C. Good

D. Poor

Answer Key: A

Insert New Question select a question type

Question 32 Single Correct - 0.0 points Remove | Edit

How good are you at using a CELL PHONE?

Please indicate your response by selecting the most appropriate option.

A. Excellent

B. Very Good

C. Good

D. Poor

Answer Key: A

Insert New Question select a question type

Question 33 Single Correct - 0.0 points Remove | Edit

How good are you at using VIDEO CONFERENCE?

Please indicate your response by selecting the most appropriate option.

A. Excellent

B. Very Good

C. Good

D. Poor

Answer Key: A

Insert New Question select a question type

Question 34 Single Correct - 0.0 points Remove | Edit

How good are you at using or accessing the myUnisa tool: ANNOUNCEMENTS

A. Excellent

B. Very good

C. Good

D. Poor

Answer Key: A

Insert New Question select a question type

Question 35 Single Correct - 0.0 points Remove | Edit

How good are you at using or accessing the myUnisa tool: DISCUSSION FORUMS

A. Excellent

B. Very good

C. Good

D. Poor

Answer Key: A

Insert New Question select a question type

Question 36 Single Correct - 0.0 points Remove | Edit

How good are you at using or accessing the myUnisa tool: STUDY MATERIALS

A. Excellent

B. Very good

C. Good

D. Poor

Answer Key: A

Insert New Question select a question type

Question 37 Single Correct - 0.0 points Remove | Edit

How good are you at using or accessing the myUnisa tool: SELF ASSESSMENT exercises.

A. Excellent

B. Very good

C. Good

D. Poor

Answer Key: A

Insert New Question select a question type

Question 38 Single Correct - 0.0 points Remove | Edit

How good are you at using or accessing the myUnisa tool: MODULE ASSIGNMENTS

A. Excellent

B. Very good

C. Good

D. Poor

Answer Key: A

Insert New Question select a question type

Question 39 Single Correct - 0.0 points Remove | Edit

How good are you at using or accessing the myUnisa tool: SCHEDULE.

A. Excellent

B. Very good

C. Good

D. Poor

Answer Key: A

Insert New Question select a question type

Question 40 Single Correct - 0.0 points Remove | Edit

How good are you at using or accessing the myUnisa tool: ADDITIONAL RESOURCES

- A. Excellent
- B. Very good
- C. Good
- D. Poor

Answer Key: A

Insert New Question select a question type

Question 41 Single Correct - 0.0 points Remove | Edit

How good are you at using or accessing the myUnisa tool: PODCASTS

- A. Excellent
- B. Very good
- C. Good
- D. Poor

Answer Key: A

Insert New Question select a question type

Question 42 Single Correct - 0.0 points Remove | Edit

How good are you at using or accessing the myUnisa tool: FREQUENTLY ASKED QUESTIONS

- A. Excellent
- B. Very good
- C. Good
- D. Poor

Answer Key: A

Insert New Question select a question type

Question 43 Single Correct - 0.0 points Remove | Edit

Please indicate your level of agreement with the following statements:

On-line interactivity allows educators/educators and Unisa to be closer to the learners educational needs.

- A. Strongly agree
- B. Agree
- C. Disagree
- D. Strongly disagree
- E. Not sure

Answer Key: A

Insert New Question select a question type

Question 44 Single Correct - 0.0 points Remove | Edit

Please indicate your level of agreement with the following statements:

There are real-life experiences learners can cite regarding the effectiveness of on-line interaction tools..

- (•) A. Strongly agree
- ( ) B. Agree
- ( ) C. Disagree
- ( ) D. Strongly disagree
- ( ) E. Not sure

Answer Key: A

Insert New Question select a question type

Question 45 Single Correct - 0.0 points Remove | Edit

Please indicate your level of agreement with the following statements:

Educators/educators are readily available to solve problems related to teaching and learning

- (•) A. Strongly agree
- ( ) B. Agree
- ( ) C. Disagree
- ( ) D. Strongly disagree
- ( ) E. Not sure

Answer Key: A

Insert New Question select a question type

Question 46 Single Correct - 0.0 points Remove | Edit

Please indicate your level of agreement with the following statements:

On-line feedback on assignments are valuable.

- (•) A. Strongly agree
- ( ) B. Agree
- ( ) C. Disagree
- ( ) D. Strongly disagree
- ( ) E. Not sure

Answer Key: A

Insert New Question select a question type

Question 47 Single Correct - 0.0 points Remove | Edit

Please indicate your level of agreement with the following statements:

On-line discussion forum allows me to study with my peers.

A. Strongly agree

B. Agree

C. Disagree

D. Strongly disagree

E. Not sure

Answer Key: A

Insert New Question select a question type

Question 48 Single Correct - 0.0 points Remove | Edit

Please indicate your level of agreement with the following statements:

Computer skills is necessary for effective on-line interactivity.

A. Strongly agree

B. Agree

C. Disagree

D. Strongly disagree

E. Not sure

Answer Key: A

Insert New Question select a question type

Question 49 Single Correct - 0.0 points Remove | Edit

Please indicate your level of agreement with the following statements:

Receiving SMS from the Educators/Educators

A. Strongly agree

B. Agree

C. Disagree

D. Strongly disagree

E. Not sure

Answer Key: A

Insert New Question select a question type

Question 50 Single Correct - 0.0 points Remove | Edit

Who mostly gives you support when interacting on-line?

A. Peers

B. Educator/Educator

C. Information technology specialist

D. University

E. None

Answer Key: A

Insert New Question select a question type

Question 51 Short Answer/Essay - 0.0 points Remove | Edit

How can the educator/educator and UNISA support you in using on-line interactive tools?

Insert New Question select a question type

Question 52 Short Answer/Essay - 0.0 points Remove | Edit

How can UNISA improve on-line interaction tools in order to enhance learner to learner interaction?

Insert New Question select a question type

Question 53 Short Answer/Essay - 0.0 points Remove | Edit

How can UNISA improve on-line interaction tools in order to enhance learner to educator/educator interaction?

Insert New Question select a question type

Question 54 Short Answer/Essay - 0.0 points Remove | Edit

How can UNISA improve on-line interaction tools in order to enhance learner to module (study material) interaction?

Insert New Question select a question type

Question 55 Short Answer/Essay - 0.0 points Remove | Edit

How can UNISA improve on-line interaction tools in order to enhance learner to UNISA interaction?

Insert New Question select a question type

Question 56 Short Answer/Essay - 0.0 points Remove | Edit

How can on-line interactive tools be used to enhance teaching and learning

Insert New Question select a question type

Question 57 Short Answer/Essay - 0.0 points Remove | Edit

Determine the nature of on-line interaction between the learners and educator

Insert New Question select a question type

Question 58 Short Answer/Essay - 0.0 points Remove | Edit

Give general comments on the utilisation of myUnisa as an on-line interactive tool

Insert New Question select a question type

Update Points

ANNEXURE G

PROOF OF REMINDER FOR SUBMISSION OF ON-LINE QUESTIONNAIRE

Send Standard SMS - GCQ (Geographical area, Course or Qualification)

Select 'Back' to edit the previous criteria for a new batch of SMS messages, or select 'Cancel'.

SMS batch request number 82703 was processed successfully.

Academic Year	2012
Registration Period	2 : Second semester
Control Cell Numbers	+27824111048
Request Reason	2 : Learner Support
Message	You are kindly reminded to complete a questionnaire attached in self assessment of myUnisa on or before the 10.10.2012. KA MABOE
Registration Criteria	
Module Code(s)	HMA2601 : HUMAN RESOURCE MANAGEMENT IN HEALTH SERVICES
Geographical Criteria	
All	
Request Information	
Number of SMS messages	253
RC code	240000 . Health Studies
Cost per SMS	0.194
Total budget	9000.00
Available budget	4437.56
Total cost	49.08

Back Cancel

ANNEXURE H

PROOF OF PART OF RESULTS REPORT FROM STATISTICIAN

STATISTICIAN'S REPORT

SECTION A: DEMOGRAPHIC INFORMATION

Gender

Table 1: Distribution of the students by gender (n=86)

Gender	Frequency	Percent
Male	9	10.34
Female	78	89.66

Age

Table 2: Distribution of the students by age (n=87)

Age	Frequency	Percent
21-29	10	11.49
30-39	42	48.28
40-49	29	33.33
Over 50	6	6.90

Chi-Square Test for Equal Proportions Chi-Square 39.0230

DF 3

Pr > Chi Square <.0001

Sample Size = 87

Marital Status

Table 3: Distribution of the students by marital status (n=87)

Marital status	Frequency	Percent
Married	59	67.82
Single	22	25.29
Widowed	3	3.45
Other	3	3.35

Chi-Square Test

for Equal Proportions

Chi-Square 96.1264

DF 3

Pr > ChiSq <.0001

Sample Size = 87

Students' level of study

Table 4: Distribution of the students by level of study (n=85)

Level	Frequency	Percent
Second year	54	63.53
Third year	31	36.47

Effective Sample Size = 85
Frequency Missing = 2

Students by modules

Table 5: Distribution of the students by module (n=87)

Module	Frequency	Percent
HMA 2601	33	37.93
HMA 2602	23	26.44
HMA 3701	12	13.79
HMA 3702	19	21.84

Chi-Square Test

for Equal Proportions

Chi-Square 10.6092

DF 3

Pr > ChiSq 0.0140

Sample Size = 87

ANNEXURE I

PROOF OF myUNISA DISCUSSION FORUM INTERACTION

Return to Forums List Return to Topics List

General Subject Related Discussions : assignment 2

This list displays all the discussions added to this topic. If you want to start a **totally new discussion topic** use the "Add New Topic" link on the previous page.

You can reply to this topic by completing the form at the bottom of this page and then click on the submit button to post your message.

Viewing 1 - 8 of 8 item(s)

|< < Show 10 items > >|

Author	Message
N MPHOLLE	I really do not understand how I should handle and respond to the second question. Can anyone help! (2012-02-05 20:25)
E JOHANNES	Hi all I've done assignment but would like to know within how many pages the assignment is suppose to be done before I submit it? (2012-03-09 14:18)
E JOHANNES	Hi all I've done assignment but would like to know within how many pages the assignment is suppose to be done before I submit it? (2012-03-09 14:18)
E JOHANNES	Hi all I've done assignment but would like to know within how many pages the assignment is suppose to be done before I submit it? (2012-03-09 14:18)
E JOHANNES	Hi all I've done assignment but would like to know within how many pages the assignment is suppose to be done before I submit it? (2012-03-09 14:18)
P KEERTHY	Anybody want to discuss assignment 2 can email me at 48456101@mylife.unisa.ac.za Pam (2012-02-19 08:15)
P PORATHUR	@M.T Shangase, I know it is really frustrating..the modules are not reached???..hope you have access to the internet and then you are safe to get on myunisa to official study material!! but you are not late... (2012-02-16 20:18)
P KEERTHY	@ M Tshangase I guess one needs to register early. I registered in November and received all my materials in December. Go to official study material and download the study guide and tutorial letters instead of waiting and you can start with your assignment. Pam (2012-02-06 07:55)
M TSHANGASE	i havent received my modules as yet...m so frustrated becaused to submit assignments soon (2012-02-06 05:30)

Add Your Reply

Complete the form and then choose the Submit button at the bottom of the screen.

HMA 3701 MYUNISA DATA COLLECTION (3)20120509

General Subject Related Discussions : General Discussions

This list displays all the discussions added to this topic. If you want to start a **totally new discussion topic** use the "Add New Topic" link on the previous page.

You can reply to this topic by completing the form at the bottom of this page and then click on the submit button to post your message.

Viewing 1 - 10 of 18 item(s)

|< < Show 10 items > >|

Author	Message
myUnisa Administrator	Welcome to the General Discussions topic. In this topic you can correspond with your fellow class members on any issues regarding this course. Use the Your Message box below to add your message to the list. If you want to start a totally new topic of discussion, use the Add New Topic link which you will find in the Topics List. (2012-01-04 08:17)
PROF ZZ NKOSI	Dear All I wish you all the best in the exams. Please revist the assignment 02 and check comments on the marksheet. Take it easy on MCQ as you will be answering to 35 of them. Double check the key words in the essay questions. Prepare in advance and do not shy away from asking. Good luck Prof Nkosi (2012-05-09 07:43)
C FOURIE	Dear Mr Makua I am completing my preparation for the examination and would like clarification regarding the references in Booyens. I have the 2008 Introduction to healthcare management. What chapter must I concentrate on - Chapter 6 has nothing to do with financial management. Regards Colleen Fourie (2012-05-07 12:18)
N SCHOLTZ	Prof. Nkosi I am going over my assignments and noticed that the answers on the mark reading sheets for assignment 1 are different in the exam guide and online. according to this i have been marked wrong when it should have been correct. could you advise us which mark reading sheets we should be using and that is correct. Good luck to everyone for exams! Thank you (2012-05-07 07:55)
MR TP MAKUA	Hello Ladies and Gentlemen. we are almost at our May/June examinations. The question I want to ask you is: Why don't you ask

ANNEXURE J: LETTER OF PROOF OF EDITION FROM THE EDITOR

Date: 28 October 2013

Re: Proof of Editorial Services Rendered

I Dr TJ Mkhonto, editor of the academic exegesis referred to below, herewith attest to the truthfulness and correctness of the information herein under.

This letter therefore, serves as proof of services rendered in respect of comprehensive editorial/ language control, proof-reading, technical compliance, and research methodology adherence for the doctoral thesis of **Mrs KA Maboe** (UNISA Student Number: 5672376) whose title is **On-Line Learning Among Health Studies Students at an Open Distance Learning Institution: A Perspective on Interactivity**

Field of Study: Health Studies Management
Level of Study: D Litt et Phil

I declare that all of the above is true and correct to the best of my knowledge.

Sincerely

TJ Mkhonto (Dr)

ANNEXURE K

LETTER OF PROOF OF DATA ANALYSIS FROM STATISTICIAN

TO: Whom It May Concern

FROM: Prof P Ndlovu, Department of Statistics, Unisa

Re: Assistance given to Ms K Maboe in her research

I hereby confirm that I assisted Ms K Maboe in:

1. Questionnaire designing;
2. Data capturing using Excel; and
3. Data analysis and interpretation of the results.

ANNEXURE L

MAP SHOWING UNISA PROVINCES WHERE DATA WAS COLLECTED