AN INVESTIGATION OF THE EFFECTIVENESS OF TECHNOLOGY IN OPEN DISTANCE LEARNING: A CASE STUDY OF THE UNIVERSITY OF SOUTH AFRICA

by

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Exact wording of the title of this thesis as appearing on the electronic copy submitted for examination:

An investigation of the effectiveness of technology in ODL: A case study of the University of South Africa

I declare that the above thesis is my own work and that all the above sources that I have quoted have been indicated and acknowledged by means of complete references

30 November 2022

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Signature Date

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ABSTRACT

Distance education institutions gradually used technology to teach and interact with its diverse student body. University of South Africa (Unisa) has adopted Open Distance and E-learning (ODeL) model to reach students in remote geographical areas. As technology is gaining momentum, the digital divide is a challenge as students experience difficulties in accessing the Internet. The study reviewed the literature from recent sources including books, chapters in books, conference proceedings and journal articles focusing on the effectiveness of technology in ODeL. The study has adopted a qualitative research approach. The study has adopted community of inquiry framework to analyse data gathered from students studying through ODeL. The study used interpretive paradigm which postulates that reality is multi-layered, complex and single phenomenon that can have multiple interpretations. A qualitative research approach with a case study design method was deemed most appropriate for the study; hence, it is holistic in nature. The researcher used purposive sampling strategy to select 12 participants from two Unisa regional offices in the Eastern Cape Province. Semi-structured interviews were used to probe the participants about their perceptions and experiences in using technology. The collected data were analysed using thematic analysis which entails procedure of identifying themes within a qualitative data. The findings indicated that effective use of technology by the students improved communication, students performed better in assignments and did well in examinations and there is high success rate.

Key words: Distance learning; Online learning; Connectivism; Transactional distance; Open Distance and e-Learning; Community of Inquiry.

OPSOMMING

Afstandsonderriginstellings het geleidelik tegnologie begin gebruik om onderrig te gee en met hulle diverse studentekorps te kommunikeer. Universiteit van Suid-Afrika (UNISA) het Oopafstand- en E-leer-model (ODeL) aanvaar om studente in afgeleë geografiese gebiede te bereik. Soos tegnologie momentum kry, is die digitale kloof ’n uitdaging aangesien studente probleme ondervind om toegang tot die internet te verkry. Die studie het die literatuur uit onlangse bronne hersien, wat boeke, hoofstukke in boeke, konferensieverrigtinge en joernaalartikels insluit wat op die doeltreffendheid van tegnologie in ODeL fokus. Die studie het ’n kwalitatiewe navorsingsbenadering aanvaar. Die studie het interpretatiewe paradigma gebruik wat postuleer dat die werklikheid ’n veelvlakkige, komplekse en enkele verskynsel is wat veelvuldige interpretasies kan hê. ’n Kwalitatiewe navorsingsbenadering met ’n gevallestudie-ontwerpmetode is as die geskikste vir dié studie geag; daarom is dit holisties van aard. Die navorser het ’n doelgerigte steekproefnemingstrategie gebruik om 12 deelnemers uit twee UNISA-streekkantore in die Oos-Kaapprovinsie te kies. Semi-gestruktureerde onderhoude is gebruik om die deelnemers te ondervra oor hul persepsies en ervaring in die gebruik van tegnologie. Die versamelde data is ontleed met behulp van tematiese analise wat prosedures behels wat temas in kwalitatiewe data identifiseer. Die bevindinge het aangedui dat effektiewe gebruik van tegnologie deur die studente kommunikasie verbeter het, studente het beter presteer in werkopdragte en goed gevaar in eksamens, en daar is ’n hoë suksessyfer.

Sleutelwoorde: Afstandonderrig; Aanlynonderrig; Konnektiwiteit; Transaksionele afstand; Oopafstand- en E-leer; Gemeenskap van Ondersoek.

ISISHWANKATHELO

Amaziko Emfundo Yakude athe chu ukusebenzisa ubuxhakaxhaka bokufundisa nokunxibelelana nabafundi bawo abaziintlobo ngeentlobo. IDyunivesithi yoMzantsi Afrika (Unisa) isebenzisa indlela yokufunda kude nge-Intanethi ebizwa nge-Opheni Disistentsi andi E-leningi (ODeL) ukufikelela kubafundi abakwimimandla ethe qelele. Njengoko kusenyuka ukusetyenziswa kobuxhakaxhaka, iyantlukwano ngobugcisa bobuxhakaxhaka ngumceli mngeni kubafundi kuba kunzima ukungena kwi-Intanethi. Olu phando luye lwaphonononga uncwadi kwimithombo yolwazi yamva nje, efana neencwadi, izahluko ezithile kwiincwadi, iingxoxo zeenkomfa kunye neengxelo zamanqaku apapashiweyo ezijolise kwimpumelelo yokusebenza kobuxhakaxhaka kwi-ODeL. Olu phando lusebenzise indlela yokuqokelela ulwazi ngqo kubathathi-nxaxheba. Kwakhona uphando lusekelwe kwindlela yemfuna-lwazi ejolise kuluntu oluphandwayo, ukuhlalutya ulwazi oluqokelelwe kubafundi abafunda nge-ODeL. Olu phando lusebenzise umzekeliso wokuxela ulwazi onebango lokuba ubukho bento okanye ubunyaniso yinto eneenkalo ezininzi, entsokothileyo enokuthi itolikwe ngeendlela ezohlukeneyo. Indlela yokufuna ulwazi ngqo kubathathi-nxaxheba iyilwe ngokujonga umzekelo othile yaye ibonakale iyeyona ndlela efanele olu phando; njengoko, imo yayo igqibelele. Umphandi uye wasebenzisa iqhinga elijolise ukufumana abathathi-nxaxheba abali-12 abakule meko ngqo besuka kwii-ofisi ezimbini zase-Unisa ezikwiPhondo laseMpuma Koloni. Kuqhutywe iingxoxo nabathathi-nxaxheba ngendlela ebuza imibuzo evalekile naleyo engena nzulu ukuveza izimvo kunye namava abo okusebenzisa ubuxhakaxhaka. Ulwazi oluqokelelweyo luye lwahlalutywa ngokujonga imixholo esisikhokelo senkqubo yokuchonga imixholo equlathwe kwiinkcukacha eziqokelelweyo. Iziphumo zibonisa impumelelo ekusetyenzisweni kobuxhakaxhaka ngabafundi ngoba luye lwaphucuka unxibelelwano, abafundi baye basebenza ngcono kwizifundo zabo nakwiimviwo zabo, kwaye izinga lempumelelo liyancomeka.

Amagama Aphambili: Imfundo Yakude; Ukufunda nge-Intanethi; Uqhagamshelo; Umgama Wotshintshiselwano; Imfundo Yakude neyenziwa nge-Intanethi; Uluntu Oluphandwayo.

ACRONYMS

AI	Artificial intelligence
CD	Compact disk
CODel	Centre for open and e-learning
CoI	Community of Inquiry
CT	Computer technology
CTI	Computers in teaching initiative
DVD	Digital video disc
4IR	Fourth industrial revolution
ICT	Information and communication technology
IOT	Internet of things
LMS	Learning Management System
LTSN	Learning and teaching support network
MOOCS	Massive Open Online Courses
MOODLE	Modular Object-Oriented Dynamic Learning
NSFAS	National Student Financial Aid Scheme
ODL	ODL
ODeL	Open Distance and e-Learning
TV	Television
Unisa	University of South Africa

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CHAPTER 1: INTRODUCTION TO THE STUDY

1.1 INTRODUCTION

The study sought to investigate the effectiveness of technology in an Open Distance e-Learning (ODeL) context. The ODeL context chosen for the study was University of South Africa (Unisa). Chapter 1 gives an overview of the study by providing a detailed layout of the chapters which reflect on the key aspects of the study. It briefly provides the background to the problem and outlines the aims and objectives of the study. Chapter 1 also provides an overview of the literature reviewed and the Community of Inquiry as the theory that underpins the study. Research design and methodology, sampling strategy, population to be studied, research instrument that was employed to collect the data, and data analysis techniques are briefly discussed. Other aspects of research such as ethical considerations, definition of operational concepts and organisation of the thesis are discussed. Chapter summary is given at the end of this chapter.

1.2 BACKGROUND FOR THE STUDY

Globally, many higher learning institutions, including the distance learning institutions, use technology for teaching and learning. According to Perkin *et al.* (2021:3), the effective use of technology can improve students' performance if the technology is used more effectively in distance learning contexts. Technology helps to reduce the transactional distance between the online lecturers and the students in distance learning institutions. Unisa is one of the higher learning institutions using technology for effective teaching and learning. Currently, Unisa has adopted ODeL model for teaching and learning. ODeL presents a good opportunity for the students who cannot afford to enrol in full-time universities.

At Unisa, new technologies are used by the lecturers to interact with students who live in both urban and remote rural areas. The learning management system known as Moodle is used to support the students in doing various activities such as engaging with other learners in a discussion forum to access information from the online library, to submit their assignments and for administrative purposes. To interact with their teachers online, students need devices such computers, mobile phones or iPods. The students need data to access teaching and learning on the Learning Management System (LMS). Recently, to facilitate connectivity, Unisa has made a deal with the network provider company, MTN to distribute 30 gigabytes (GB) of data to all students enrolled in the university (Lekhetho, 2022:54). This means that students will have sufficient data to prepare for exams to search information and to submit assignments. Students who do not afford to register qualify to apply for National Student Financial Aid Scheme (NSFAS). The grant is allocated to South African citizens. The total combined household income should be less than R350 000. Students receiving NSFAS grant were also given laptops for study purposes (Ngubane-Mokiwa & Letseka 2015:129).

Ooko (2016: 8) posits that some of the renowned open universities in the world including the Open University in the United Kingdom, Korea National Open University, Open University in Japan and Walden University use new technologies to interact with students in remote areas. When these institutions started operating, they selected broadcast media, television and radio, as the mode of instruction. Universities including the Open University of Japan use WhatsApp to post students' learning activities. Students also form group discussion forums using WhatsApp and active participation of the members of the group to contribute to good performance of the students.

According to Hogan and Devi (2019:17), University of Athabasca is one of the leading universities when it comes to online learning. In this higher learning institution, students use new social networks including Instagram reels, Discord and Clubhouse to collaborate when working on project, conduct joint research, share and structure information and develop joint reports. The University of

Athabasca uses Blackboard for learning and teaching. In addition to Blackboard, students also use the App called Telegram to interact with the other learners in the discussion forums to promote online learning. Moreover, technology is used for the purpose of assessment. The LMS offers flexible learning. Moreover, there is student-to-teacher, student-to-student and student-to-content interaction.

Ooko (2016:15) posits that although Nazarene University in Kenya employs technology such as videoconferencing and e-learning platforms to impart knowledge to students enrolled in this distant learning institutions, the majority of students in the rural areas experience problems of connectivity. Students located in far geographical areas do not have an access of technology.

1.3 MOTIVATION FOR THE STUDY

Unisa is one of the leading ODeL institutions globally that uses e-learning to teach its students. The researcher is one of the e-tutors supporting the learners enrolled in this ODeL institution and has noticed that students in marginalised rural areas experienced infrastructural challenges when it comes to online learning. Students from rural areas find it difficult to access the internet and find it difficult to travel to study centres where there are computers owing to unemployment and poverty.

Learners studying online need digital devices including computers, laptops, mobile phones, good network coverage and data to continue with their studies. The researcher had noticed that financial constraints make it difficult for poor learners to buy equipment needed for online discussions.

1.4 PRELIMINARY LITERATURE REVIEW AND THEORETICAL FRAMEWORK

1.4.1 Literature Review

A brief discussion of the literature reviewed is provided and literature review will be discussed in Chapter 2. Noberg, Handel and Odling (2015:147) assert that over

the past decade, several technologies have emerged that can be used in education, more especially in distance learning. These technologies include audio, video, computer conferences, audio graphs and CD-ROM. Zawacki-Richter *et al.* (2015:112) elaborate that if students enrolled in distance learning institutions do not use the emerging technologies effectively in teaching and learning they are more likely to have an impact on the development and effectiveness of educational technology. Alquarash (2019: 133) concurs with Zawacki-Richter *et al.*'s (2015) views based on his observation on e-tutoring that effective use of emerging technologies can produce good results in students.

The ubiquity of information and communication technology (ICT) has considerably transformed the higher education landscape and is now providing an increasing number of novel and dynamic pathways for education delivery (Schmidt, 2015:3). The steady growth of flexible and affordable ICTs is impacting upon the higher education domain resulting in a departure from educational systems to technology-driven forms of pedagogy (Ngubane-Mokiwa, 2017:113, Hew, 2016:77).

Reynard (2017:17) also asserts that over the next ten years, personal, portable and wirelessly networked technologies will become ubiquitous in the lives of learners, and also that in many countries this is already a reality. They see ready-to-hand access creates the potential for the new phase in the evolution of technology –enhanced learning characterised by the seamless learning spaces and marked by the continuity of learning experience across different scenarios or contexts and emerging from the availability of one devise or more per learner.

According to Kennedy (2015:60), institutions offering distance education have evolved from using the different modes of delivering the content ranging from issuing the cassettes containing the study content compact discs, television broadcasting, telephone and satellite-based audio and videos for video conferencing. Nowadays, life is easier as a result of the emergence of new technologies. Students simply need computer, cellphone, tablet, iPod, Internet coverage and recently Wi-Fi to be connected. The most common technology is a computer with Internet browser, delivering text, audio, video messages as the

providing means of interactions of online instructors and students, and of the students and students.

Bond and Daher (2016:301) assert that ODeL is more effective than traditional instructional methods when appropriate technologies are used in instructional tasks and when there is student-to-student interaction. This aspect of accessibility helps students to continue learning irrespective of their professional obligations and on top of saving their time, while cutting down their financial expenses.

Schmidt (2015:13) emphasises that universities are increasingly introducing learning platforms that enable learners to communicate themselves. This improves communication and collaboration between students and saves time as students are capable of engaging in learning opportunities outside face-to-face context. More importantly, students also use the e-learning platforms to submit assignments and for administrative purposes.

Anderson and Rivera-Vagas (2020:85) postulate that over the next ten years, personal, portable and wireless networked technologies will become ubiquitous in the lives of students. This is already a reality in many countries. They argue that ready-to-hand access creates the potential for the new phase in the evolution of technology-enhanced learning characterised by the seamless learning spaces and marked by the continuity of learning experience across different scenarios or contexts and emerging from the availability of one device or more per learner. I do concur with Anderson and Rivera-Vagas's views that all students in the higher learning institutions require new technologies to continue with their studies; hence the teachers and students largely communicate and interact easily when using new and emerging technologies. In our societies, even a ten year old has access to mobile phones. Learners use their mobile phones for research purposes and to communicate with their friends. During the recent situation of COVID-19 epidemic in well developed countries and rich universities, online teachers engage their learners in virtual discussions using interactive technologies like Skype, Zoom and Microsoft Teams.

Online teachers from the ODeL institutions are currently using Microsoft Teams to communicate with learners in distance geographical areas, also for the supervisory purposes and guidance for students doing postgraduate studies.

Mafenya (2016:29) accentuates that Unisa is the largest open distance learning (ODL) institution and leading provider of higher education opportunities within the ODeL sphere. Unisa's high student enrolment figures and its adherence to its ODeL policy requires heightened efforts in student support. The ODeL model used by Unisa is geared to offer more support to students in remote rural areas. Students need to be get connected to communicate with their e-tutors and to interact with other students in discussion forums.

Teaching online requires different skills, roles and competencies for online instructors compared to teaching in traditional learning environments. Teaching online to support learners requires cooperation between lecturers and students. To promote cooperation, universities should offer ongoing support in various forms to help the academic staff through an online journey (Kassandrianou, Angelaki & Mavroidis 2014:26). Furthermore, Albrecht (2018:8) supports Kassandrianou, et al.'s views that teaching online requires cooperation between e-tutors and students based on his experience as an e-tutor. Online teachers and students need to be trained and emphasis should on the interaction between these two parties before online teaching and learning can take place effectively and efficiently.

Cox (2015:2) suggests the use of a peer-based e-tutoring system to facilitate online discussions. The study conducted by Cox at Griffith University (Australia) in online learning revealed that peer-based-tutoring promotes the active participation of the learners involved, promotes the students' engagement in the learning content and develops the confidence of the student who is performing the role of an e-tutor. Moreover, students performing the role of e-tutor adopted a supportive, collaborative and educational style, which was maintained even after their role as e-tutors has ended.

Kennedy (2015:50) asserts that countries like Hong Kong use the mobile instant messaging (MIM) support tools for teaching and learning in distant learning

institutions. The MIM tools like WhatsApp, Telegram and Skype are used to involve students in group discussions and to post announcements. The main role of the online instructor is to post the topic for discussion and then monitor and facilitate discussion. Recent research results have shown that students showed positive perception and acceptance of the use of WhatsApp and Telegram. Overall, effects of integrating technology and instruction in distance education learners yield better results and good performance for learners. However, Andrew and Stokes (2018) disagreed with Kennedy's views that WhatsApp can produce good results; instead using WhatsApp in e-learning is problematic; hence students do not concentrate in the discussion topic. One of the disadvantages of using WhatsApp as a discussion tool is that students have a tendency of using digital language.

Bond and Daher (2016:302) emphasise the role that dialogues can play in a synchronous virtual classroom. The synchronous type comprises alternate online access between instructors and students, or between students, and asynchronous type allows all participants to post communications to any other participant over the Internet. Dialogues were essential in shifting responsibilities so that students took a more active role in their learning while supporting each other. Learners are also more concerned with their learning benefits.

Ooko (2016:11) and Ischebeck (2017:2), for example, assert that while one can adopt various technological strategies and use different tools to support the learning environment, deployment of technologies in ODeL is known to result in more effective and efficient practices in the institutions. Research indicates that effective use of technologies in ODeL context promotes learner centredness. This implies that students are more in control of their own learning, they are involved in group work, make new discoveries, share information, and solve problems.

Al-Emran, Elsherif and Shaalan (2016:93) posit that mobile learning has become an important educational component for the students enrolled in distance education centres. In mobile learning, portable devices such as smartphones are used to conduct learning and teaching. Mobile learning enables students to learn,

collaborate and share ideas with their e-tutors, among each other with the aid of the Internet and technology development. They further assert that mobile learning acceptance by students and online instructors are critical to the employment of mobile learning systems. Attitude towards mobile learning technology is an important factor that helps in determining whether or not learners and instructors are ready to use mobile learning. Such attitudes will serve to identify strengths and weaknesses and facilitate the development of technology infrastructure.

There is a strong connection between online learning and mobile learning. To learn online, students need technological gadgets such as smartphones, tablets and computers. The gadgets are portable in such a way that students can use them anywhere they like.

1.4.2 Theoretical Framework

The study has adopted Community of Inquiry as theoretical framework. The theory was conceptualised in 2000 (Garrison, Anderson & Archer, 2001:7). Community of Inquiry framework postulates that social presence, cognitive presence and teaching presence are essential elements to foster successful educational experiences in computer-mediated distance learning environments (Garrison, 2019:13). A number of scholars including Zongozzi (2020:149) and Lease (2018:51) employed this theory in their research thesis and evidenced that Community of Inquiry framework focuses on intentional development of an online learning community with an emphasis on the process of instructional conversations that likely leads to epistemic engagement. They also posit that Community of Inquiry framework provides an environment in which learners can take responsibility for and control of their learning through interaction.

According to Garrison (2019:13), social presence is the ability of the participants to project their individual personalities to identify and communicate with the community and develop inter-personal relationships. The design elements of social presence include communication, group cohesion and collaboration. Students experiences entail valuing of learning, opportunity to express views and encouraging collaboration. Instructional media such as computer conferencing

engender high levels of student-student and student-teacher interaction. Therefore, instructional media can support models of teaching and learning that are highly interactive and consonant with communication ideals of university education (Anderson, Garrison & Archer, 2001:15; Garrison, 2019:14; Lease, 2018:8; Maddrell, Morrison & Watson, 2017:109; Ishtiaq; 2019:66; Jinel,Ying & Baohui, 2017; Dinca & Berge, 2021:49).

Garrison (2019:13), Breivik (2016:16) and Darrow (2009:11) posit that cognitive presence is the extent to which students are able to construct and confirm meaning through sustained reflection and discourse. The design elements of cognitive aspect include challenge or question, exploration of problem, proposing solutions and resolution. Student experience involves sense of puzzlement, information sharing, connecting ideas and the ability to apply new ideas. Garrison (2017: 5) asserts that cognitive presence is the process of inquiry that includes thinking, listening and expressing thoughts in the process of critical discourse. It is a collaborative process of thinking and learning in deep and meaningful ways, and it goes beyond critical thinking by supporting and thinking collaboratively.

According to Garrison (2018:4) and Kebritch, Lipschuetz and Santiague (2017:57), teaching presence is the design, facilitation and direction of the social and cognitive processes for the purpose of realising the relevant learning outcomes. The design elements include instructor guidance, building understanding and motivation. Student experience involves defining and initiating discussion topics, sharing personal meaning and focusing on discussion. Broda (2018:4) also added that teaching presence, as evidenced by a robust course structure and active instructor leadership is crucial for achieving deep and meaningful learning outcomes.

Community of Inquiry is compatible to the Unisa ODeL environment. For an example, an e-tutor provides guidance to the learners. Students are required to communicate and participate actively in the discussion forums.

1.5 PROBLEM STATEMENT

Unisa has adopted ODeL model to reach students in remote rural areas. As technology is gaining its momentum, the digital divide remains a challenge as students experience difficulties to access Internet connectivity and digital tools. Students from the deep rural areas still experience network coverage and the majority of students are not computer literate. Students in disadvantaged areas live in abject poverty and find it difficult to access online learning because they cannot afford to buy the essential digital tools. There is a digital divide in the sense that online students in the urban and semi-urban areas are well equipped on how to use the digital tools and currently in some areas there is free WI-FI which enables them to connect with ease. Therefore, the digital divide becomes the major problem.

There is no digital tools like computers and laptops in rural municipality libraries to support the students, let alone the issue of Internet coverage. Some rural areas have no electricity. As a result, they find it difficult to use the digital tools. Moreover, students cannot afford to buy computers, laptops, tablets and mobile phones owing to high costs (Ooko, 2016:5; Bujang & Maresova 2020:13; Bozkurt, 2017:679).

Students in rural areas do not have access to Internet connectivity and this is a cause for concern. Students from poor socio-economic background do not have access to the Learning Management System. As a result, they find it difficult to access their study material online and to engage in online group discussions.

As an e-tutor, the researcher usually encounters several students complaining in the online platform with some of these problems such as high cost of computers, data, Wi-Fi, software packages, theft, poor connectivity, poverty, and high repair costs of mobile computing technologies. Furthermore, online teachers complain about a low level of participation in discussion forums, poor engagement in asynchronous discussions. Failure is also owing to a lack of technological and

pedagogical knowledge in students (Perkin *et al*. 2015:1; Carlsie, 2020:94; Caufield, 2020:45).

The study will answer the following research questions:

The main question is: How can technology be effective in an Open Distance Learning institution?

The sub-questions are as follows:

- What are students' experiences in using the Learning Management System for learning at the University of South Africa?
- How do distance education students use Learning Management System for learning at the University of South Africa?
- How effective is the Learning Management System's students' support at the University of South Africa?

1.6 RESEARCH AIMS AND OBJECTIVES

1.6.1 Research aims

The study aimed to investigate the effectiveness of technology in open distance learning university.

1.6.2 Objectives

The specific objectives of this research are to:

- Explore students' experiences in using the Learning Management System for learning at the University of South Africa.
- Examine how distance education students use Learning Management System for learning at the University of South Africa.
- Determine the effectiveness of the Learning Management System in supporting students at the University of South Africa.

1.7 RESEARCH METHODOLOGY

An overview of research design, research methodology, population and sampling strategy, instrumentation and data collection techniques, data analysis and interpretation is provided.

1.7.1 Research Design and Methodology

The study used interpretive paradigm which believes that reality is multi-layered, complex and a single phenomenon can have multiple interpretations. In studying a phenomenon, qualitative research techniques will help us understand how people interpret and interact within the social environment (Babbie & Mouton, 2011:24). According to Creswell (2018:83), interpretive paradigm represents a learning process in which we build our understanding of the world (our reality) out of our experiences of functioning in that world and examining the actions and statements of the people. Accordingly, the rationale of using this paradigm is that the researcher will be able to meet with participants face-to-face and hear about their experiences in using the Learning Management System. Another added advantage of interpretivism is that it is compatible with qualitative approach.

According to Creswell (2018:79), research design is the process of conducting the study. Research design refers to the plan for selecting the participants, the research site, data collection and analysis procedure to address the research question and it shows which individuals will be studied, when, where and under which circumstances (Babbie & Mouton, 2011:15). Therefore, qualitative approach is more suitable for this study because it helps to discover new thoughts and individual views and the researcher forms the part of the sample. As a result, the study used case study of students enrolled in ODeL context in the College of Education (CEDU) at Unisa. This is the most suitable design for the study because it will grant the researcher to make use of any data relevant to the study. The primary source of the data will be the interviews. Case study and interviews serve as a logical design for this study owing to its flexibility regarding the source of data.

Purposive sampling was employed, and thematic analysis was used to analyse the collected data.

A qualitative approach was employed in the research programme. A qualitative research approach is more suitable in the sense that it is holistic in nature; that is, it emphasises a much wide range of variables and seeks to understand the complex linkages that exist between variables and the researcher becomes part of the sample (Creswell, 2018:70). Qualitative approach aims to explore and discover issues about the problem on hand (Babbie, 2020:56). The rationale of choosing qualitative approach is that it is easy to meet the participants in their natural settings, get an opportunity to interact with the participants during the interviews, listen to their experiences about technology and will also understand their perceptions about the effectiveness of technology in ODeL.

1.7.2 Population and sampling

Population is a complete set of elements (people) that possess some common characteristics defined by the sampling criteria established by the researcher (Babbie, 2016:120). Twelve participants enrolled for the Higher Certificate in ABET in the Eastern Cape Province were used for this study. There were eight females and four males. The home language of the ten participants was IsiXhosa. There was one English speaking and one Sesotho speaking participant. Their highest level of education was Grade 12. Six participants comprise students from Mthatha study centre with more students that are coming from rural areas whereas the rest comprised students coming from East London Unisa Regional Centre where the majority of learners are coming from urban areas like Port Elizabeth and East London respectively. Information obtained from these two centres helped the researcher to compare the effectiveness of technology between rural and urban learners.

Black (2017:99) describes sampling as the process of selecting units (people) from the population of interest so that by studying the sample, the researcher can fairly generalise the results of the study. In this study, a non-probabilistic sampling called purposive sampling (typical case sampling) were employed. Purposive sampling,

also known as judgemental or selective, is the form of sampling in which researchers rely on their judgement when choosing members to participate in their study (Creswell, 2018:39). The researcher decided to use purposive sampling because all the participants share common characteristics. All participants were enrolled for Higher Certificate in ABET at Unisa and study online.

1.7.3 Instrumentation and data collection techniques

The study has adopted semi-structured interviews to gather information from the participants. A semi-structured interview is a data collection method that involves asking participants open-ended questions and following them up with probe questions to explore further their response of the topic interest. Semi-structured interviews were chosen because it is one of the most dominant and widely used method of data collection in the social sciences (Creswell, 2018:85). Semi-structured interviews assisted the researcher to gather in-depth accounts of students' experiences on the effectiveness of technology in distant learning.

An interview guide was prepared beforehand and sent to the interviewee to indicate the types of questions that will be asked. An interview guide is a list of structured questions that the interviewer hopes to cover during the course of the interview. The guide comprised interview questions and the interview schedule (Babbie, 2016:121). Copies of consent forms were sent to the participants. When preparing the interview questions, the researcher used open-ended questions to get lengthy and descriptive answers during each interview session. Recording device for the recording of participant's responses during an interview will be organised and used.

1.7.4 Data analysis

Data analysis is the process of inspecting, cleansing, transforming, and the goal of discovering useful information, informing conclusions and supporting decision-making (Creswell, 2021:45). Collected data were analysed using thematic analysis which entails the procedure of identifying themes within qualitative data (Creswell, 2018:76). According to Scharp and Sanders (2018:117), thematic analysis emphasises the examination of themes identified in raw qualitative data by

organising the data set. They further assert that researchers choose thematic analysis for the semi-structured interviews because the thematic analysis is a highly analytic method. The rationale for choosing thematic analysis is that this method is a rigorous approach which can produce an insightful analysis that answers particular research questions (Creswell, 2018:79). Moreover, this method complemented the research questions by facilitating an investigation of interview data from two perspectives, first, from data-driven perspective and perspective-based on coding in an inductive way. Secondly, from research questions perspective that is to check if data are consistent with research questions and providing sufficient information (Scharp & Sanders, 2018:121; Collins & Halverson,2018:17; Band & Lambert,2014).

The six phase guide developed by Braun and Clarke (2016:589) was used to analyse the collected data. The guide consists of six steps, namely, familiarisation, coding, generating themes, reviewing themes, defining and naming themes, and writing up. Furthermore, the interviews were recorded and then transcribed so that the researcher will be able to interpret the discourse into a narrative that is faithful and true to the participants' original views. Therefore, the starting point was to transcribe the recorded interview responses. After converting raw data into processed data, this was followed by reading and re-reading the transcripts. Reading and re-reading information helped the researcher to familiarise himself with the information. Codes were generated and the coded data were organised into meaningful way. Themes were searched, reviewed and defined to identify of what each theme is about. The final stage will be reporting the findings.

1.8 ETHICAL CONSIDERATIONS

According to Creswell (2018:55), research ethics are an important issue in any research programme. In conducting research, the candidate accepts an ethical responsibility to act following the university regulations and in professional interests and the standards of the university. Unethical conduct directly affects the

university. As the starting point, I requested the letter from Unisa to conduct the study. After ethical clearance is granted by the CEDU, the letter was forwarded to the regional centres where interviews are going to take place. Each participant received a letter from the researcher to inform them about the study and its aim.

The participants were made aware that they were not supposed to identify themselves for the purpose of the proper and honest responses. This was done to encourage them to respond without fear of becoming victims. Furthermore, the participants were ensured that collected information will be treated with confidentiality. The participants were made aware that they had full right to terminate their participation if they wished to do so. The researcher handed out consent forms and confidentiality contract to the participants to guarantee privacy and voluntary participation.

1.9 LIMITATIONS OF THE STUDY

According to Creswell (2018: 90), limitations in the research are influences that a researcher cannot control. They are shortcomings, conditions or influence that cannot be controlled by the researcher that place restrictions on the methodology and conclusions. This study was limited to students enrolled for Higher Certificate in ABET at Unisa and cannot be generalised to other students.

1.10 DELIMITATIONS OF THE STUDY

According to Creswell (2018:100) and Fausi and Pradipta (2018:806), delimitations are the choices made by the researcher which should be mentioned. The study is restricted to one single mode ODeL institution, Unisa. Therefore, the findings from this study cannot necessary be generated to other ODeL contexts.

1.11 SIGNIFICANCE OF THE STUDY

The study is important because it could contribute to a better and more comprehensive understanding of the effectiveness of LMS usage in distance learning. Moreover, the study is expected to contribute the value and input to the pool of already existing body of knowledge based on how effective technology is in the distance learning context. The study will be useful to both online lecturers and researchers by providing a clearer view and deeper understanding on many issues related to the effective use of technologies to enhance the students' performance.

The research findings and recommendations of this study will benefit Unisa and other ODL institutions.

1.12 DEFINITION OF OPERATIONAL TERMS

To understand the effectiveness of technology in ODeL, a brief explanation of concepts will be presented.

1.12.1 Open Distance and e-Learning (ODeL)

ODeL is premised on the assumption that student learning can be optimally supported by modern electronic technologies and other digital facilities. ODeL students are assumed to have access to, and to be able to make optimal use of modern technologies to access their study material and to interact with lecturers without necessary being required to make physical contact. The increased interaction in ODeL leads to a reduction in transactional distance between online instructors and students. Therefore, modern electronic technologies result in online learning or digital learning through the use of remote electronic communication (Ngubane-Mokiwa & Letseka, 2015:129; Marzien & Abbasiah-Naghneh, 2019:12).

1.12.2 Open and Distance Learning (ODL)

Open and distance learning (ODL) is a blanket term that encompasses blends of learning in different mixes and contexts (Kentnor, 2015:3). Most definitions,

however, pay attention to the following characteristics: there is a separation of the teacher and learner in time and place. ODL provides appropriate student-support as a necessity to make learning meaningful, effective and rewarding, and relies on multimedia communication and uses industrial processes (Noberg, Handel & Odling, 2015:137; Morza, Smyrnova-Trybulska &Glazunova, 2017:45).

1.12.3 Online Learning

Learning with the assistance of the internet and personal computer. The term e-learning is often used interchangeably with online learning (Ooko, 2016:3).

1.12.4 Community of Inquiry

The CoI framework (Garrison, Anderson & Archer, 2001) is a process model of online learning. It assumes that effective online learning, especially higher order learning, requires the development of community, and that such development is not a trivial challenge in the online environment.

1.12.5 Connectivism

Connectivism came about as the result of proliferation of modern technologies and their potential impact on the way students interact in an online environment. Connectivism defines learning as a continual process which occurs in different settings including communities of practice, personal networks and workplace tasks (Downes, 2010:163; Elsier, 2020:11; Goldie, 2016:1054, Mercado *et a*l. 2018).

1.13 CHAPTER DIVISION

Chapter 1: Chapter one will discuss with the orientation of the study including the background and the purpose of the study. Various aspects like the problem statement, the rationale for undertaking the study will be fully discussed. Thereafter, the research objectives, research questions, research methodology, the significance of the study, study limitations, delimitations, ethical considerations, and definition of operational concepts will be described. As a conclusion to the chapter, content that outlines the remaining chapters will be explained.

Chapter 2: This chapter will discuss literature on the effectiveness of technology on distance learning will be discussed. Current literature relevant to the research questions including literature related to the individual variables and literature relating to the specific combination of variables will be fully discussed. The following sections will be covered: full exposition of the concept distance learning and online learning, the forth industrial revolution and distance learning, digital literacy as a must for ODeL, emergence of technology in distance learning, technology and e-learning at Unisa, technology and e-learning in other African higher learning institutions, technology and e-learning in higher learning institutions abroad, commonalities and differences of e-learning at Unisa and global higher learning institutions and benefits and challenges of e-learning.

Chapter 3: This chapter will discuss with the theoretical framework which serves as the knowledge base of the study. The existing theories that have already been tested and validated by others and considered as accepted theories in scholarly literature will be discussed. The community of inquiry framework will provide the rigour of the research topic.

Chapter 4: This chapter will describe the study's methodology, methods and techniques. A qualitative research approach will be used. In a qualitative approach, purposive sampling will be used as the sampling strategy, semi-structured interviews will be used as a data collection instrument. Thematic analysis will be used to analyse the collected data.

Chapter 5: This chapter will cover data presentation and data will be analysed using thematic method. Findings of whether technology is effective for the students studying through ODeL, particularly those who are doing Higher Certificate in ABET at Unisa East London and Mthatha centres will be presented and interpreted. Qualitative findings will be fully discussed, and comparison will be made for students enrolled in Mthatha and East London centres. Answers to the research questions will be fully explored in this chapter.

Chapter 6: This will be the final chapter of the study. In this chapter, a summary will be given and a conclusion will be drawn. The implications of the results will be

discussed. The results will be integrated with theoretical background and literature review. Recommendations, as well as the final remarks, will be discussed. The limitations of the study will be discussed. Areas of the future will be highlighted and discussed. This chapter will be followed by the list of appendices using during the study.

1.14 CHAPTER SUMMARY

The introductory chapter has outlined the problem to be investigated in this study. The background for the study has been fully discussed. The motivation for the study has been fully outlined. The aims and objectives of the study were discussed at length. Literature reviewed has been briefly introduced and will be discussed fully in Chapter 2. Theoretical framework underpinning the study has been briefly discussed and full discussion will follow in Chapter 3. The research design, methodology, sampling strategy, population to studied, instrumentation and data collection and analysis and interpretation techniques have been briefly discussed and will be fully discussed in Chapter 4. The researcher defined the operational concepts in the context of the study. The limitations and delimitations of the study has been clearly outlined. The organisation of the chapters in the thesis has been clearly shown. Next, Chapter 2 presents a literature review based on the effectiveness of technology in distance learning.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

Chapter 1 provided the background and objectives of the study. Chapter 2 provides literature review on effectiveness of technology in an ODeL context, sourced from relevant literature to produce the body of evidence about how effective is technology in an ODeL context. Literature review on global context, African region and South Africa using Unisa as a case study on the effectiveness of technology in ODL has been reviewed. In this chapter, literature based on various aspects including distance education and technology in a global state where the various aspects such as current state of distance and technology globally, emergency of technology in a global context and digital literacy as the must for ODL institutions in global context has been reviewed. Effectiveness of technology in global higher learning institutions has been covered.

Chapter 2 will start with Figure 1. Figure 1 is the roadmap of the information that will be covered in Chapter 2. The chapter will cover the generations of distance education. Aspects including distance education and technology in global context institutions, emergence of technology, the fourth industrial revolution (4IR) and its impact on ODL will be fully discussed. Emergence of technology in ODL will be fully discussed. Distance education and selected global institutions including Unisa as a selected case study will be discussed. Chapter 2 will be wrapped by discussing challenges and desirability of technology in ODL. What follows is Figure 1 showing the roadmap of Chapter 2.

ROAD MAP OF THE LITERATURE REVIEW

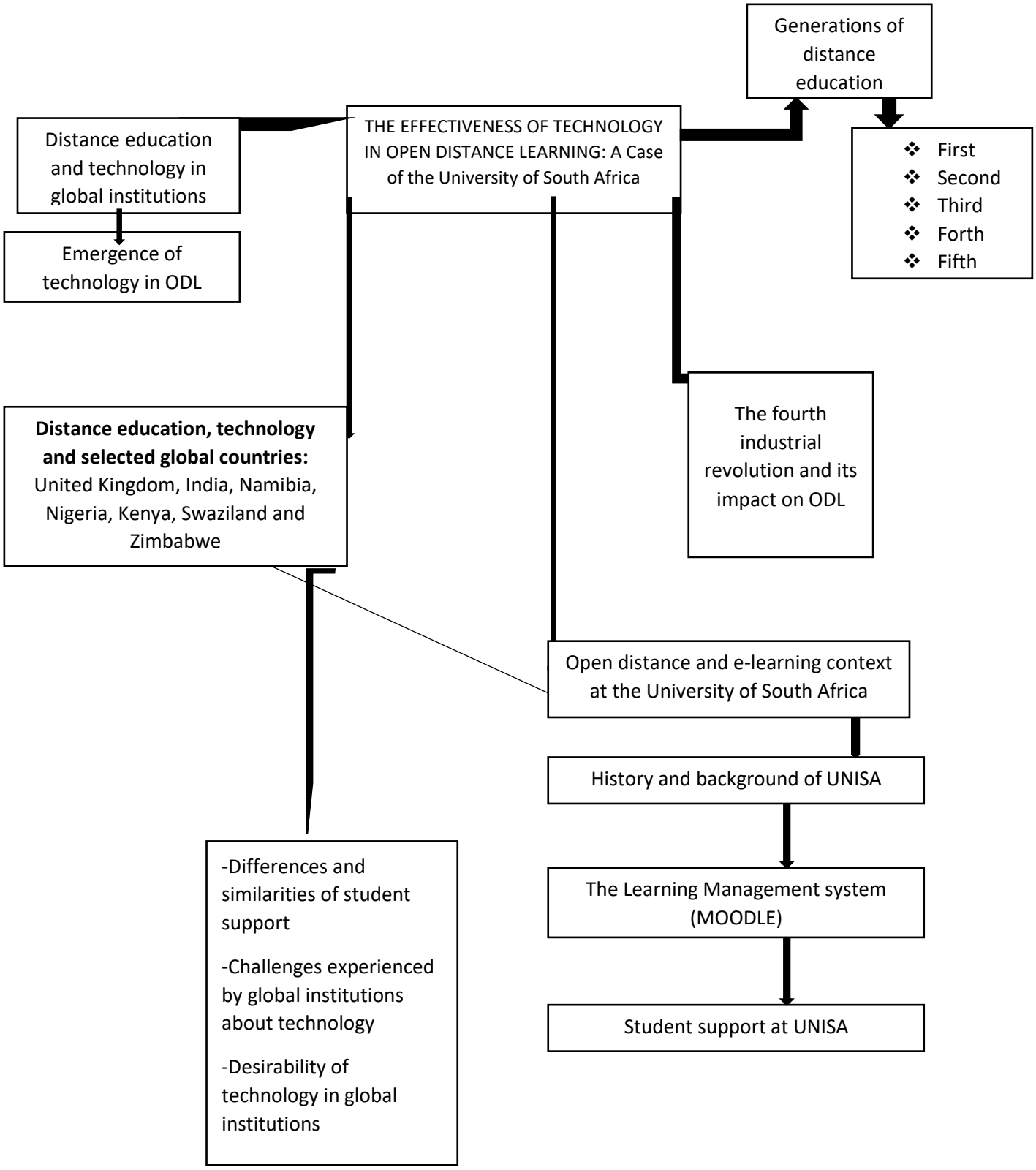


Figure.1: Roadmap for literature review

2.2 GENERATIONS OF DISTANCE EDUCATION AND DELIVERY TECHNOLOGIES

New technologies have transformed open distance education in global communities from correspondence education, integrated use of multiple, one way media, two way, a synchronous tele-learning, flexible learning based on asynchronous online learning combined with interactive media and currently intelligence flexible learning which add a high degree of automation and student control to asynchronous online learning and interactive media (Simpson, 2018:287; Ko, 2018:301; Hwang & Fu, 2019:567; Hill, 2019:6, Mare & Muteza,2021:78, Singh,2019:76) A brief explanation will be given to show how distance learning transformed:

2.2.1. The First Generation: Correspondence Education

Correspondence courses have been popular for the first generation. The enrolee can study, do exercises and take tests at a remote site of convenience using educational material, typically textbooks or lecture notes (Traxler, 2018:35; Ismail, Kinchin & Edwards, 2018:1; Prescott & Soeken, 2018:60). Some correspondence programmes have gone through transitions from strictly textual material to self-paced material, which was partially interactive and allowed people to go through a study activity at their own pace. Computer-based instruction is now available in which the text material and video clips are put on CD-ROMs. Exams can be given at particular places throughout the course. By these means, the material is interactive. If a question is missed, the program can refer the student back to the section for restudy. Prior to the CD-ROM, some of these programs were available on floppy disks, but they did not have the capability or as much of the interactivity of video clips (Bujang & Maresova, 2020:37; Pretel & Camprubi, 2017:1).

2.2.2 The second generation

2.2.2.1 Integrated use of multiple one way media

According to Haydn (2017:735), one way media include print and broadcasting or recorded media such as video cassettes. Media can be a component of active learning strategies such as group discussions or case studies. Media could be a

film clip, a song you hear on the radio, podcast of a lecture or newspaper article. Students can also create their own media. For example, student video projects can be a powerful learning experience (Abou-Khalil, 2021:678; Madge *et al*. 2019:267; More, 2019:113). In a podcast of a lecture, students can play a significant role by analysing the lecture's information in the form of discussions.

The use of media to enhance teaching and learning complements traditional approaches to learning. Effective instruction builds bridges between students' knowledge and the learning objectives of the course. Using media engages students, aids student retention of knowledge, motivates interest in the subject matter**,** and illustrates the relevance of many concepts (Leontyeva, 2018: 77; Yunusa & Umar, 2021:1223; Montgomery & Mallete, 2018:850; Lee, 2020:112).

2.2.2.2 Audio technologies

According to Samarrale, Teng and Alzahran (2018:2004), another cost-effective method of enhancing a distance education course is to incorporate some form of audio or voice technologies into delivery. This can be as simple as a telephone with voicemail or as sophisticated as an audio conference. Pertaining voicemail, it has become a very common mode of contact when speaking or interacting directly is not possible. One resource explains that voicemail has a great deal to offer distance learning initiatives. Through voicemail, students are able to leave messages for instructors regardless of the time. Advanced voicemail systems can enable instructors to leave messages for whole groups students at once. Furthermore, this mode of communication can substitute for email for those students that do not have access to the Internet (Lacka, Wrong, Haddoud, 2021:163; Bahari, 2021:56; Moore, 1991:1; Kongrusa & Nilsook, 2016:492, Almarash, 2016:65).

2.2.3 The third generation

2.2.3.1 Two way: Synchronous tele-learning or video conferencing

With the level of innovation this industry has been experiencing, team collaboration and online meetings are becoming better and easier to manage than ever. As the digital ecosystem continues to evolve, let us break down the newest trends IT managers and team leaders need to expect in video conferencing in the 21st

century (Ahmad & Jantan, 2019: 114; Ngubane-Mokiwa & Letseka, 2014:767; Krassmann, *et al*., 2019:175; Kwarma & Ngulube, 2020:1; Kumar & Rath, 2018:75).

Another technology that will play a significant role in the future of video conferencing is Artificial Intelligence (AI). Technical leaders are creating machine learning programs that can transcribe audio, count attendees and provide insights into attendee engagement, helping one to focus on the most impactful pieces of the meeting (Atanasova, 2019:-711; Ahn, 2020:7889; Gillet-Swan, 2017:43).

2.2.3.2 Computer technologies

Tu and Corry (2019: 207) argue that, as Internet usage continues to increase around the world, computer technologies are becoming more commonplace in the delivery of distance education. Online learning does not necessarily imply distance learning as many traditional higher education courses now utilise Internet-based course management software to aide in the learning process. Nonetheless, much research has gone into establishing best practices and guidelines for Internet-based distance education courses and programs. According to Aledo-Tur and Dominguez-Gomez (2017:678), e-mail, online collaborations and web-based education have been identified as the primary computer technologies used for distance education. Obviously, only students that have reliable computer and Internet access will be able to enrol courses that utilise these technologies.

2.2.4 The fourth generation

2.2.4.1 Flexible learning based on asynchronous online learning combined with interactive media

According to Rahman(2020:2), given its popularity, it is important to also consider active learning within the broader contemporary higher education landscape, which now includes a significant number of students learning in online and blended environments. This shift in modality has necessitated thinking about face-to-face pedagogical techniques in new ways, sometimes resulting in a complete re-design of a course for the online or blended environment. To be sure, the growth in online courses is one way to ensure that a diverse population of higher education students can learn in flexible ways that meet their needs (Misra & Mishra, 2021:72;

Kurten, Brimmel & Klein, 2020:83; Gilbert, 2018:3; Phungsuk & Ratanaolarn, 2017:89).

Unfortunately, despite decades of growing experience and expertise in distance education, there is still scepticism from faculty about the quality of education that is received online (Marmon, 2021:781). Perceptions of quality deficiencies in online classes are sometimes based on assumptions that instructors are better able to engage with students, and to encourage more active learning in face-to face (El-Sabagh, 2020:23; Barbour, 2018:123; Kusel & Martin, 2020:313).

2.2.4.2 Web-based resources

According to Priyanka and Sanju (2019: 75) and Krieger (2017:75), the increased popularity and use of the Internet has been coupled with an increasing amount of online information that students and educators alike can access to improve. Now more than ever before, students can link to resources on the web that they once could only find in libraries or via expensive subscriptions. More importantly, lecturers can take advantage of this situation and locate relevant websites for students to review or task learners with searching the Internet for information on a specific topic.

2.2.5 The fifth generation

2.2.5.1 Intelligence flexible learning

This type of learning adds a high degree of automation and student control to asynchronous online learning and interactive media. While computerisation began to change the administrative infrastructure of universities, the history of online learning in higher education begins in experimental projects, and in the disciplines, as opposed to centrally led and managed initiatives. Some histories align its development closely with that of correspondence courses and distance learning, or the early use of materials education (Tait, 2018:66; Abuatiq, 2021:98; Kumar, 2018:76; Kanchana, Patchainayagi & Rajkumar, 2019:57, Gordon, 2021:99).

2.2.5.2 Satellite videoconferencing

According to Keller and Conradin (2019: 59) and Kentnor (2015:21), the closest a distance student can get to actually being there is full-motion video teleconferencing. This is one of the oldest forms of video transmission for distance

education. Usually, satellite offers one-way video (instructor to student(s)) and two-way audio. This technology requires two sets of equipment (or more for multi-site transmission) – the uplink dish to transmit the video and the downlink dish receiver on the student end to receive and display the signal.

Technology is capable of evolving, considering the fact that digital wise, we are in the 4IR era. The researcher argues that the combination of web-based resources under 4IR with intelligence flexible learning and satellite videoconferencing falling under the fifth generation can produce the fruitful results. For an example, e-tutors can take an advantage of the situation and locate the relevant websites for the students to review in LMS. Videoconferencing will ensure that there is a full interaction between the students and their lecturers and the students themselves. Continuous engagement between the students in the LMS is one of the key factors.

2.3 DISTANCE EDUCATION AND TECHNOLOGY IN GLOBAL COMMUNITIES

The main focus is to describe distance education and discuss the current global trends on distance education and technology, emergence of technology in ODeL institutions.

2.3.1 The state of distance education and technology in ODL institutions

Kalata (2017:391) argues that distance education is a process of learning remotely without being in regular face-to-face contact with a teacher in the classroom. It provides a wide range of contributions and forms in the higher educational sectors that support flexibility to the learner with reference to entry and exit, pace and place of study, method of study and the choice and combination of courses, assessment and course completion. Moreover, the aim of distance education is to help the socially or economically backward person by offering opportunities not provided by conventional colleges or universities (Roszak *et al*. 2016:4; Penprase, 2018:77).

Abdullah (2014:58) concurs with the views of the preceding scholars that distance education enables the students in remote geographical places to continue with their studies without going to the university on full time basis. ODeL offers flexible teaching and learning.

Distance learning and online learning are used interchangeably in this study. Simonson, Zvacek and Smaldino (2019:3) and Singh (2021:9) contend that distance learning is mostly based on geographical location, while online learning is based on technology beyond geographical location. Distance learning is a key term that describes all the teaching learning process without direct help of the teachers. Curriculum is communicated to the learners through specially designed materials and distributed through different media.

According to Fozdar (2018:7) and Simpson (2018: 230), the major objectives of distance education is to spread higher education to large section of the society such as those living in remote and rural areas, working people as well as physically challenged people, to provide flexible system of university level education in terms of methods and pace of learning, eligibility criteria for enrolment, age of entry, conduct of examination and implementation of the programmes of study. Moreover, distance education seeks to provide an opportunity for upgrading skills and qualifications and to develop education as a lifelong activity to enable people or aspiring learners update their knowledge or acquire knowledge in new areas.

Kumar and Chand (2018:13) and Rumble and Harry (2019:2) argue that distance learning is a broad term which include studying at convenient time, allowing students to make choices regarding where, when and how learning occurs. Furthermore, distance education students are geographically isolated from lecturers and are often separated from their peers as the source of support. Instructors use various methods to facilitate courses in distance mode such as printed study guides and learning management systems.

The Internet has become one of the vital ways to make available resources for research and learning for both e-tutors and students to share and to acquire

information. (Ko, 2018:78). Technology-based e-learning encompasses the use of the Internet and other important technologies to produce materials for learning, teach students, and also to regulate courses in an organisation (Trust, 2017:1; Keskin, Koutropoulos & Waard, 2018:14). There has been extensive debate about a common definition of the term e-learning. Existing definitions tend to reveal the specialisation and interest of the researchers. E-learning as a concept covers a range of applications, learning methods and processes. In some definitions, e-learning encompasses more than just the offering of wholly online courses (Merriam & Baumgartner, 2020:70; Palermos & Kotze, 2020:345; Gunbatan, 2020:1).

Adeoye-Otatunde (2021:1358) agrees with the assertions of the preceding authors that successful connection results in successful interaction between the online teachers and the students. Continuous engagement in the online platform will help the students to understand the content better and perform well in the examinations.

Kumar and Chand (2018:8) and Shi, Cheng and Wei (2017: 3) argue that there are diverse ways of classifying types of e-learning. According to Simonson et al. (2019:79), there have been some classifications based on the extent of their engagement in education. Some classifications are based on the timing of interaction. E-learning can be divided into two basic types, consisting of computer-based and the Internet-based e-learning (Jiniel, Ying & Baohui, 2017:3).

Computer-based learning comprises the use of a full range of hardware and software generally that are available for the use of ICTs and also each component can be used in either of two ways: computer managed instruction and computer-assisted learning. In computer assisted learning, computers are used instead of traditional methods by providing interactive software as a support tool within the class or as the tool for self-learning outside the class (Chen, Liu, Cheng & Huang, 2016:7, Schwab, 2019:345). On the contrary, in computer-managed instruction, computers are employed with the purpose of storing and retrieving information to

aid in the management of education (Manacorda & Tessel 2020:67; Yoon & Lee, 2021:223; Goldie, 2016:28; Handel, Stephan & Kopp, 2021:60).

Internet-based learning is a further improvement of the computer-based learning, and it makes the content available on the Internet, with the readiness of links to related knowledge sources (Harris & Rea, 2019:13). Examples include email services and references which could be used by students at any time and place as well as the availability or absence of teachers or instructors. Al-Azawel, Parslow and Lundqvist (2017:54) classified Internet-based learning by the extent of such features use in education, mixed or blended, assistant mode, and completely online mode. Mixed or blended mode offers a short-term degree for partly traditional method. The completely online mode, which is the most complete improvement, involves the exclusive use of network for learning (Ding & Wang, 2017:7; Alquarash, 2019:432; Ishtiaq, 2019, Gordon, 2021:78; Penland, Fayoumi & Hassan, 2019:89).

Simonson *et al.* (2019:80) describe the completely online mode as synchronous or asynchronous timing. In synchronous (live) presentations, students are allowed to ask questions while the presentation is in progress. For instance, when the e-tutor is having a class with students using Zoom, students can communicate with their e-tutor. On the contrary, in asynchronous type, a recorded presentation allows students time to deliberate and reflect before asking their questions, perhaps in an online discussion group (Tarusivikiri, 2017:111).

Liyanagunawarden and Williams (2019:2) argue that the synchronous types allow the learners to discuss with instructors and also among themselves via the Internet at the same time with the use of tools such as videoconference and chat rooms. Active participation and interaction in synchronous and asynchronous learning taking place between the student and the e-tutor and the student and other students can improve communication and the performance of the students enrolled in the ODL context. Students can study virtually any course online with greater flexibility in choosing the best time to study, in their own pace, anytime of the day and a world of opportunity can now be accessed from a laptop or smartphone.

2.3.2 Emergence of technology in ODL institutions in a global context

Noberg, Handel and Odling (2015:3) argue that over the past decade, several technologies have emerged that can be used in education, more especially in distance learning. These technologies include audio, video and computer conferences, audio graphs, CD-ROM, and other computer-based instruction. The use of social networks and new educational formats and mobile have an increasing impact on teaching and learning processes (Mercado *et al*. 2018:5). Zawacki-Richter *et al.* (2015:1) argue that if the emerging technologies are not used effectively in teaching and learning of students enrolled in distance learning institutions, they are more likely to have an impact on the development and effectiveness of educational technology.

Moreover, the transformation of higher education sector together with the evolvement of information and communication technologies has over the years brought about changes in different dimensions and facets of education. The changes were perpetual and multifaceted and include access, modes of knowledge transmission and expected outcomes (Mncube, Dube & Ngulube 2017:11). E-learning is a new paradigm of teaching and learning that can be delivered through a computer-based or mediated medium that can enhance global reach because it allows everyone to learn anything, anywhere and anytime (Erlinda 2018:397; Adams, Crozier & Osborne, 2018:2; Gunbatan, 2020:47).

The ubiquity of technology has considerably transformed the higher education landscape and now providing an increasing number of novel and dynamic pathways for education delivery (Schmidt, 2015:3). The steady growth of flexible and affordable ICTs is impacting upon the higher education domain resulting in departure from educational systems to technology driven forms of pedagogy (Ngubane-Mokiwa, 2017:113; Gordon, 2021:94; Wertz & Purzer, 2021:78).

Ahmad and Jan (2021:453) and Chen, Dobinson and Kent (2019: 5) also predict that over the next ten years, personal, portable, wirelessly networked technologies will become ubiquitous in the lives of students. They indicate that this is already a reality in many countries; they see ready-to-hand access creates the potential for

the new phase in the evolution of technology–enhanced learning characterised by the seamless learning spaces and marked by the continuity of learning experience across different scenarios or contexts and emerging from the availability of one devise or more per student.

Al-Emran, Elsherif and Shaalan (2016:101) and Andrew and Stokes (2018:7) add that mobile learning has become an important educational component for the students enrolled in distance education centres. Mobile learning makes it possible for the students to learn, collaborate and share ideas with their e-tutors, among each other with the aid of the Internet and technology development. However, the researcher opines that although mobile learning makes things easier for the online students, there are more costs involved including the expensive data for connectivity purposes and high costs of buying other software and hardware use for the study purposes.

Almarash (2016:453) and Dommet (2019:17) further assert that mobile learning acceptance by students and online instructors is critical to the employment of mobile learning systems. Attitude towards mobile learning technology is an important factor that helps in determining whether or not students and e-tutors are ready to use mobile learning. Such attitudes will serve to identify strengths and weaknesses and facilitate the development of technology infrastructure (Schmidt, 2015:3).

Hamid, Waycot, Kurnia and Chang (2015:3) and Gordon (2021:80) contend that the emergence of social technologies such as WhatsApp and Telegram made a great contribution in the virtual class. WhatsApp and Telegram have an added advantage in online learning; hence, they enhance interaction between the students and the e-tutors, also enhance interaction among the students, and increase teaching and learning intimacy among the students.

Online social technologies help the students to interact with each other and with their lecturers. The recent popularity of social technologies has motivated university lecturers to engage in online social networking of educational activities. These technologies have enormous potential to enhance teaching and learning

(Morza, Smyrnova-Trybulska & Glazunova 2017:21). The researcher supports the views of the preceding scholars that if WhatsApp and Telegram can be used effectively and efficiently in ODeL context, there would be more improvement in communication and participation as this will result in a good performance.

According to Stanton and Harkness (2019:30), Carlsie (2020:3) and Penprase (2018:2), teaching and learning have long been constrained by the following scenario: students needed to gather in the lecture hall or sit around the table to discuss with fellow peers. Technology innovation is relaxing those constraints, however, and bringing radical change to higher education. More learners now study online using modern technologies. The researcher disagrees with view that more students are able to study online; hence, students come from the remote geographical areas to study online because of poor connectivity, expensive laptops or smartphones and lack of support from the ODL institutions to facilitate online learning, including unfair distribution of the NSFAS. However, the funds are not enough to cover all the study needs for the learners.

Bands and Lambert (2014:123) point out that though much experimentation lies ahead, massive open online courses (MOOCs) threaten different universities in distinct ways and one of the biggest challenging variables being the costs involved in online education. The two big factors underpin a university's costs: physical proximity requirement and productivity limitation. The need for physical proximity involves enrolling more students which is expensive considering the increase in buildings and instructors and also the productivity limitation, the maximum number of students that can be compressed into lecture venues and exam-marking rosters are limited (Hew 2016:320; Formunyan, 2017:566, Yang & Baldwin,2020:77).

According to Bicen and Demir (2020:44), higher education worldwide is more commonly employing learning and teaching methods driven by ICT which result in better student performance. Choudhurry and Pattnaik (2020: 67) argue that expanded ICT use to support student learning in higher education cannot be justified when low student usage is evident, and the value of e-learning resources value is under investigation. In the past 15 years, much attention has been

afforded by scholars for online learning. In a research on emerging technologies conducted by Marzien and Abbasian-Noghrich (2019:730), they find that with the success of an appropriate orientation programme for first year students in preparation for the university environment using new technologies, first-year students are, in most cases, underprepared and the most vulnerable are generally first-generation, non-traditional students from poor families; they lack computer skills and needs more training and more workshops to be fully prepared for the online environment.

E-learning has become a pillar of higher education success as it enhances teaching and learning quality (Qwabe & Khumalo, 2020: 89). Furthermore, a positive relationship has been shown to exist between the benefit of acquiring technology skills, engagement by the student and the desired result of learning (Bicen & Demir, 2020:44). The researcher concurs that support provided by ODeL institutions using the ICT methods can improve the learning of the students only if the students are trained on how to use the ICT tools during their first year in the university.

However, Zvavahera and Masimba (2019:103) highlight concern expressed by educators worldwide, regarding the extensive rate of maintenance owing to wear and tear that stems from online learning when student preference for online learning was researched as opposed to face-to-face learning. Student's preference for face-to-face learning is mostly when pursuing conceptual subject matter knowledge, in contrast to their preference for online learning where self-regulated learning skills are concerned (Tarusikirwa, 2017:111; Hill, 2019:113; Ince, 2021:890).

Online learning, according to Choudhury and Pattnaik (2020:76), provides students not only with flexibility in the time and place when and where they learn, but also with the proficiency to "apply their knowledge and meta-cognitive self-regulation strategies, such as monitoring one's learning progress". Ngara and Makuvara (2017: 79) argue that mixed findings show student engagement as not only enhanced by online learning tools, but also resulting in the achievement of

intended outcomes, with regards to the use of online platforms and student success.

Moreover, those students who make use of e-learning platforms are more likely to employ higher order thinking in their study methods, as part of deep learning approaches, along with reflective, as well as integrative learning and higher gains were reported in social and personal development, general education and practical competence. Furthermore, Tarusikirwa (2017:113) highlights that lecture attendance may be adversely affected by students who engage in e-learning platforms, as students can easily access learning resources, such as PowerPoint slides. Students need to be trained in basic computer skills like using their devices to type their assignments.

The new emerging technologies enable students to use the variety of technologies to interact with other students in LMS. Technologies that are cheaper and more accessible to students include smartphones. However, not all the students are able to use the new emerging technologies owing to the digital divide. Students from the poor socio-economic backgrounds find it difficult to access new and emerging technologies.

2.4 THE FOURTH INDUSTRIAL REVOLUTION AND ITS IMPACT ON ODL

Sutherland (2019:34) posits that the 4IR is imperative for people to understand the impact of changes in all areas of our lives, including the higher learning institutions. Currently, all graduates face the world transformed by technology, in which the Internet of Things (IoT), Artificial Intelligence (AI) and machine learning, big data, cloud and edge computing and social media create different opportunities and challenges for formal education systems. As students consider life after graduation, learning institutions are facing questions about their own destiny, especially empowerment.

The technologies powered AI are so much transforming the world that social concepts such as post work are increasingly defining the present period. This period requires certain skills that are not exactly the same as the skills that were required in Third Industrial Revolution where information technology was the key driver. The researcher concurs that new technologies play a significant role in higher education. As a result, the online learners engage with other learners using the modern technologies and social media to continue with their studies.

Sutherland (2019:34) contends that digital migration and technology are crucial for students studying in an ODeL context. Marwala and Xing (2019:356) and Fomunyam (2017:45) argue that the plurality of wearable devices indicates an early stage of another technology. Education establishments have to act now to realise wearable's huge potential to the way we teach and how our students learn.

Moreover, Al-Rahmi *et al*. (2019:118) argue that new and emerging technologies such as smart phones, wearable devices and sensors, cloud-based IT, advanced analytics and the Internet are changing business and operating models across all sectors, including higher education. These technologies present new opportunities to improve or redefine the university experience through activities including teaching and learning (Hol & Sahoo, 2021: 249; Leary, Walker & Harrison, 2019:27).

In the 4IR era, there are more sophisticated new technologies that facilitate online learning. Although technology evolves in a faster pace, there are challenges in the sense that students enrolled in ODeL as well as their lecturers are not thoroughly trained on how to use these technologies.

2.5 DIGITAL LITERACY IN THE CONTEXT OF OPEN DISTANCE AND E-LEARNING

Recent research results have shown that students in some global ODeL institutions are not digitally literate. According to Maphosa and Bhebhe (2019:186),

digital literacy is the ability to utilise ICTs in learning. Santos and Serpa (2017:19) argue that digital literacy is imperative in institutions running ODeL programmes. There are specific skills and competencies in ICTs that are required by both e-tutors and students. Both e-tutors and students need to have the ability to use ICT tools in a distance mode of education and these will work well when there is access to the Internet.

Lubbe (2016:19) and Harrison (2019:33) reveal that digital literacy infers to reading-writing skills, but without paper, pencil, books or lecturers. The digital world offers tremendous benefits to all members of the society, including students in all systems in education. It provides digital platforms and opens up opportunities to learn about new and important issues, and it empowers innovation. More importantly, digital literacy has the ability to develop an individual's skills in grammar, writing and typing skills on platforms, such as social media and blog sites. Digital literacy entails the use of devices such as smartphones, tablets and laptops.

Maphosa and Bhebhe (2019:188) reveal that digital literacy encompasses issues of cognitive authority, safety, privacy, creative, ethical, and responsible use and reuse of digital media. A lack of digital literacy implicates one's full potential of being competent student especially in the courses offered in ODL. Moreover, digital literacy equips a student to be competent and empowered employee. Digital literacy is more than technological expertise; it includes a wide variety of ethical, social and reflective practices that are embedded in work, learning, leisure and daily life.

Marzulila *et al*. (2018:17) concur with Dommet about the role that virtual tools can play in online learning. They also emphasised that in order to obtain more fruitful online results, virtual tools such as forums and quizzes should be integrated with social networking services; hence, they are more accessible to learners. Examples of social network services include those that are used for messaging (WhatsApp and Telegram), for image sharing (Instagram , snap chat and pinterest), for video sharing (vine and You Tube), for audio sharing (iTunes and stichers), for micro

blogging , Twitter, Google plus and path), for blogging (tumbir, blogger, word press), for professional sharing (LinkedIn) as well as academic sharing Google scholar, academia and research gate (Erlinda, 2018:397, Li & Yang, 2021:76).

Lubbe (2016:20) and Lee (2020:23) assert that there are a number of digital literacy competencies which higher education students should possess, and these include ability to search information from the Internet, disseminate digital information, acquire communication skills in an online environment, understand the basics of digital technologies, plan and manage a virtual project, acquire a digital civic attitude and acquire team working skills in an online environment. Communication and collaboration are other important competencies in digital literacy. Students and lecturers should be able to interact and share knowledge through digital technologies. Students should also learn to collaborate in learning by using digital technologies. Birzina (2015:18) argues that there is lack of digital training tools in developing universities to cope with a large number of students enrolled in these institutions.

Various scholars are in the right track by stating that students enrolled in distance education institutions must be fully equipped on how to use the digital tools. Unisa is doing its best to equip students by organising in satellite campuses.

The implementation of technology in higher educational institutions is accompanied by opportunities like quick access to information using the digital tools including Google Scholar and digital tools that allow students to share an information with other students and their e-tutors. There are challenges of the majority of e-tutors and undergraduate learners enrolled in ODL institutions being computer illiterate; hence, lack basic skills needed to study online.

2.6 DISTANCE EDUCATION, TECHNOLOGY AND SOME SELECTED GLOBAL COUNTRIES

Selected ODL institutions in the global context will be discussed to show how they support their students using technology for the purpose of teaching and learning.

Seven global institutions have been selected, namely, Athabasca University, The Open University of United Kingdom and Nalanda University, University of Namibia, Obafemi Awolowa University, Africa Nazarene University, and University of Swaziland. These institutions have been selected because they have adopted ODeL approach for teaching and learning.

2.6.1 Canada: Athabasca University

Athabasca University is one of the leading ODeL institutions in Canada that offers flexible teaching and learning to students, including all students from the diverse background. Athabasca University was established in 1970 by the province of Alberta. Moreover, Athabasca University was formed specifically to provide education to post-secondary students who wanted to pursue their educational goals without leaving their homes, jobs and families (Cronin, 2017:3; Kamal, 2019:756).

Among the features that attract so many students are Athabasca University's flexible delivery systems and concomitant savings opportunity and relocation costs. Over 525 undergraduate courses are offered by continuous enrolment, self-paced, individualised delivery, and all with some sort of online component. Graduate programmes are delivered online to cohorts of students. Many support services are available online. Student support of the Athabasca University students is made possible by the use of LMS where e-tutors are able to interact with learners in remote geographical areas (Arora & Lihitkar, 2017:406, Louis-Jean & Cenat, 2020:20).

Athabasca University made it possible for the students to submit their assignments electronically rather than through the postal system. The electronic submission of assignments makes it possible for students to receive immediate feedback. Athabasca University equipped and trained all staff, established a computing helpdesk and set clear standards for response to students. All support innovation through a variety of platforms and approaches provide a variety of online enhancements to course and service delivery. The government plays a role in funding online technologies used by the students. More resources are also

allocated to the university to support innovation and implementation of online systems. The main focus is on removing barriers for those who are unable to access university education, and on excellence in teaching and research (Bozkurt & Keefer, 2017:3).

2.6.2 United Kingdom: The Open University of United Kingdom

Despite its high-class universities, the UK's larger higher education system was underdeveloped in the post-war. For adults, far fewer learning opportunities existed at the degree and diploma level. Deliberations among politicians led to the formation of the Open University of the United Kingdom (OUUK) by official Royal Charter (Open University, 2012). The OUUK is the only university devoted for distance learning in United Kingdom. It is also the UK's largest university with over 200,000 students (King & Boyatt, 2015; Karip, 2019:345).

Ahmad and Jantan (201921) posit that 45 years ago, when OUUK began broadcasting its lectures over British Broadcasting Cooperation (BBC) television and radio, there were many reasons to discount its importance. For one thing, the concept of providing higher education at distance was not new, the first correspondence course, teaching shorthand, was offered in the 1700s. The University of London began offering distance learning degrees to the students around the world in the mid-19th century (Coccacia, 2019:567; Darko-Agyn & Kofi-Arman, 2020:654; Liyanagunawarden & Williams, 2019:34).

OUUK is a longstanding exemplar of how to serve non-traditional students who many do not see as college material. From its revolutionary founding onward, it has shown how to combine scale with personalisation relying on technology, at a cost lower than those conventional universities while maintaining academic quality. (Bond & Handel, 2021:74; Cronje, 2020:453).

The OUUK pedagogical tools inevitably changed with the times. Lectures are now offered online, together with text and video-based class discussions. It has become an enthusiastic participant in Open Courseware movement, providing free online materials for many classes as well as free courses offered through iTunes, which have been downloaded millions of times. Almost all study materials are still

developed in-house, at considerable expense. Every text that students need is now available on mobile devices such as iPods (Paul & Tait, 2019:4).

Some of the principles of online learning occurring at OUUK are similar to what Unisa is doing. For instance, students are able to interact with their e-tutors and other students online. Students are able to download their learning material and previous question papers from mymodule site.

2.6.3 India: Nalanda Open University

Nalanda Open University (NOU) is a university at Patna in Bihar State, India. It is the only university in Bihar providing open distance education. The university was established in March 1987 by an ordinance issued by the Government of Bihar.

In 1995, Nalanda Open University Act was passed by the legislature of Bihar replacing the earlier ordinance and this university thereafter came under the authority and jurisdiction of the passed Act. It is named after the famous Buddhist Nalanda. Nalanda Open University offers degrees, diplomas and certificates. Their degrees, diplomas and employments are eligible for higher studies, public and private sector employment and service promotions. It is an open university, which means it follows an open door academic policy and is open to everyone for admission with minimum requirements. It is the second largest open university in India after Indira Gandhi National Open University (IGNOU) (Kaur & Aggarwal 2018:43; Mandal, Banik & Das 2018:5).

A tender has been floated by the University for University Automation System software which would enable the university to provide most of its services such as registration of students, issue of admit cards, results, and verification of degree, student's records, study material and other online services. For instance, students are able to download their study material using the university portal. Curriculum is communicated to the students studying at University of Nalanda through specially designed materials (self-learning and study materials) and distributed through different media such as television, radio, satellite, audio/video tapes, CD-ROMs, Internet as well as the World Wide Web. According to Arora and Lihitkar (2017:403), University of Nalanda updated its curriculum and introduced computer

literacy at the basic level in diploma courses and at advance level in master's courses (Kakati & Dutta 2018:2).

Lastly, considering the vast rural nature of India, the University of Nalanda has its focus on the developing students enrolled in its distant context in the rural poor areas. The government of India budgeted and supported students in these areas in terms of ICTs (Dash & Botcha 2018:7).

2.6.4 Namibia: University of Namibia (UNAM)

The centre for external studies is an academic centre of the University of Namibia established to ensure greater access to higher education and equity for students with various education backgrounds. The university manages ten regional centres. The centre has three departments, namely, materials development and instructional design, student support and administration.

The Centre for External Studies strives to become the leading ODL centre in the country and beyond by enabling people to achieve their full potential through accessible, innovative and flexible learning. Its mission is to provide accessible quality higher education and to create opportunities for professional development to adult members of the community by providing open learning through distance and continuing education programmes. Furthermore, the Centre for External Studies caters for the educational needs of people who, for variety of reasons, cannot come full-time to any of the university campuses to further their studies (Duplesis & Keyter 2019:7).

The Centre for External Studies is aware of the difficult circumstances under which many of its students have to study. It therefore provides assistance and academic support by recruiting competent tutors to provide tutorials and mark assignments. These tutors are assigned to a module to help the students with any problems they have in a particular module.

Students are encouraged to consult tutors for any problems they have in a particular module. To supplement the use of study materials by students, the Department of Student Support arranges contact sessions at various centres from

time to time. Contact sessions provide a valuable opportunity for students to talk to tutors and be assisted in their modules and also to talk to other students doing similar modules and experiencing similar problems with purpose of forming study groups (Breins, Raghuran & Gunter, 2019:56).

Centre for Open, Distance and eLearning (CODeL) at the University of Namibia offers online support through a ticketing system. The online support enables students to send queries and various issues such as assignments and study guides. The official learning platform at CODeL is an LMS called Modular Object-Oriented Dynamic Learning Environment (Moodle). Moodle is designed to provide educators, administrators and learners with single robust, secure and integrated system to create personalised learning environment. Based on the socio-cultural learning philosophy and social constructivism, Moodle supports self-directed and collaborative learning by enhancing self-monitoring and social interactions as well as active learning of students (Leonard & Snyman 2019:3).

2.6.5 Nigeria: Obafemi Awolowo University (OAU)

OAU is one of the ODL institutions in Nigeria. OAU was established in 1962. When the academic institution was created, it was referred to as university of life. OAU is owned and operated by the Federal Government of Nigeria. In 1962, the university started with five faculties (Aladejana & Olajide 2019:20).

The OAU distance learning model involves the applications of multimedia technology that supports electronic instructional delivery (e-learning) and independent learning. This involves the automation of most of the learning processes including lecture delivery using world class student information systems. The technology for e-learning include a tablet device, the digital video broadcast and multimedia conferencing network systems which enables e-tutors to access educational resources but on and offline at the student's convenience. The other delivery platforms for supporting learners include compact discs (Ejemeyovwi & Osabuohien 2020:78).

Recently, the OAU has launched the LMS called e-zone. E-zone facilitates the provision of instructional materials to students in the form of online text, PDF, MS

Word, PowerPoint, audio presentations and video recording of lecturers. The system also allows instructors to link to a vast array of free educational resources available on Internet. In addition to and beyond the provision of materials, the e-zone allows instructors to create avenues for interaction in three directions: the teacher to students, students to teacher and students to students. Its discussion forums allow discussions of a lecturer topic in the virtual classrooms, therefore, creating a sense of community among participants, all who are located in different parts of the country (Bashir & Olajide, 2020:2).

The e-zone has also assignment and classwork modules which are integral parts of teaching and learning. Other interactive tools embedded in the system are chat, feedback, glossary, lesson, quiz, and workshop and elaborate test engine which can handle essay questions, multi choice questions and many other types of questions. Unique features of e-zone are its ability to keep logs of activities, therefore, making it possible for a lecture to monitor students and indeed identify those who are not participating adequately in a virtual class (Oluwaseun 2016:67; Zaid & Alabi, 200:17).

Panigue and Simpson (2018:221) report that students enrolled in OAU are faced with poor infrastructure, lack of power and inequality in terms of Internet access. This is very common among students living in the villages. Recently, students are faced with the problems of power cuts.

2.6.6 Kenya: Africa Nazarene University

The institute was founded in 2008 to deal specifically with distance education. Africa Nazarene University (ANU) targeted students in Kenya and beyond. The institution was established to provide learning opportunities for those aspiring to study at the university level but who are unable to commit time to study through the conventional mode of study. ANU was also created to provide alternative and innovative education, which is not limited by space and time, to provide opportunities for the people to learn at their own pace and to provide the much-needed workforce for development.

ANU as the Institution of Open and Distance Learning (IODL) strives to keep abreast of the development in the rest of the world by putting more emphasis on the use of technology to support teaching and learning (Mays 2017:15). ANU has embarked on putting more computer laboratories, training staff and students on using technologies for learning and teaching. To achieve this, an Institution has the LMS called the Comprehensive Academic Management System which they use for registration purposes, student finances and examinations (Mays 2018:4). This LMS allows students to submit their assignments, to check their assignment and examination results and the feedback provided by their lecturers (Ooko, 2016:19; Tarus, Gichoya & Muumbo, 2019:21).

The institution has established a corporate SMS service which allows students to communicate with the university in obtaining fee balances, statements, to check announcements from their lectures, important dates and emergency alerts. This has increased efficiency, effectiveness and convenience in the means of communication between the students and the University. ANU has introduced e-learning using the e-Nazi Moodle platform.

E-tutors and students received appropriate training on the use of e-Nazi platform. New students admitted at ANU are also provided with training on computer literacy programmes and the use of Internet technology. The university regularly holds several training programmes, meetings and seminars to raise awareness on e-learning. The institution's library catalogue is accessed through the university's website (Ogwengo & Osano, 2017:19).

2.6.7 Swaziland: University of Swaziland

The University of Swaziland (UNISWA) achieved its independent status as a fully-fledged university in 1982. UNISWA has continued to develop in accordance with its aim of assisting national development. With the steady increase over the years in the number of students who qualified for university entrance from school and outside school, it became clear that the university could not cope with the demand for admission into full-time programmes owing to limited resources and facilities. The Institute of Distance Education (IDE) was established in 1994 to increase

access to identified programmes offered by UNISWA for individuals who would not otherwise be able to register because of shortage of human or physical resources on the campus. Through IDE, the university expects to increase the production of skilled labour force for both the private and public sectors (Dlamini & Worth, 2019:3).

The institution uses the Blackboard as its LMS. Lecturers of IDE also encourage students to buy cell phones and tablets so that they can participate in WhatsApp group discussions. Tsabedze (2019:359) highlights that WhatsApp emerges as the key social media tool that opens up opportunities for IDE students to transfer, translate and transform educational journey. Although WhatsApp does provide space for opportunity for some students, this is framed through socio-technical marginalisation, which is a demographic legacy of inequality (Mittal, 2021).

For many students, access to the library is problematic as a result of high costs of data and poor Internet coverage. The use of Internet access to the relevant information would assist students in their academic work and their projects. Students in rural areas struggle with Internet. When students want to access the Internet, they are supposed to email or send a fax to their (Dlamini & Worth, 2019:8).

2.6.8 Zimbabwe: Open University of Zimbabwe

ODL has been going on for quite some time in Zimbabwe and new distance education institutions continue to be established. The Zimbabwean National Association for Distance and ODL was launched as early as 1997. The survey of distance education in programmes in Zimbabwe shows there is a number of other institutions which have been registered with the ministries of education and higher education respectively (Musingafi, Mapuranga & Chiwanza, 2020:59).

The institution relies mainly on the printed material media. The only advanced technology used is being supported by the government radio. The e-tutors write scripts which are sent to Zimbabweans which are sent to the audio visual centre for recording. The recorded lessons are then sent to the Zimbabwean Broadcasting Corporation. Students are allowed to bring empty cassettes, but

these are used to a limited extent. The Open University also offers Bachelor of Education programme. Tutors and students have topics which they discuss radio for the purposes of those who are in remote areas and sometimes tutors literally give lectures on the radio (Zvavahera & Masimba, 2017:89).

Many students do not have access to sophisticated technologies such as television, audio-visual cassettes and video-conferencing computers owing to the lack of financial resources. As a result, such technologies are extremely expensive and therefore difficult to purchase. The other problem is that even if the institution can try to purchase such technologies, most students, particularly those in rural areas, would not have access to such facilities (Cevikbas & Argu, 2019:64).

Nevertheless, the Open University of Zimbabwe have good plans in place for the use of technologies for teaching and learning purposes, which they hope to implement in the near future. In their research findings, Brule (2020) asserts that ODL learners were challenged with a wide range of obstacles in their course of studies.

The most reported challenges by the participants were lack of sufficient study material, difficulties in accessing ICT and ineffective feedback. Dinca and Beige 2021:7) recommended that an open university should strive to achieve effective and balanced teaching and learning system that satisfies the desire of the learners to the extent that they wish to come back to the institution for further studies and feel proud to recommend the institution to others who intend to further their studies. Tarusikirwa (2017:45) cited the lack of research skills from the learners. In fact, according to Zvavahera and Msimba (2019:77), open universities do not have the required infrastructure and facilities in place and some students lack basic computer skills and they find it so difficult to teach them using the emerging online technologies.

African higher educational institutions are less advanced in terms of the way in which they employ LMS support services when compared with the European institutions like OUUK. The infrastructure needed to deal with the emerging technologies is not sufficient in the African higher education context. In addition,

the personnel required to execute the implementation task are not enough and some support staff need training as they are not skilled.

2.7 DIFFERENCES AND SIMILARITIES OF THE STUDENT SUPPORT IN GLOBAL INSTITUTIONS

Based on literature review, the similarities between universities in the global context in terms of the use of technology include the following: almost all distance learning institutions have their own LMS. LMS assists online instructors to manage and deliver courses, students have to do computer related courses to familiarise themselves with the use of technology. In all distance learning institutions, students are sparsely distributed, and some students are found in rural areas. This is more common in African universities.

Students use the online learning platforms to download the learning material, to exchange ideas with the other learners, to interact with their online instructors, and to submit their assignments. Furthermore, online platforms are used for administrative purposes, that is students can download their examinations timetables, enquire about the things their do not understand; check their assignment marks and their examination results. Almost in all distance learning institutions discussed earlier, LMS also offers learning to students as per convenient time and place provide faster and cheaper delivery material, learners can participate in virtual discussions, e-tutors can play a role in guiding the learners (Mncube, 2020:3).

One of the noticeable differences is that in certain universities like the University of Nalanda in India, the government plays a significant role in supporting students in rural areas. Funding is provided to support students in terms of network coverage that seems to be a challenge in countries with ODL institutions. Learners are also supported in terms computer-related infrastructure.

Another noticeable difference is that online instructors are given few students to support. For instance, at OUUK an e-tutor is allocated only 20 students whereas in developing countries online support is provided. Twenty students are a manageable group. In contrast, at Unisa, e-tutor is allocated 200 students which is difficult to manage. The module lecturers play a crucial role in supporting learners and there is little role played by e-tutors. At the University of Swaziland there is no mention of e-tutoring system. The University of Swaziland needs more innovations. For example, online learning is new, and ICT is not yet properly developed. Moreover, students have to phone or fax to the university when they require an Internet access.

Other global universities can play role in helping the University of Swaziland to maximise its potential in terms of e-learning and student online support.

2.8 OPEN DISTANCE AND E-LEARNING IN THE CONTEXT OF UNISA

2.8.1 Brief history and background of Unisa

Unisa is the largest ODeL University in the continent of Africa, with a student headcount more than 300,000. Over two decades after the transition from apartheid to democracy, vast inequalities across race, class, gender and socio-economic status persist in South Africa, with the majority of the African people still suffering the impact of the legacy of apartheid. Demographically, the African people constitute about 80.8% of country's total population, compared to whites, who constitute meagre percentage; yet African households carry the highest burden of poverty. Unisa provides distance education through e-learning in a country that is marked by vast socio-economic and extreme levels of poverty (Letseka & Pitsoe 2018.1).

Unisa has the following colleges: Agriculture and Environmental Sciences, Accounting Sciences, Economics and Management Sciences, College of Education, College of Human Sciences, College of Law, College of Science, Engineering and Technology, and College of Graduate Studies and School of

Business Leadership. There are also seven satellite regions/ study centres where the students receive various types of support. The HR department processes the documentation including qualifications of the e-tutors which provide online support to the learners. The salaries department is responsible for the payment of the e-tutors who provide online support to the learners enrolled in this ODeL context. The ICT department plays a key role (Mare & Muteza, 2020:73).

2.8.2 The Learning Management System

Unisa is one of the largest ODL institutions in the globe that use e-learning as the business model. As an ODeL institution, Unisa previously used Sakai as its LMS but recently adopted Moodle to make it possible for the learners in the vast geographical areas to interact in online discussions with other learners and e-tutors.

Abdullah and Motsweni (2014:4) assert that most universities that offer ODL courses have their own education portals for learning and administration support. These portals commonly referred to as an LMS, have interactive communication capabilities which can be used to engage learners, lecturers and administrative staff. Most universities have adopted technology enhanced environments to facilitate academic support. While other institutions across the country implement systems such as Click up (University of Pretoria), Blackboard (University of Johannesburg), and eFundi (North West University), with the LMS used at Unisa branded as myUnisa. Mtebe (2015:2) highlights that the most widely adopted LMS in sub-Saharan Africa are Blackboard, Sakai, KEWL, and Moodle. Unisa adopted Moodle.

LMS is a web-based software system that assists e-tutors to manage and deliver courses online. It helps in the administration, tracking and reporting of learning process. Unisa uses web 2.0 technologies to support the students enrolled in ODL context (Abdullah, 2014:13). Furthermore, Padayachee (2017:1) posits that new educational technology services and features are driven by advances in information technology and growing market. Virtual learning systems, also known as LMSs, have been formally adopted by higher education institutions to stay

abreast of the latest educational technologies, to be competitive in the higher educational domain and to afford the stakeholders new innovative ways of teaching and learning (Nsamba, 2019:3; Berga, Nelson, Buro, 2021: 678).

Goosen and Molotsi (2019:5) and Grigoryan (2020:67) argue that institutions offering ODeL are increasing support levels by providing them with educational opportunities to select those that they feel most comfortable in using towards facilitating e-learning. Management systems are further empowering e-tutors in collaborating with students at a distance. Technologies provide innovative opportunities for students towards interacting with instructors and fellow students to acquire knowledge and skills with regard to their studies.

The Internet makes it possible for the online students to connect with their e-tutors in an online platform. ODL institutions provide support to students using LMS. More importantly, students are able to communicate with their e-tutors and are able to make valuable contributions in the discussion forums (Abdullah, 2014:5).

Moodle may be assessed by lecturers and students from any location where there is network coverage, at any time and as long as is required. To access LMS, the students also need devices like computer, mobile phones, tablets or iPods. The LMS assists the students to access to course material, submission of assignments and quizzes and discussion forums. Moodle offers tuition and administrative functions to develop and enhance academic interaction and improve communication between Unisa and students.

Moodle features a wide range of e-learning enabling functions among which we want to mention the course administration and my students. The course administration section is a platform for staff to manage the course assessment, assign and manage assignments, course readings, examination question papers and examination statistics, F1 concessions, supplementary concessions that are granted to students who have one outstanding module to complete a qualification, and to manage tutor student grouping (Mncube, 2020:5).

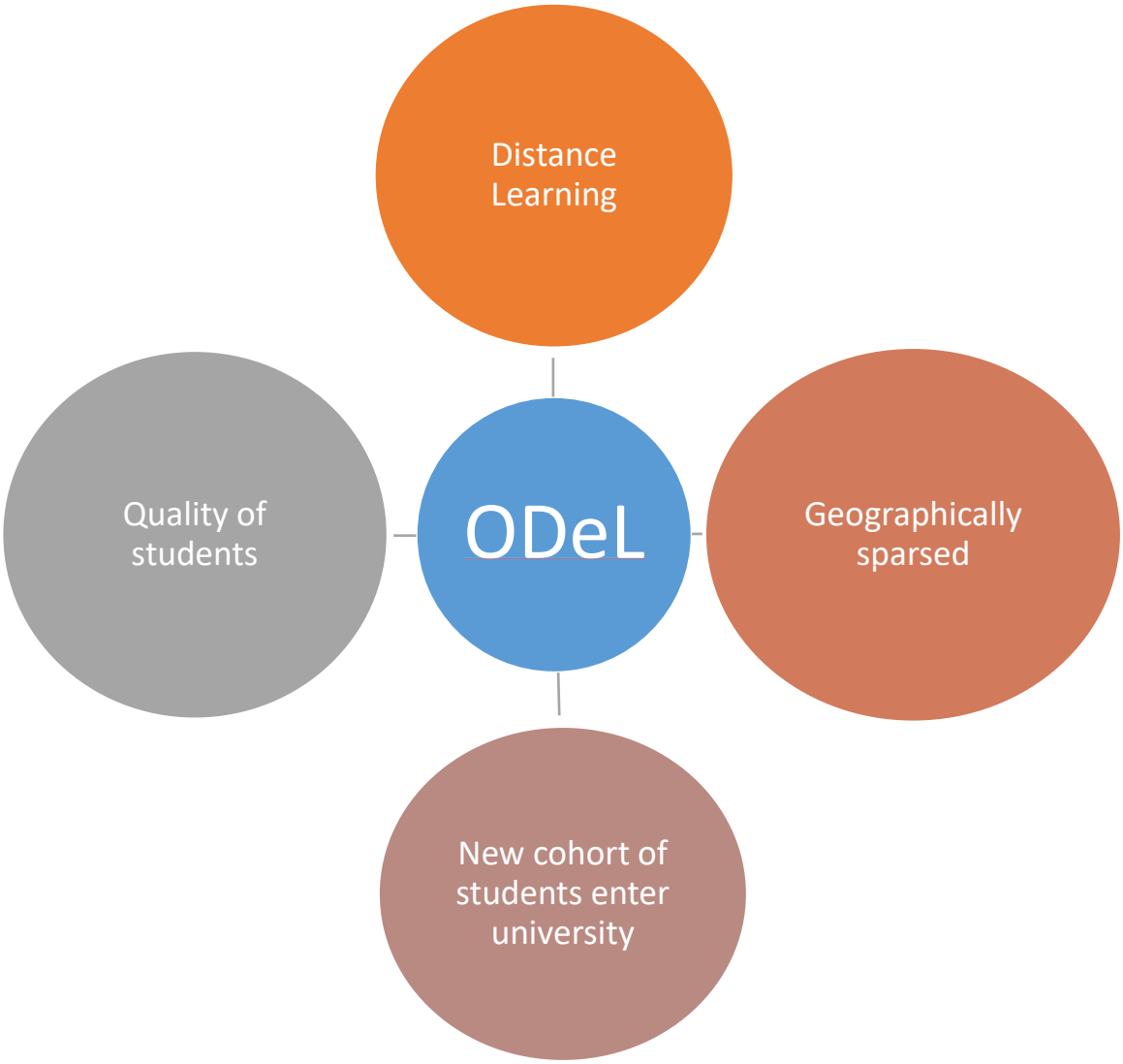
Each course portal provides space for announcements, uploading of the official study material and additional resources and prescribed books. It also features the discussion forum, where staff can post important announcements and notices for students, reply to student queries and initiate exchanges among students on course-related issues, or intervene where there is an impasse and give direction in ongoing discussion among students. The discussion forum portal tool provides a user-friendly and enabling space for staff-to-students and student-to-student sharing of ideas and experiences online (Mncube, Dube & Ngulube, 2017:678).

In a nutshell, Unisa is one of the giant ODL institutions in the globe. The university uses ODeL as a business model. The LMS makes it possible for the students in vast geographical areas to interact in online discussions with other students and online instructors. As a result of implementation of ODeL model, students opt to study at home rather than going to the on-campus higher learning institutions that are expensive. Students can do and complete their courses through e-learning, using modern technologies anywhere in South Africa. E-tutors also interact with students in conferences by using trending technologies such as Microsoft Teams.

2.8.3 Student support offered by e-tutors at Unisa as technology enabled environment

The following diagram depicts situation at Unisa as ODL and technology enabled context.

Figure 2: Diagram depicting the Unisa ODeL model



Adapted from Matoane (2018:7).

Figure 2 shows that Unisa is a global ODL institution that use e-learning as a business model and therefore also known as ODeL. The university enrols a diverse number of potential students ranging from students located in

geographically sparse areas and all spheres of life. Students enrolled at the university receive online support through the LMS.

Unisa is a mega ODL institution in Africa. It is considering advocating totally online tuition in future. Currently, e-learning is used for online teaching and learning. Technology is viewed as the sole driver to ensure that learning outcomes are achieved. Adopting an integrated robust best practices framework to online teaching and learning practices based on multiple components for academics is far more important than being merely technically competent. The university has a tripartite mission to deliver quality tuition, research and community engagement within ODeL sphere. Integration is achieved by consolidating the current teaching, research and community engagement practices of the institution within a consolidated best practices framework (Abdullah 2014:1; Koko & Althin, 2021: 161).

Unisa supports the students through the online platform called Moodle. The e-tutors play a crucial role in supporting the students enrolled in an ODeL context. According to Pitsoana, Mahlo and Lethole (2017:3) and Roberts (2018:1), e-tutors perform pedagogical, social, managerial and technical roles.

Pedagogically, e-tutors perform the following roles: act as the first point of contact, facilitate student interaction with the study, facilitate and moderate discussions among students, respond to the concerns, queries and questions, offer further explanation of difficult concepts, guide students to further reading or sources of information, provide feedback on tasks and activities and monitor progress of the students (Tshaka, 2018:5). In the beginning of each semester, each e-tutor is given 200 learners to support. However, this depends upon the number of students enrolled in each semester in each particular course.

The social roles of e-tutors include to personally welcome students, encourage interaction and motivate student's active participation, praise and reinforce good behaviour and infuse some humour so that online environment becomes a fun place (Tshaka, 2018:6). Managerial roles of an e-tutor include responding to non-academic questions and refer students, accordingly, provide instructions and

schedules, inform administration and sending out regular announcements (Matoane, 2018:8).

The technical role of e-tutors on the other hand includes ensuring that students are familiar and confident with using the features of the online learning environment, reassure students who are nervous about technology and other simple practical advice about how to use technology effectively and answer basic technical questions and put students with more complex technical issues in touch with the ICT helpdesk (Mare & Mutezo, 2021:233).

The key performance areas for the e-tutors are to facilitate online delivery of tutorial material, manage students' experience online, facilitate students' interaction with their peers online and provide students with academic and technical support (Pitsoana, Mahlo & Lethole, 2020:64).

Unisa is using LMS called Moodle. There are more opportunities offered by this platform to Unisa students as they are able to communicate with their e-tutors, engage with the other students, view announcements, download the study material, tutorial letters, and execute administrative tasks like changing their contact details and postal addresses. However, there are problems encountered by other students. These include poor connectivity, expensive digital devices and expensive data.

2.9 CHALLENGES OF GLOBAL HIGHER EDUCATION INSTITUTIONS WITH TECHNOLOGY

Queiros and De Villiers (2016:5) and Masing (2017:2) contend that online learning is the means of reaching marginalised and disadvantaged students in South Africa owing to infrastructural challenges, poverty and unemployment. Nevertheless, these students encounter obstacles in online learning. Their research revealed that there are low levels of computer or Internet access at home, which is the concern in an ODeL context. The low levels of computer or Internet access is caused by

poverty and skyrocketing unemployment rate. They concluded their research by stating that institutions moving to online learning in developing countries should pay close attention to their students' situations and perceptions and develop a path that would accommodate both disadvantaged and techno-savvy students without compromising quality education and learning.

Arko-Achemfour (2017:26) and Makoe and Nsamba (2019: 134) assert that studying through distance can be a nightmare for any student, but it can be worse for rural students for diverse reasons, namely, poor infrastructure, poor network coverage, poverty and unemployment. To ensure that all students studying through ODL system have enduring learning experiences and succeed, the system builds support as one of its components.

Ngubane-Mokiwa (2017:27) concurs with Arko-Achemfour's (2017:26) views that poverty and unemployment could hinder the process of e-learning. Consequently, financial constraints make it difficult for poor students to buy equipment needed for online discussions. For example, to engage in online discussion one needs a computer or iPod and data to get connected. This has been evidenced in my interaction with students online. Ponte and Jordan (2020:691) also agree that students find it difficult to engage in discussions because they do not have money to buy data. As a result, it is difficult for them to connect.

In a research conducted by Holomisa and Dube (2015:290) on reflections on the readiness of Unisa in some of the centres of the Eastern Cape region, they found that there is a shortage of computers and related infrastructure in e-learning. Even in the study centres, most of the computers are old and not functioning well. Shortage of staff and computers might have negative impact on student support. Hence, e-learning relies heavily on the availability of computers and other related infrastructure and resources. Another challenge highlighted in research is the security of computers in the study centres (Ramorola, 2018:5).

Primecz (2020:124) also asserts that the digital divide has been highlighted recently where all universities adopted an online learning style for learners. Students from disadvantaged universities, poor socio-economic background do not

have an access of digital tools. There are seven major challenges experienced by students.

Firstly, poor socio-economic background is also a challenge. Graham and Jones (2016:12) assert that socio-economic background and cultural differences can affect students enrolled in distance education institutions involved in online learning. Unisa accommodates diverse cultures (Dichaba & Pitsoe 2015:1356). Students coming from remote geographical areas experience language barriers and therefore, find it difficult to interact with their peers and e-tutors in online discussions. Other challenges include communication problems, lack of problem solving skills and other aspects such as cultural problems and technical competencies (Letseka & Pitsoe 2018:7).

Letseka and Pitsoe (2018:8) maintain that there is unequal distribution of resources in students from poor socio-economic background. Students from rural areas find it difficult to access the Internet and they find it difficult to travel to study centres where there are computers owing to unemployment and poverty.

Secondly, there is lack of training in students enrolled in distance learning institutions (Karip, 2019:29). Ding and Wang (2017:3) argue that students need to be trained and given skills on how to interact with other students and their lecturers online during the discussion forums to yield the better results, the importance of exchanging ideas during the online discussions, the importance of active participation and other pedagogical issues. Andrew and Richards (2018:8) also argue that there is lack of training in academic writing in students enrolled in ODeL context. As a result, students tend to plagiarise. I also agree with their views that students enrolled in distance learning institutions need to be digitally equipped. For an example, in my daily encounter with online students, I usually tell them that active participation in online discussion forum will help them not only to understand the content better but also to develop academic skills, to prepare for assignments, activities, and final examinations.

In his studies on student support gaps in ODL context, Arko-Achemfour (2017:27) also recommends the importance of training staff on how to use the various e-

learning tools. Students need to be trained on how to use computers. Training of staff members, e-tutors and students will yield the better results and students will perform better.

On their research about digital literacy for the students studying in a ODeL context, Maphosa and Bhebhe (2019:190) and Bervell, Umar and Kamilin (2019:39) found that majority of the students enrolled in ODeL are not digitally competent in the sense that the majority of them are unable to search for information from the Internet, are unable to disseminate digital information, lack basic digital technology skills, are unable to plan and manage the virtual projects and they are unable to use e-textbooks.

Holomisa and Dube (2015:290) also concur that in most regional centres, staff members are not competent on how to use the computers. For example, when the students require support on simple things on how to construct a table of content using a computer, staff members find it difficult to execute such simple tasks.

Thirdly, poor technical support is one of the problems that I experienced in online interactions with students are technical challenges. The students also complained about the technical challenges including difficulties to connect to the learning platform. Problems range from failure of the system to save the work when posting activities, failure of the system to create a discussion forum, unavailability of the system to interact with students. When you login to discussion forum, one sometimes encounter messages such as Unisa.ac.za is not responding (Letseka & Pitsoe, 2018:8).

Fourthly, the cost to use Internet data is another challenge. In a research conducted by Daneyeefard (2020:29), the majority of students studying online mentioned the cost of data as one of the reasons for poor engagement with their e-tutors and their peers. Gilbert (2018:3) concurs that South African data favours rich over the poor. Mjo (2019:5) and Bolliger and Halupa (2018:156) argue that Vodacom and MTN are charging exorbitantly when it comes to data and therefore, this makes it difficult for the poor South Africans to use it. They also maintain that, according to Competition Commission’s findings, these two giant data companies

charged users more for data when compared to other countries. Consequently, these two companies have been given an ultimatum by the Competition Commission to reduce prepaid monthly mobile data bundles (Cokayne, 2019:6).

Fifthly, poor network coverage: In a research conducted by Tarus, Gichoya and Muumbo (2015:16) on challenges of implementation of e-learning in Kenyan open distance learning institutions they found that one of the problems hindering the programme is poor network coverage. Students in some remote areas find it difficult to connect with Internet owing to poor network coverage. Moreover, students sometimes find it difficult to interact with other students online, and to access the content online posted by their e-tutors as the result of poor network coverage (Ahmad & Jan, 2021:234).

Sixthly, lack of discipline from students is one of the challenges in online interaction between the students and lecturers. Sithole, Mupinga, Kibirige, Manyanga and Bucklein, (2019:16) and Herlo (2017:345) argue that lack of self-discipline hinders online interaction between the students and lecturers, among students themselves. Students lack self-discipline; hence, they delay in replying to the posted activities and questions. Other things include lack on non-verbal cues, students who lack self-direction, students who depend on what their e-tutors and other students are saying. Moreover, some students lack critical thinking, students with weak self-control, students who lack self-regulatory skills and self-motivational skills, students with low self-esteem and lacks social competence.

Pozzi (2016:103) supports Sithole *et al*.'s view and his colleagues that self-disciplinary problems such as learners who repeat the similar activities even if the feedback of that particular activity has been given and learners who copy the lecturers' words and the work from the reading materials are the problems common in discussion forums.

Seventhly, lack of student academic readiness is another common challenge. In a research conducted by Sithole *et al.* (2019:16) on challenges for e-learning in higher education, they concluded that lack of student academic readiness is one the hindering problems in the implementation of technologies. Other factors

include lack of self-discipline, lack of computer technology skills, and time-zone differences. In addition, the switch to online instruction requires development of more inclusive pedagogical approaches to capture different learning styles. They also conclude that it is crucial that instructors be equipped with knowledge and ability either to pre-empt these challenges or to resolve them should they arise.

Priyanka and Sanju (2019:88) assert that loneliness is one of the challenges of distance learning. Many students may decide to work on their own without using the support provided in the learning platforms. They do not participate in the virtual activities, and this ultimately result in poor performance. They further assert that the contributing factors to loneliness of students studying online is owing to the variables including lack of time, lack of access to technologies, lack of resources, lack of expertise as many rural students are computer illiterate as well as lack of support. Karip (2019: 21) suggests that online e-tutor and student interaction could provide a learning community environment that reduces the feeling of isolation and may improve the student performance at an ODeL institution.

Kalata (2017:397) sums up by pointing out that ODL is faced with the following challenges: first, quality, stating that it is an admissible fact that a large section of people across the globe interrogate the academic quality of distance and online learner, MOOCs arguing that in the past years, the distance education market has gained new attention with a new term known as MOOCs. He also pinpointed the problem of big data. Data in different forms like text, audio, image, and video are generated through different electron media like keyboard, microphone and camera. In every second, several tera bytes of data are stored in memory and shared on the Internet. The problem of management of these voluminous data is known as big data problem and security and the problem of data security is one of the primary concerns of every organisation.

2.10 DESIRABILITY OF TECHNOLOGY IN GLOBAL INSTITUTIONS

Technology improves communication between students and lecturers. Mncube, Dube and Ngulube (2017:7) and Valai, Schmidt-Crawford and Kennet (2019:3) argue that e-learning provides opportunities for enhanced, broad and sustainable communication, interaction, sharing of information and experiences among students and lecturers in a relatively short time. The spin offs that students gain from enhanced communication is that students get feedback on time which increases the probability of completing courses just-in-time which in turn reduces the study costs (Albrecht, 2018:4).

Peterson-Ahmad and Pemberton (2018:165) concur that active interaction with the students in the online discussions improves communication and motivate them to engage with others regularly. Technology enhances engagement. Nussli, Lucerne and Oh (2018:24) underscore the importance of active participation in virtual discussions. For instance, in their research findings, they concluded that students who are active in online discussions develop problem solving skills, and positive attitude change. More importantly, they are involved in online discussions and motivated to learn; consequently, they develop social skills. Online discussions also create the feeling of acceptance among the students and their tutors.

Cox (2015:2) encourages use of peer-based e-tutoring system to facilitate the online discussions. Her research findings have shown that peer-based-tutoring promotes active participation of the learners involved, promotes the learners' engagement in the learning content and develops the confidence of the student who is performing the role of an e-tutor. Moreover, students who performed the role of e-tutor adopted a supportive, collaborative and educational style, which was maintained even after their role as e-tutors has ended.

Technology enhances creativity, for instance, Martinez, Bermejo and Penalvo (2017:1-17) concluded that the use of technologies enhances the creativity of students; hence, students come with the new ideas and new innovations, effective use of technology promote the interaction of students with contents for learning and improves the students' performance in the educational process.

Technology improves performance and success rate. Hogan and Devi (2019:17) claim that online discussions improve learners' performance, increase learners' motivation and reduce the distance between student-student and student-teacher interactions. This interaction results in a high success rate in an ODeL context. As personal bond developed among students and their peers and among students and their e-tutors, student isolation is decreased (Hogan & Devi, 2019:17).

According to Graham and Jones (2016:21), to improve success rate, an effective leadership in virtual teams is necessary to keep the teams on task and to enhance team behaviours, communication and processes. The e-tutors should bear in mind that they are dealing with people from different cultures in virtual classrooms. Success factors in virtual intercultural teams include good communication, cultural adaptation and technical competence.

Technological devices improve the learning in students enrolled in ODeL; hence, they perform better in assignments and examinations. Online discussion forums have shown to be the more effective way of imparting knowledge than any other method of instruction for the goals of retention, application and problem solving. Online discussion groups are a way to create social networks, share ideas and seek advice (Nusli *et al*. 2018:24).

Technology enables students to develop critical thinking; hence, they are able to use quizzes and solve problems that require higher mental order skills. According to Todd, Ravi and McCray (2019:19), technology plays a crucial role in the development of critical thinking in students studying online. Critical skills include applying, analysing, evaluating and creating.

Online discussions improve student-to-student interactions. According to Chadna (2017: 16), student-to-student interaction is vital part to any course. In his study for deepening engagement, he concluded that peer interactive design is an effective teaching method to expand student learning; one that engages students with each other while deepening their learning. Peer interaction in online classroom boosts academic progression and engages students in deeper learning.

Adams *et al.* (2018: 2), and Andrew and Stokes (2018: 7) contend that all of the above advantages is made possible by employing a variety of virtual learning tools such a discussion forums, quizzes and e-Portfolios. In fact, in ODL universities, online learning takes place via institutional learning environments, which can include the variety of features (Dommet, 2019:17).

The major advantage of using technology centres around the tremendous amount of saving for learning institution, which no longer rely on reserving on physical location to teach courses. Protopsaltis and Baum (2019:1) contend that technology has the potential to increase education, enhance learning experiences and reduce the cost of providing high-quality postsecondary education. Even the students coming from poverty stricken rural areas can afford online education; hence, they are able to study at home.

Students who have work and family obligations that make it difficult for them to manage traditional class schedules can do online coursework on their own schedules at a cheaper rate. In addition, the lack of physical campus or classroom facilities and the potential for the larger class sizes without real-time professors could lower costs and reduce prices for students. ODL institutions also benefit since it is inexpensive to post lectures online for a large number of students to access the material (Boldly, Leary & West, 2019:301).

However, Dommet (2019) disagreed with Protopsaltis and Baum's views highlighting that high quality courses with meaningful interaction among students and between students and faculty are not money savers. He argues that online learning is far from being a silver bullet (Dommet, 2019:18).

Social networking sites constitute an important research area for scholars interested in online technologies and their social impacts. Van Niekerk (2015: 26) and Abdallah and Murtic (2018:1) contend that researchers from diverse fields have studied the application, implications and practices of social networking sites. There has been remarkable growth and increased popularity of social networking sites among individuals of all ages, therefore highlighting the need for academic study.

Technology reduces students' dropout rates. Mtebe (2015:53) and Jain (2017:1) argue that LMS has been successfully implemented in many ODeL institutions in developed countries. They have managed to improve students' learning performance, reduce students' dropout rates, and they have increased students' satisfaction with offered courses. Institutions in sub-Saharan Africa have been adopting them in bid to gain similar benefits as their counterparts elsewhere.

Sodiqorich and Burxonovish (2020:67) and Qwabe and Khumalo (2020:173) buttress that e-learning and technology ease the access of information. Moreover, much is saved, it offers better communication means, cost effective, innovation in many fields, offers better learning and teaching. Technology helps students to reach new levels, helps educator to create blended learning environment and leverages digital tools for assessments and brings the new levels for teaching and learning in the virtual classroom.

The advantages or benefits of e-learning can be summed up as follows:

- It is flexible when issues of time and space are considered.
- Every student has the luxury of choosing the place and time that suits him/her.
- The adoption of e-learning provides the institutions as well as their students much flexibility of time and place of delivery according to learning information, e-learning enhances the efficacy of knowledge and qualifications via ease of access to huge amount of information.
- It is able to provide opportunities for relations between students by the use of discussion forums (Ravencroft, 2020:55).

Recent research found that more students study their courses online (Clark 2020:34). Various students explicitly indicated that online education is more convenient and flexible. Students opted for online programmes rather than going to the campus. More importantly, online students can take full time jobs while studying at the same time; they are able to spend more time with families; they study better on flexible schedule instead of a fixed one.

Recent findings by Choudhury and Pattnaik (2020:234) revealed that online degrees save commuting time and students can complete modules at their own pace and schedule. Students can study in the morning, or at night, whatever is working best for them instead of adhering to the class schedule. Students can have their own environment. Instead of soundproofing the room because of many housemates or studying in an overcrowded university library, students set up their quiet space in any area where they want study in their convenient time. An online learning environment offers educational domain that is unique in the terms of the potential interaction, participation and collaboration.

In their research findings on online education, Bicen and Demir (2020:44) report that the use of social media can also create a unique learning experience by enabling students to engage in networks that extend beyond the traditional confines of the classroom. Online degrees are more affordable; that is, students can save more money when undertaking an online programme. Online programmes are also comfortable. The students can develop important skills.

Studying online requires skills such as self-discipline, self-motivation and communication. The skills acquired online also help the students in their workplace environments. Students studying online communicate regularly with their e-tutors and their peers. This communication takes place either verbally or in a written form. These forms of communication sharpen students' communication skills. Moreover, Rogers, (2019:103) avers clearly that incorporating web-based engagement and participatory interaction in courses. The desirability of technology overweighs the challenges experienced by distance learning institutions in technology use.

2.11 CHAPTER SUMMARY

Generations of distance education and delivery technologies were discussed. There is a strong connection between the fifth generation and the 4IR because it covers the aspects such as intelligence flexible learning and satellite

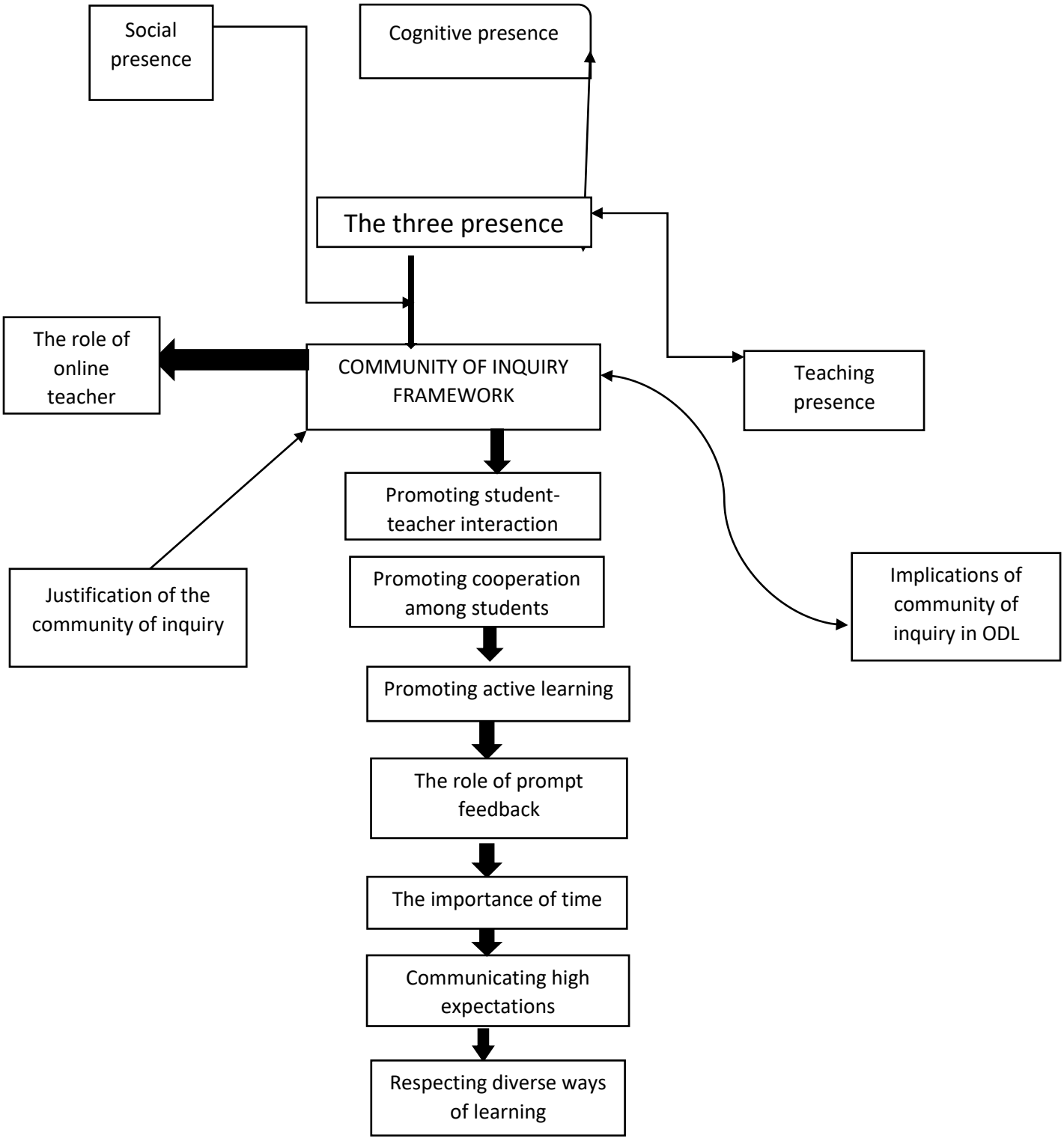
videoconferencing. Distance education and technology in global communities focusing on aspects like state of distance education and technology in ODL context, emergence of technology in ODL institutions, the impact of the 4IR and its impact on ODL were fully discussed. Various selected global ODL institutions were discussed. The main focus was to examine how the institutions support their studies using the new and emerging technologies. Similarities and differences on how the selected institutions support their students using technology was briefly discussed. The University of South Africa as a selected case study was fully examined. Chapter 2 was wrapped by discussing challenges experienced in implementing use of technology in ODL and desirability of technology in ODL.

CHAPTER 3: THEORETICAL FRAMEWORK

3.1 INTRODUCTION

The study was underpinned by Community of Inquiry Framework which entails a process of creating a deep and meaningful learning experience through the development of three independent elements, namely, social, cognitive and teaching presence (Garrison, 2019:66; Biccard 2021:41). According to Garrisons (2018:1), Community of Inquiry is a theoretical framework which engages in a purposeful critical discourse and reflection to construct personal meaning and confirm mutual understanding. Furthermore, Community of Inquiry theoretical framework represents a process of creating a deep and meaningful learning. Garrison, *et al.* developed Community of Inquiry theoretical framework in 2000. Implications of the Community of Inquiry framework in distance learning will be highlighted. The justification of the Community of Inquiry theoretical framework as the leading theory in this study will be fully discussed.

Figure 3: ROAD MAP OF CHAPTER 3

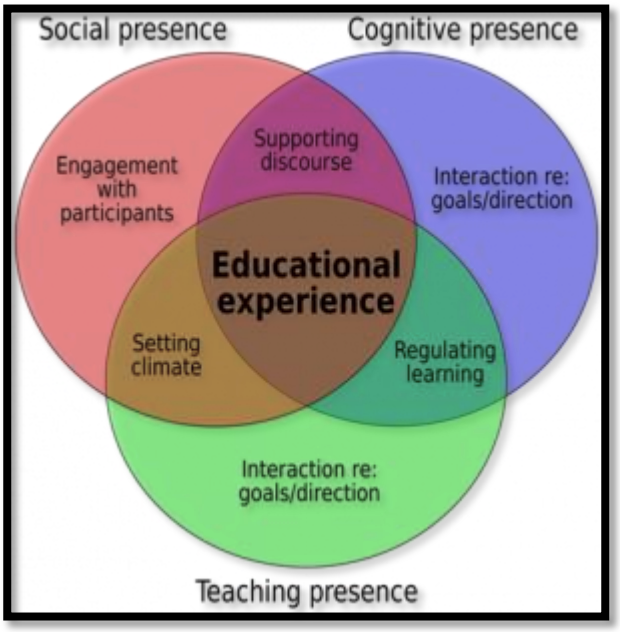


3.2 COMMUNITY OF INQUIRY FRAMEWORK AS THE THEORY UNDERPINNING THE STUDY

The theory was conceptualised in 2000 (Garrison, Anderson & Archer, 2001:123). Several scholars including Bektashi (2017: 5) and Lease (2018:51) employed this theory in their research papers. The Community of Inquiry framework is the model process of online learning. It is assumed that effective online learning, especially higher order learning, requires the development of community, and that such development is not a trivial challenge in the online environment. The Community of Inquiry framework is a dynamic model of the necessary core elements for both the development of community and the pursuit of an inquiry, in any educational environment (Garrison, 2019:2). Garrison (2018:1) defines community of inquiry as a group of people, in a collaborative engagement, communicating and reflecting with purpose, construction personal meaning, and confirming mutual understanding.

Community of Inquiry model describes how learning takes for the groups of students through the educational experience that occurs at the intersection of social, cognitive and teaching practice (Garrison, 2018:5). Moreover, Community of Inquiry framework describes critical prerequisite factors for deep and meaningful learning in the online learning environments (Ziya, Mustafa & Ugur, 2016:56; Gonzalenz-Anta & Orango, 2021:71). Community of Inquiry framework suggests that social presence, cognitive presence and teaching presence are essential elements to foster successful educational experiences in computer-mediated distance learning environments (Garrison, 2021:13). The diagram depicts that the three elements are overlapping.

Figure 4: Diagram depicting the three elements



Adapted from Garrison, *et al.* (2010:7).

3.2.1 Social presence

Garrison (2020:22-30) describes social presence as the ability to project one's self and establish personal and purposeful relationships. It is the ability of students to project their social and personal characteristics into the community of inquiry, thereby presenting themselves as real people. Instructional media such as computer conferencing engender high levels of student-student and student-teacher interaction; therefore, they can support models of teaching and learning that are highly interactive and consonant with the communicative ideals of learning (Lee 2017:15; Anderson & Rivera-Vagas, 2020:59). In this study, social presence can be defined as the ability of students to project themselves socially and emotionally thereby representing themselves as real people in a community of inquiry. Students engage themselves in discussion forums, support each other, ask questions, motivate each other, solve problems and share ideas. In addition, students communicate purposefully in the discussion forums; they develop personal and affective relationships. Their personal and open communication contributes to group cohesion.

The participants were able to identify with the community to communicate purposefully in trusting the environment and develop interpersonal relationships by the way of projecting their individual personalities. Dewey believed that learning results from experience that is contextually based and socially situated. Social presence is viewed as directly impacting the development of community and collaboration in online courses, which are an integral part of Community of Inquiry framework. Garrison (2017:4) describes social presence as the ability to project one's self and establish personal and purposeful relationships. The three aspects of social presence are collaboration, open communication and group cohesion.

The three components of social presence, namely, collaboration, group cohesion and effective communication relates to the Unisa context. Pertaining collaboration, the e-tutor and the student and students work together during the discussion forums. Moreover, collaboration is made possible by effective communication between the lecturers and the students and between students themselves. The exchange of information between students and e-tutors yields the fruitful results. The main key is active participation by online students during the interaction process.

Glossos, Koutsouba and Mavroidis (2016:99) posit that group cohesion is a social presence that characterises groups whose members interact with each other and refers to the push factors that influence push group members together. The main push factor at Unisa is group success that is all groups allocated to the e-tutor should work hard, work together, make contributions, and participate in activities and group forums to reach the common goal – success. Pertaining the group size, each group consists of 200 group members (Smadi, Chenmberlain & Shifazi, 2021:203).

Biccard (2021: 37) asserts that social presence is of less importance if the learning activities are information acquisition and there are no collaborative assignments where students can benefit from the perspectives of others. The issue addressed here concerns the nature of social presence and how it needs to shift as the study evolves. As valuable as it is to establish effective communication and developing

social bonds, it is essential that the group feels secure to communicate openly and coalesces around a common goal or purpose for a community to sustain itself. Social presence must move beyond simply establishing socio-emotional presence and personal relationships.

Cohesion requires intellectual focus that is, open and purposeful communication and respect. Thymniou and Tsitouridou (2020:88) found that group cohesion is online community of inquiry; it reviews social, cognitive and teaching presence and issues significantly associated with social presence and perceived learning outcomes. It is argued that social presence in a community of inquiry must create personal but purposeful relationships.

However, developing personal relationships takes time and it may be that we should be focusing on open communication first. What is required is a clear understanding of how social presence shifts to support the educational objective of the community. It was Garrison (2019:17) who revealed the apparent shift of social presence over time in online course discussions. He reports that effective and interactive open communication categories increased while cohesive indicators decreased. The explanation was that it was possible that the use of such reference became less necessary as a clear classroom community was formed. Another possible explanation addresses the fact that the discussion was more exploratory than collaborative. Cohesion may well have been a secondary issue under this circumstance. That is, collaborative tasks focused on practical outcomes may well reduce the focus on the effective and emphasise cohesive comments to achieve a successful outcome.

Another consideration in interpreting these findings is the gender balance of the sample of which two-thirds were female. In this regard, Biccard (2021:38) has pointed to the possible differences in how male and female students communicate. This, of course, would be confounded by other issues such as community development and nature of the task. To address these issues, findings need to be interpreted in the broader context of a community of inquiry that concurrently considers social, cognitive and teaching presence issues and variables. This is

contrary to the nature of the shift in social presence reported by Siah (2020:94) and Biccard (2021:36), who found that the frequency of effective and open communication comments decreased while group cohesion comments increased. The interpretation was that effective and open communication was necessary to establish a sense of community. It was only after the social relationships were established and the group became more focused on purposeful activities did cohesive comments begin to take precedence. Not only did the focus change but it is hypothesised that because a sense of community was established, there was less need for social reinforcement.

3.2.2 Cognitive presence

In Community of Inquiry framework, cognitive presence is defined as the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse, that is, it is the extent to which students are able to construct meaning through sustained communication. In other words, students are more likely to grasp and retain information when they create assignments and activities about the topic (Garrison, 2017:45; Pozzi, 2016:33).

In the Community of Inquiry framework, cognitive presence is seen as consisting of four phases of practical inquiry. Researchers have been able to find the evidence of practical inquiry in online discussion, but initial studies of cognitive presence revealed that the most postings in online discussion forums concentrated at the exploration phase where participants shared information and brainstormed ideas. Several studies in this area have found that inquiry revealed in online discussion rarely moves beyond the exploration phase (Lee 2017:19; Wood, Symons, Gray, 2021: 59).

Garrison (2017:5) asserts that cognitive presence is a process of inquiry that includes thinking, listening and expressing thoughts in the process of critical discourse. He stresses that cognitive presence cannot be understood in isolation; it is the purposeful and collaborative process interdependent with teaching and social presence. Cognitive presence allows the e-tutor and the students to explore concepts of the course through collaborative discussion.

The third presence revolves around practical inquiry and critical thinking. E-tutors create the ideal environment for cognitive presence when helping the students to engage in critical thinking and encourage them to develop their own questions and responses in the spirit of practical inquiry (Pozzi, 2016: 105).

Much of the teaching presence, cognitive presence begins during the design of the course. When students interact online with the content of the course, engage in critical thinking about the concepts and issues in the learning community, and apply knowledge to appropriately challenging assignments, cognitive presence begins to take shape in the online course (Bullow, 2016:328).

Cognitive presence focuses on helping students connect and apply new ideas. If students perceive the course content and activities as relevant to their personal needs and goals, they will be motivated to learn and remember the content in future (Burke & Larmar, 2021:671). Bektashi (2017:4) asserts that to build a strong cognitive presence in the virtual class, e-tutors need to build relationships and community with their students, e-tutors need to design and facilitate discourse and add human dimension to the course, and online teachers should help the students to connect and apply new ideas they are learning.

Community of Inquiry, therefore, relates well with Moodle because there is student to teacher, student to student and student to content interaction. It is in this regard that the theory is considered in the context of this study as the lens of this study (Deming, Coldin & Katz, 2021:170).

According to Barbour (2018: 39), the primary issue worthy of further exploration in terms of cognitive presence relates to the progressive development of inquiry in an online learning environment. Cognitive presence is defined in terms of a cycle of practical inquiry where participants move deliberately from understanding the problem or issue through to exploration, integration and application. The issue revealed consistently in the research findings is that inquiry invariably has great difficulty moving beyond the exploration phase.

Siah (2020: 95) observes that integration and resolution are more demanding than exploration and, as a result, increased time for reflection is required. More specifically, he maintains that faculty needs to be more directive in their assignments. Similarly, Caskurlu and Richardson (2020: 441) conclude that the reason discussions do not reach the highest levels of inquiry is strictly related to the role of the e-tutor. Others have also speculated that the role of the instructor is a major factor. In another study by Smadi, Chanberlain and Shifaza (2021: 179) note that the question initiating each of the online discussions influenced the level of the responses from students.

Social, cognitive and teaching presence issues play an important role in the type of cognitive activity evident in the discussions. When questions specifically asked students to engage in practical applications, discussions did progress to the synthesis and resolution phase. Interestingly, it was suggested that confirmation did not come from the group; the individual confirmed or rejected their own solutions. If there are no shared goals requiring a collaborative solution, the transcripts of online discourse will not reveal discourse that has moved to the resolution phase. Individual reflection may take place and if required, solutions may be posted, but there will not be any discourse (Cypress, 2017:390).

Therefore, in addition to teaching presence dimensions such as facilitation and direction, as noted previously, well designed tasks are also important to see evidence of resolution in a community of inquiry. The importance of designing appropriate tasks to move students through to resolution is also reinforced in a study specifically focused on online collaborative problem solving. Where students were specifically tasked to formulate and resolve a problem, responses were distributed throughout all of the five problem solving processes, understanding the problem, building knowledge, identifying solutions, evaluating solutions, and acting on solutions (Siah, 2020: 94).

Biccard (2021:38) posits that participants engaged more in problem resolution than in problem formulation – the converse of previous cognitive presence practical inquiry studies. This speaks strongly to the purpose and design of the learning

activity. If the activity is problem or case based, there are clear expectations, and appropriate teaching presence is provided to the participants. It is very important to facilitate and yet not dominate the discourse and at the same time, be prepared to provide crucial input to ensure that the community moves to resolution. As a subject matter expert, relevant information should be interjected, and diagnoses of misconceptions are crucial to productive discourse. This is a delicate and challenging balance of which an experienced tutor would or should be very cognizant.

According to Yidirim and Seferoglu (2020 149), educational leadership comes in more than one form. From an educational perspective, the distinction between facilitation and direct instruction may be worth preserving. A supporting explanation and reasonable discussions may get stalled at the exploration phase as found in the group dynamics literature. The group dynamics literature has shown that groups do not easily progress to the performing stage. Participants need to connect to the group and collaborative decision-making proceeds along four hypothesised stages, namely, forming, norming, storming and performing.

Groups need clear goals and time to come together and function in a productive manner. The point is that groups do not naturally coalesce and move to integration and resolution phases, particularly in situations where the task and challenge is to make sense of complex and disparate information. Direction and facilitation are required to establish cohesion and ensure messages are developmental that is, more than “serial monologues or personal declarations”. From the participants’ perspective, moving the discussion developmentally would be enhanced considerably by enhancing the metacognitive awareness of the stages of inquiry and how this relates to the particular task at hand (Biccard, 2021: 35; Makarova, 2021:38; Brule, 2018:451).

One suggestion is for participants to be made cognitively aware of their contributions by requiring that they identify the level of the response. Siah (2020: 95) recommends that students self-code their postings. They go on to say: The

strategy would encourage students to keep track of and to think about how their responses relate to the collaborative learning objectives set by their e-tutors.

Self-coding their own roles and responses may raise students' awareness, for example, of the four cyclical categories of the practical inquiry model. Pertaining social, cognitive and teaching presence issues, Lacka and Wrong (2019: 23) also suggest that the instructor should provide direct instruction and model self-coding. In this regard, it may be helpful for the instructor to provide a metacognitive commentary as to what they are doing and why. This is clearly a teaching presence issue and challenge.

3.2.3 Teaching presence

Teaching presence entails the design, facilitation and direction of cognitive and social processes for the purpose of realising personally meaningful and educationally worthwhile learning outcomes (Garrison 2017:5). According to Majeski, Stover and Valais (2018:3), teaching presence aims to establish Community of Inquiry through the creation, implementation, facilitation, and monitoring of cognitive and social processes to achieve learning goals. It includes the elements of instructional design, facilitation of learning and direct teaching. The primary responsibility of teaching presence is to establish the course content, schedule and assignments, the second is monitoring and managing interaction and reflection, and the third is determining learner needs and providing appropriate guidance and information. Therefore, creating and organising the different components of the course, establishing the teaching methods, sharing perspectives and information, and facilitating discussion are important aspects of teaching presence that influence student perceptions of social and cognitive presence.

Mare and Muteza (2020:5) argue that Unisa has embraced the use of online tutoring and e-tutoring as the new approach to teaching and learning in an ODeL environment. According to the Community of Inquiry, a learning community is important to enhance the social, cognitive and teaching presence for online learning to achieve student success. Online e-tutor and student interaction could

provide a learning community environment that reduces the feeling of isolation and may improve student performance at an ODeL institution. The role of the e-tutor during the teaching presence in an ODeL context is to guide and motivate the students. It is crucial to always remind your learners about the importance of participation in an online setting.

Similarly, Biccard (2021:35) concludes that the number and type of facilitator postings also increased the level of interaction between students. They make it clear that structure and facilitation have a significant influence on discourse. That said, it is important to understand the composition of teaching presence. Whether there are two or three distinct categories is more than a theoretical issue. It has practical implications for a community of inquiry and supporting social and cognitive presence.

A recent study on the relationship between the teaching presence and online learning questioned whether there are three categories corresponding to the hypothesised structure. Ramalingam and Hashim (2020:151) completed an extensive study of teaching presence and online learning. After factor analysing survey data of over 2 000 students across multiple institutions, it was concluded that a two factor solution was the most interpretable.

According to Siah (2020:93), from a teaching perspective, there is a difference between dialogue and discourse. The main difference is that dialogue is cooperative, two way conversation where the main goal is for participants to exchange information and build relationships with one other. On the contrary, discourse is cooperative, one way of conversation where the main goal is to deliver information from the speaker or writer to the listener. Facilitation supports dialogue with minimal shaping of the course of the discussion. Discourse, on the other hand, is disciplined inquiry that requires a knowledgeable teacher with the expectation that discourse progresses in a collaborative constructive manner and students gain an awareness of the inquiry process.

3.3 IMPLEMENTING COMMUNITY OF INQUIRY IN AN ONLINE CLASS

Seven aspects on how to implement Community of Inquiry in the virtual classroom situation, taking the three presences into consideration in each aspect. The aspects are student teacher contact, promoting cooperation among students, active learning, prompt feedback, time on task, communicating high expectations and respecting the diverse ways of learning.

3.3.1 Using Community of Inquiry Framework in promoting student teacher interaction in a class

Saab and Wu (2021:127) point out that an e-tutor needs to do the following things to ensure that teaching and learning takes place effectively and efficiently. First, the e-tutor needs to create a meeting in which e-tutor and the students introduce themselves, develop initial course activities such as ice breakers to encourage the development of swift trust, model and encourage the use of verbal immediacy behaviours in interactions with students, encourage students to share experiences and beliefs in online discussion, encourage and support vicarious interaction and use short videos of yourself to introduce the course and particular topics.

Gunbatan (2020:133) suggests that e-tutors should consider including real time communications using applications such as chat, collaborative whiteboards, interactive video, text, or virtual messaging. He further suggests that e-tutors should use the following strategies, consider incorporating Web 2.0 applications in course activities, especially social software such as blogs and wikis, work within teams but change roles among students, explicitly introduce students to the importance of student-to-student interaction. Where possible, they should be course sizes with a smaller student-instructor ratio.

Moreover, they should consider conducting one-on-few coaching and mentoring; online course orientations; have dedicated discussion for course introductions to help build a sense of community; provide opportunities for student and teacher profiles within learning management system; incorporate audio and video within the course content; share personal stories, professional experiences, and use emotions; address students by name; make many human connections early in the

course to ensure all students feel comfortable communicating with you and each other (Adries, 2020:3).

Elsier (2020:19) avers that in order to promote interaction in the virtual class e-tutors can use the following strategies:

- Provide frequent opportunities for both public and private interactions with students;
- Design diverse, graded activities to be completed every week;
- Explicitly introduce students to the importance of student-to-student interaction;
- Prepare for timely return of assignments and prompt response to students in email, chat, or discussion;
- Be active in discussion boards; however, be aware that posting instructor ideas too soon can stop student discussion;
- When possible, have course sizes with a smaller student-instructor ratio limit class size; for example, your online class size should be less than twenty for individual attention;
- Promptly answer email;
- Show your character; personality is a good thing; and
- Have a sense of humour and share it if and when appropriate.

3.3.2 Using Community of Inquiry in promoting cooperation among students

Yidirim and Seferoglu (2020: 147) point out that the e-tutor must do the following things to promote cooperation in the virtual classroom:

- Develop initial course activities such as ice breakers to encourage the development of swift trust;
- Model and encourage the use of verbal immediacy behaviours in interactions with students;
- Encourage students to share experiences and beliefs in online discussion; show multiple perspectives;
- Make participation in discussion a significant part of course grades;
- Require discussion participants to respond to their classmates' postings and/or to respond to all responses to their own postings;

- Have students serve as experts such as leading a discussion, encourage and support vicarious interaction;
- Use tracking mechanisms to reward reading as well as responding to messages; and
- Design community building activities and allow students to rename generic groups for personalisation.

According to Borba, Askari and Engelbrecht (2016: 128), e-tutor needs to design collaborative activities – problem solving tasks, projects, small group discussions and consider including real time communications using applications such as chat, collaborative whiteboards, interactive video, text or virtual messaging, consider incorporating Web 2.0 applications in course activities, especially social software such interaction so that they can view classmates' perspectives as valuable, create areas where students can communicate with each other class email, student discussion tab, and blogs.

Thymniou and Tsitouridou (2020: 85) argue that to promote cooperation in the virtual class, the e-tutor must do the following things:

- Encourage experimentation, divergent thinking, and multiple perspectives in online discussion through provocative, open-ended questions, model, support, and encourage diverse points of view in online discussion;
- Use content and process scaffolds to support discourse behaviours;
- Use peer review of discussion postings to shape responses reflective observation;
- Construct a formative assessment scheme for peer-supported learning that enhances both the student learning and instructor teaching experiences;
- Provide opportunities for higher order learning and experiential learning to engage students; and
- Reflect on group work or peer-supported learning experiences.

Stewart, Hiliard and Stillman (2020: 231) believe that to promote cooperation in online class the e-tutor needs to refrain from being overly present in online

discussions, rather facilitate student interaction, apply collaborative learning principles to support small group discussion and collaborative projects, be active in discussion boards. However, she must be aware that posting instruction ideas too soon can stop student discussion, establish an appropriate social climate for in-group and cross-group communication that contributes to cultivating learning experiences, structure collaborative learning activities, use group work strategies, contribute to discussion forum throughout the week, use collaborative group projects to have students work on topics of their own choosing that still meet learning objectives of the course.

3.3.3 Community of Inquiry and active learning

Gunbatan (2020:133) asserts that to encourage active learning in online class, e-tutors need to do the following:

- Make participation in discussion a significant part of course grades;
- Require discussion participants to respond to their classmates' postings and/or to respond to all responses to their own postings;
- Make students responsible for sustaining discussion threads;
- Make students summarise discussion threads;
- Use tracking mechanisms to reward reading as well as responding to messages; and
- Let students post video responses, use apps like screen casting.

Saab and Wu (2021: 127) argue that e-tutor must do the following things to promote active learning in the virtual class:

- Identify big ideas you want students to take away from your course and develop major course activities around their assessment;
- Identify important knowledge, skills and attitudes students should learn and develop additional course activities around their assessment;
- Provide multiple representations of the knowledge you want students to learn and multiple activities for practicing desired skills;

- Encourage experimentation, divergent thinking, and multiple perspectives in online discussion through provocative, open-ended questions;
- Require discussion summaries that identify steps in the knowledge creation process;
- Use peer review of discussion postings to shape responses;
- Use online discussion and writing activities to support conceptual learning and divergent thinking and use self-testing; and
- Practice assignments, simulations and other interactive activities to support the students.

3.3.4 Community of Inquiry and the role of prompt feedback in online class

Lee and Looi (2017:7) suggest that the following things must be done by online teacher to ensure that online teaching and learning takes place effectively and efficiently:

- Use audio/video to embed feedback on assignments within them;
- Consider incorporating Web 2.0 applications in course activities, especially social software such as blogs and wikis, personalised feedback;
- One-to-one emails, walk-through or how-to screencasts/videos regarding specific feedback;
- Use of phone calls; and
- Use peer review for relationship building.

Edirisingha (2020: 69-75) argues that an e-tutor should do the following things to ensure that effective teaching and learning takes place:

- Use peer-review of discussion postings to shape responses,
- Develop grading rubrics for discussion and course activities that reward desired cognitive behaviours;
- Provide frequent opportunities for testing and feedback;
- Develop general learning modules with opportunities for active learning, assessment, and feedback that can be shared among courses and/or accessed by students for remediation or enrichment;

- Use peer evaluations in the form of feedback;
- Construct a formative assessment scheme for peer-supported learning that enhances both the student learning and instructor teaching experiences;
- Provide relevant individual and group feedback in a timely manner; and
- Feedback is essential and be specific in your feedback.

3.3.5 The importance of time in Community of Inquiry

Caskurlu and Richardson (2020:440) argue that an online lecturer should do the following things to ensure that effective teaching and learning takes place:

- Provide frequent opportunities for both public and private interactions with students;
- Provide students with timely and supportive feedback;
- Personalised feedback;
- Design diverse, graded activities to be completed every week;
- Prepare for timely return of assignments and prompt response to students in email, chat, or discussion;
- Provide constructive and timely feedback to students; and
- Provide feedback, even if feedback consists of a simple acknowledgement that the work was received and provide immediate feedback.

3.3.6 Communicating high expectations

Ramaligam and Hashim (2020:151) suggest that an e-tutor must do the following things to ensure that there is effective teaching and learning:

- Explicitly introduce students to the unique nature and learning potential of online discussion;
- Explicitly explain to students to the importance of student-to-student interaction so that they can view classmates' perspectives as valuable;
- Identify big ideas you want students to take away from your course; and
- Develop the major course activity around their assessment.

The researcher believes that if the e-tutor can communicate the importance of interaction and communication in the online platform, students would be keener to

make contributions in the discussion forums. Active participation in the discussion forums will help the students when they are preparing for assignments and the online examinations.

3.3.7 Respecting the diverse ways of learning in an online class

Hill (2019: 13) points out that in a virtual class, online e-tutor deals with learners with diverse needs therefore the following factors should be considered when dealing with students. For example, some learners come from rural areas may experience problems in using emerging technologies as compared with urban counterparts. Disabled students should be considered in distance and e-learning, that is to, say the online teacher should ensure that they learn at their own pace by simply breaking the learning lesson into small bits of information.

3.4 THE ROLE OF ONLINE TEACHER TO SUPPORT THE LEARNERS IN DISTANCE EDUCATION AND E-LEARNING CONTEXT

Distance learning has become one of the major trends in education, especially in the 21st century. It has opened the opportunity for learners from all walks of life to continue with their academic pursue. Distance learning refers mainly to a mode of delivery where independent learning takes place at a distance through the means of self-study texts and non-contiguous communication (Roach, 2021:79). Teaching and learning in a distance education centres upon the use the technological media as its medium of instructions is crucial in distance learning. The teacher in a distance education setting should be able to use the technology to deliver content and to ensure students' understanding of the curriculum content.

According to Edirisingha (2020: 69), materials production in a distance learning education should be self-explanatory, thought-provoking and able to scaffold students' understanding throughout their learning experience. Therefore, separation of the teacher and learner should not temper the two-way exchange of communication in meeting the needs of both parties in delivering and receiving content. More importantly, e-tutor's competency in addressing the students' needs

in a distance learning setting is crucial in ensuring the success of a distance education.

Research in distance learning education (Shaerer & Park, 2019:93) indicates that teachers play an important role in addressing the students' needs to ensure education success in virtual learning environments. Roach (2021:79) asserts that the key in effective learning is analysing the performance need, content and target audience. When investing in training, you want to maximise the chances of learners to improve their performance.

Roach (2021:80) also addresses the needs for an effective instructional framework to ensure effective learning. He has put forth the five components of good learning, that is, to be able to solve real world problems, to activate prior knowledge as a pre-cursor to undertaking new learning, to take on board new knowledge through demonstration and worked examples, to try out new learning by applying it and to integrate learning into the students' own world of experience.

The foregoing suggestions indicates that the teacher or the instructor in a distance learning environment needs to be able to design their instructions to enable the students to understand, practice and relate these understanding to their real life experiences. Quality e-tutor and independent self-motivated students are two major components in a distant education system. Students who embark in the distance learning education are usually aware of the demands of online or distance learning education in terms of motivation, self-discipline and time-management (Roach, 2021:75).

The result of a survey study on the experience of 22 multinational and multilingual students in a distance learning programme administered by Edirisingha (2020:69) and Latchman (2019:334) indicate that the students were let down by the course because their needs in terms of competent student support services, access to reference materials and efficient administrative procedures. This study showed that students in a virtual learning environment are quite frustrated when the online support systems originally designated to assist them in their studies are

incompetent or unreliable. In reviewing this issue, there is a need to revisit the question as to what should be focused upon in an e-learning environment.

Sivula 2019:31) delineates the three keys to success in an e-learning environment that is access to information, comprehensive approach that is reliable, accurate, complete, organised and labelled for easy retrieval and use and a complementary balance between training and information.

Accessibility of information for easy retrieval and use are considered as of major importance to the distance learning students. Throughout the course, students should be trained and taught on how to utilise the online information provided. Therefore, this calls for the teacher's role in preparing good learning materials or learning objects for the students. Besides, online support and assistance should be made available so that students could fully utilise this support system throughout their online learning experience. The success of a distance learning programme is determined by the way in which the programme is structured so as to provide maximum benefits to the learners (Roach, 2021:71).

It should be noted that those designing and managing online environments cannot rely on the skills and competencies gained in traditional engagements; instead they must be prepared to come to terms with new issues presented in their virtual environments (Elyakim, Reychov & Offir, 2018:131).

Distance students need a two-way communication with their instructors and their peers, there should be online assistance in terms of technical and academic support and learners should be given the autonomy to decide on their learning experience.

3.5 IMPLICATIONS OF THE COMMUNITY OF INQUIRY IN THE ODL CONTEXT

The Community of Inquiry Framework provides the online educators with framework to design and teach successful online or blended courses. The

framework enables the online educators to plan the courses in detail before the course or the semester starts. Instructors are able to plan their schedule accordingly. When planning for the course, online educators should ensure that the text is clear and should provide step by step instructions to accommodate diversity of students.

Online educators should start by orientation of students during the beginning of the course to promote the social presence. Orientation can be done in the form of virtual meeting between the online teacher and the students allocated to him. During the orientation, the online educator gets the opportunity to motivate the students and encourage them about the importance of participating in a virtual platform. This will benefit the learners since they will know from the start on what is expected of them and to differentiate what is important.

Moreover, the virtual meeting done at the beginning of the course promote the establishment of the social presence in the sense that there is mutual relationship that develops between the e-tutor and the students, and this mutual understanding will create a wellbeing and a stress-free environment between the students and the online educators. Activities for getting to know each other including forums or personal web pages, online instructors, introduction with photographs, naming qualifications, welcome messages, sharing humour and personal experiences can add more to create a sense of presence in a virtual platform (Roach, 2021:71).

Jackson and Cope (2020:717) assert that students reported that attending a live meeting, listening to the online instructor and virtual classmates and seeing them through the webcam made them to feel others as real people promote the sense of social presence. To promote cognitive presence, the e-tutors should provide learners with guidelines and regulations for group formation, group gatherings, role assignment, tools to use, and certain deadlines to submit reflections.

Each online classroom setting is unique to each individual students; it is always the instructor’s role to cater for each learner’s role. The online instructor should post the summaries, feedbacks of the assessments and encourage other students to do

so. As a result, all learners will benefit and teaching, social and cognitive presence will be promoted.

3.6 JUSTIFICATION FOR USING COMMUNITY OF INQUIRY THEORY

Community of Inquiry is the leading theory of this study. According to Garrison, *et al.* (2010:1), Community of Inquiry is a theoretical framework for optimal design of online learning environments to support critical thinking and discourse among students, students and their e-tutors and students and the learning content. The Community of Inquiry Framework theory is the core to this study. Community of Inquiry reflects a collaborative constructive approach to learning. It goes beyond accessing and focuses on the elements of an educational experience that facilitate creation of communities of learners actively and collaboratively engaged in exploring, creating meaning and confirming understanding (inquiry) (Garrison, 2019:8).

Unisa has adopted ODeL mode of learning. Community of Inquiry is suitable for online learning and therefore relate with myUnisa LMS where there is student to e-tutor, student to student and student to content interaction. This interaction takes place online and both parties use digital tools and are connected to the Internet. Successful learning takes place when there are three presences, namely, social presence, cognitive presence and teaching presence. Unisa students are able to communicate, form group cohesion and there is an active participation and collaboration. Students experiences value learning, they get an opportunity to express and give feedback through virtual discussions.

Pertaining cognitive presence, UNISA students are able to construct and confirm meaning through sustained reflection and discourse. They are free to challenge or question, to propose solution and resolution. Student experiences involve a sense of puzzlement, information sharing, connecting ideas and the ability to apply new ideas. In the discussion forums, students are able to think, read and express their thoughts in the process of critical discourse. Students are given opportunities to apply their new knowledge. During the discourse, students are able to discover

facts for themselves. This is further evidenced by Jackson and Cope (2020:717) who opine that information sharing and the ability to apply new ides in a new situation offers ample opportunities to practice and reinforce thinking skills that lead to success.

Through teaching presence, the e-tutor serves as the facilitator in an online discussion. The e-tutor provides the students with proper guidance and feedback. The e-tutor intervenes only when there is a need. The e-tutor devolves more responsibilities to the students. The students motivate each other and encourage others to participate in discussion forums. Student experiences involves defining and initiating discussion topics, sharing personal meaning and focusing on discussion. Students are more in control of their own learning. Wishkoski (2020:15) supports the ideas of devolving responsibilities to the students. He asserts that devolving responsibility builds confidence and strengthens self-esteem of the students.

3.7 CHAPTER SUMMARY

The study was underpinned by Community of Inquiry Framework developed by Garrison, *et al*.'s theory of Community of Inquiry. Community of Inquiry Framework is a dynamic model of the necessary core elements for both development of the community and the pursuit of an inquiry in an educational environment. Community of Inquiry framework suggests that social presence, cognitive presence and teaching presence are essential elements to foster successful educational experiences in a computer mediated ODL environment. The Community of Inquiry Framework has important educational implications more especially when it comes to ODL and e-learning contexts.

Chapter 4 will fully describe the research methodology of this study.

CHAPTER 4: RESEARCH DESIGN AND METHODOLOGY

4.1 INTRODUCTION

This chapter begins by re-stating the main aims and objectives of the study, followed by a clear description of the research design and methods. This study is focused on the effectiveness of technology in ODeL environment. Method for data collection were those used for qualitative research, namely, semi-structured interviews, with research ethics strictly adhered to. Participants were selected purposefully. Data were collected from 12 Unisa students doing Higher Certificate in Adult Basic Education. These were six students from Mthatha Regional Centre and six students from East London Regional Centre. Chapter 4 closes with concluding section that connects with the next chapter.

4.2 RESEARCH QUESTIONS

The main question was: How can technology be effective in an Open Distance Learning institution?

The sub-questions were:

- What are students' experiences in using the Learning Management System for learning at the University of South Africa?
- How do distance education students use Learning Management System for learning at the University of South Africa?
- How effective is the Learning Management System's students' support at the University of South Africa?

4.3 RESEARCH AIM AND OBJECTIVES

4.3.1 Research aims

The study aimed to investigate the effectiveness of technology in an open distance learning university.

4.3.2 Objectives

The specific objectives of this research were to:

- Explore students' experiences in using the Learning Management System for learning at the University of South Africa.
- Examine how distance education students use Learning Management System for learning at the University of South Africa.
- Determine the effectiveness of the Learning Management System in supporting students at the University of South Africa.

4.4 RESEARCH PARADIGM

Eldin, Arestedt and Bertero (2020:449) assert that researchers have to be able to understand and articulate beliefs about the nature of reality, what can be known about it and how to go about attaining this knowledge. These are elements of research paradigms. A paradigm is a basic belief system and theoretical framework with assumptions about ontology, epistemology, methodology, and methods. In other words, it is our way of understanding the reality of the world and studying it.

What follows is a description of each component of a research paradigm:

4.4.1 Ontology

Ontology refers to the nature of our beliefs about reality (Santa, 2017:183). Researchers have assumptions (sometimes implicit) about reality, how it exists and what can be known about it. It is the ontological question that leads a researcher to inquire what kind of reality exists. It entails a singular, verifiable and

truth or socially constructed realities (Rajasinghe, 2019:176). In this study, the researcher set to examine the effectiveness of technology from learners enrolled in ODeL context.

4.4.2 Epistemology

Epistemology refers to the branch of philosophy that studies the nature of knowledge and the process by which knowledge is acquired and validated (Al-Fraihai, Joy & Sinclair, 2020:78). It is concerned with the nature and forms of knowledge, how it can be acquired and how it is communicated to other human beings (Dion, Rios & Leanard, 2020:125). It is an epistemological question that leads a researcher to debate the possibility and desirability of objectivity, subjectivity, causality, validity, and generalisability (Rajasinghe, 2019: 178; Ravencroft, 2020). Adhering to ontological belief system (explicitly or implicitly) guides one to certain epistemological assumptions. Therefore, if a singular verifiable truth is assumed, then the posture of the knower must be one of the objective detachment or value freedom to be able to discover how things really work (Dion, *et al.,* 2020:125). Conversely, belief in socially constructed multiple realities leads researchers to reject the notion that people should be studied like objects of natural sciences, they get involved with the subjects and try to understand the phenomena in their contexts (Rajasinghe, 2019:178; Ramalin, 2021:56).

The researcher used an interpretive epistemological lens to collect data from participants enrolled for Higher Certificate in Adult Education, in an ODeL context, Unisa, from Mthatha and East London study centres. Before discussing the research in detail, the researcher briefly describes the concept paradigm and various types of research paradigms and this will be followed by detailed explanation of research design, research methods, population of study, sampling strategy, data collection instrument, data analysis as well as study trustworthiness.

4.4.3 Methodology

Methodology is an articulated, theoretically informed approach to the production of data (Dion, *et al*., 2020:125). It refers to the study and critical analysis of the data production techniques. It is the strategy, plan of action, process or design that informs one's choice of research methods (Martin, Jenkins & Lin, 2020:15). It is concerned with the discussion of how a particular piece of research should be undertaken (Relly & Creswell., 2020:175; Renin & Raju, 2019:674). It guides the researcher in deciding what type of data is required for the study and which data collection tools will be most appropriate for the purpose of his study. It is the methodological question that leads the researcher to ask how the world should be studied (Zhao *et al.* 2020:137; Zhang, 2020:64). The researcher has adopted qualitative method to extract the information from the participants about their experiences in using the LMS, the support offered by this technology and their state of readiness to use the emerging technologies.

4.4.4 Methods

According to Zainai, Zarel and Janani (2020: 190), methods are specific means of collecting and analysing data, such as questionnaires and open-ended interviews. The methods to use for a research project depend on the design of that project and researcher's theoretical mindset. The researcher used a semi-structured interviews to collect data from the participants. Interview guide was prepared beforehand, and 14 research questions were posed to each participant.

To answer the research objectives of what is the effectiveness of technology in ODL case study of Unisa, the researcher employed interpretive paradigm. According to Creswell (2018:83) and Underwood (2016:92), interpretive paradigm represents a learning process in which we build our understanding of the world (our reality) out of our experiences of functioning in that world and examining the actions and statements of the people. The rationale for using this paradigm is that the researcher was able to meet with participants face-to-face and hear about their experiences in using technology. Another added advantage of interpretivism is that it goes hand in hand with qualitative approach. What follows is a detailed discussion of an interpretive paradigm also known as interpretivism.

4.5 INTERPRETIVISM

The researcher adopted interpretivism in his study to ensure that truth and reality about the effectiveness of technology in ODeL institutions are revealed. What follows is a full discussion of interpretivism paradigm. Primecz (2020:345) and Farswan 2019:86) argue that interpretivism is a response to the over-dominance of positivism. Therefore, it rejects the idea that a single, verifiable reality exists independent of our senses. Interpretivists believe in a socially constructed multiple realities. Truth and reality are created, not discovered. It is not possible to know reality because it is always mediated by our senses. Interpretive epistemology is subjective. External reality cannot be directly accessible to observers without being contaminated by their worldviews, concepts and backgrounds (Bogna, Raineri & Dell, 2020:461).

Coskun (2020:448) and Fuauz 2018:23) assert that interpretive methodology requires that social phenomena be understood through the eyes of the participants rather than the researcher. The goal of interpretive methodology is to understand the social phenomena in their context. Interpretivists collect mostly qualitative data from the participants over an extended period of time, as in ethnography and case studies. Duffy and Fernandez (2020: 448) also point out that the approach for analysing data generated is inductive; that is, the researcher tries to discover patterns in the data which are collapsed under broad themes to understand a phenomena and generate a theory.

Interpretivists use the inductive approach instead of deductive approach because they tend to use the theory as deriving from data collection and not from the driving force of the research (Sanchez, Ospina & Salgado, 2020:156). Data are mostly verbal instead of statistical and it is usually audio/video recorded to preserve the events in a fairly authentic manner for subsequent data analysis (Nugroho, 2017:152; Fauzi & Pradipta, 2018:70).

With regard to this study, the researcher decided not to use positive paradigm since it is scientific in nature rather interpretive paradigm was employed. Other

reasons of employing interpretive paradigm by the researcher include the following: interpretive paradigm believes in a socially constructed multiple realities. Its methodology requires that social phenomena be understood through the eyes of participants rather than a researcher, for an example in this case, the researcher examined the effectiveness of the LMS used by Unisa students (participants) enrolled in ABET course studying online. Interpretive paradigm uses inductive approach in contrast to a deductive approach. The methods of data collection are verbal rather than using statistical approach as it occurs in positivist paradigm. The researcher became part of the sample hence he was involved in interviewing participants, that exchanging words with Unisa selected students.

4.6 RESEARCH DESIGN

A qualitative, exploratory, descriptive design was used. The qualitative approach used was interpretive. Research design refers to the way data were gathered from the participants (Wishkoski, 2020:33; Smith & Sparkes, 2020, 411). The research was qualitative in the sense that it explored traits of Unisa students and settings that could not be easily described numerically. The qualitative research helped the researcher to generate an in-depth account that presented perceptions of students' realities within the virtual classroom context. The data were obtained directly from the sources and required the researcher to be non-judgmental, honest, friendly, and flexible.

To answer the research questions, the researcher used a single case study of Unisa students in the Eastern Cape, Mthatha and East London, South Africa. Nugroho (2017:152) and Flock (2020:57) define a case study as an investigation of an entity carefully defined and characterised by place and time. For this study, the entities were students enrolled for an ABET course in ODeL enabled institution. Nugroho (2017:165) further describes a case study as an in-depth analysis of one or more events, settings, programmes, social groups, communities, individuals, or other bounded systems. The case study design was suitable because it was not

frequencies of occurrences that characterised the study, but quality and intensity (Mukan, Fuchyla & Ihnatluk, 2017:135; Creswell, 2018:36). A case study separates the significant few from the insignificant many instances of behaviour. So, significance rather than frequency is the hallmark of case studies (Farmer & Ramsdale, 2016:42).

Todd (2018:32) and Eskandan, Tardanesh and Sajadi (2020:45) define a case study as an investigation of an entity carefully defined and characterised by the place and time. It is an in-depth analysis of one or more events, settings, programmes, social groups, communities, individuals, or other bounded systems. A case study was suitable for this research because it was not frequencies of occurrences that characterised the study, but quality and intensity.

4.7 QUALITATIVE RESEARCH APPROACH

Husband (2020:29) and Escuata, Nickow and Oreopoulos (2020:49) define qualitative methods as an umbrella term covering an array of interpretative techniques which seek to describe, decode, translate, and otherwise come to terms with the meaning, not the frequency, of certain more or less naturally occurring phenomena in the social world. When conducting face-to-face interviews with the selected research participants, the researcher tried to limit the shortcomings in order to maintain rigour in the research results.

Qualitative research involves collecting and analysing non-numerical data such as text, video and audio to understand the concepts, opinions or experiences. It can be used to gather the in-depth insights into the problem or generate new ideas for the research. Qualitative research is commonly used in humanities and social sciences (Bhandari, 2020:2; Bozkurt, 2017:98; Burke & Larmar, 2021:601).

The researcher used qualitative research to understand how people experience the world. Common approaches of qualitative approach include grounded theory, ethnography, action research, phenomenological research, and narrative research.

The researcher employed phenomenological research in the study. The research was qualitative as it explored traits of participants studying the ABET course and using technology and settings that could not be easily described numerically. More importantly, qualitative research helped the researcher to generate an in-depth account that presented perceptions of Unisa students doing higher certificate in ABET on the effectiveness of technology in their learning. The rationale for choosing phenomenological approach was that the researcher was going to investigate a phenomenon about the participants' experience in using technology in their studies. To extract the information about effective use of technology, the researcher utilised semi-structured interviews as qualitative research method. The researcher asked questions in one-on-one conversations to learn about participants' experiences in using technology. Therefore, qualitative approach helped the researcher to obtain the meaningful insight of participants' experiences and perceptions about the effective use of technology.

Husband (2020:16-20) and Bustos-Costell (2021:39) define qualitative research as a situated activity that locates the observer in the world. It consists of a set of interpretive, material practices that make the world visible (Primecz, 2020:345; Brandao & Algarvio, 2020:59). They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings, and memos to the self. This means that qualitative researchers study things in their natural settings, attempting to make sense of or to interpret, phenomena in terms of the meanings people bring to them (ibid) (Caprara & Caprara, 2021:45; Clark, 2020:7; Chetty, 2018:27; Rumble & Harry, 2019:49).

Qualitative research also emphasises words. It embodies a view of social reality as a constantly shifting emergent property of individuals' creation. Qualitative research is especially concerned with the context of certain phenomena. Furthermore, qualitative research works with open questions, which might change during the course of research. The flexible nature of this approach is an important characteristic (Chen, Dobinson & Kent, 2019:9). The definite shape of the research question is obtained based on an inductive empirical cycle. Induction is concerned

with generating theory from data, that is, theory follows data rather than the opposite way as with a deductive approach. In contrast to a deductive approach, small samples of subjects might be appropriate (Magaldi & Berler, 2020:27; Cou & Saab, 2021:1479).

4.8 METHOD OF DATA ANALYSIS

According to Magaldi and Berler (2020:14), data analysis is of vital importance within qualitative research as it has a major influence on the results. It represents one step among various other steps within the research process, yet there are different approaches to the role of qualitative data analysis within this process. In some models, data analysis starts only after data collection and preparation have been completed. Wishkoski (2020 33) describes data reduction, data display and drawing and verifying conclusions as the three major components of qualitative data analysis. In his research, the researcher used semi-structured interviews to extract information from the selected participants.

Roulsten and Halpin (2020:401) and Darrow (2009:67) assert that data reduction is part of the analysis and occurs constantly during the analysis. The main objective, congruent with quantitative analysis, is to reduce data without losing information. In the area of qualitative analysis, it is additionally important to preserve information within its context. After collecting the data, the researcher transcribed coded the date using Braun and Clarke's method of data analysis.

Data reduction and display are important to assist in drawing and verifying conclusions (Crossman, 2019:89; Deng, Benckendorff & Gannaway, 2019:48). This step logically follows after the first two steps; however, possible conclusions can also be drawn vaguely in earlier stages of the analysis and sharpened throughout the whole process. When all data have been analysed, final conclusions can be drawn as propositions, which then need to be verified (Primecz, 2020:345; Shaketanga, 2018:9; Roberts, 2018:59; Rungrangtanapol,

2021:3). When analysing his data, the researcher tried to avoid the use of graphs; hence, they are more quantitative in nature.

Data can be analysed in a more systematic manner if the study is based on particular theoretical propositions or a conceptual framework (Wishkoski (2020:19). Rogers, Thomas and Helmes (2021:47) define propositions as statements concerned with the relationships among concepts. A proposition explains the logical linkage among certain concepts by asserting a universal connection between concepts. Husband (2020:26) and Sachin and Shivaji (2019:328) describe the conceptual framework as the system of concepts, assumptions, expectations, beliefs, and theories supporting and informing the research conducted. In this study, the researcher used thematic analysis to analyse the collected data. Before giving a detailed about the data analysis used by the researcher to analyse the data collected from the semi-structured interviews, various methods of analysing data will be discussed. In this research, a thematic analysis was used.

4.9 POPULATION OF STUDY AND SAMPLING STRATEGY

Population can be defined as all people or items that one wishes to understand while sampling is the process of selecting a segment of the population for investigation. It is a process of selecting a sample of units from a data set to measure the characteristics, beliefs and attitudes of the people. Sampling survey involves structured questionnaire to evaluate people's beliefs and attitudes. Collected data via structured questionnaire can be enumeration of a selected population or subgroup (Babbie, 2016:30; Salman & Asgari, 2019:357).

Twelve participants enrolled for Higher Certificate in ABET at Unisa in the Eastern Cape Province were selected for the study. Out of 12 participants, six participants comprised students from Mthatha Regional Centre. The latter was used because it consists of students who were previously marginalised in the terms of technologies. In this Unisa satellite campus, more students come from rural areas.

The rest comprised students from East London Regional Centre. Six students from East London came from urban and semi-urban areas. Information obtained from the participants deriving from these two centres helped the researcher to compare the effectiveness of technology in rural and urban areas.

Black (2017:19) and Smith and Sparkes (2020:41) describe sampling as the process of selecting people from population of interest so that by studying the sample, the researcher can fairly generalise the results of the study. In this study, purposive (typical case sampling) was employed. Purposive sample is known as judgemental or selective is the form of sampling in which researcher relies on their judgement when choosing members to participate in the study (Creswell 2018:39). The researcher decided to use purposive sampling because all the participants shared common characteristics. All participants are enrolled for Higher Certificate in ABET at Unisa and study online and therefore, enabled the researcher to answer the research questions.

Participants for the study were selected from the two regional centres, namely, Mthatha and East London respectively. The smaller towns surrounding Mthatha were Tsolo, Ngqeleni, Mount Frere, Mount Ayliff, Mbizana, Flagstaff, Tabankulu, Lusikisiki, Port St. Johns, Libode, Mqanduli, Maluti, Sterkspruit and Engcobo whereas areas surrounding East London are Komga, Stutterheim and Berlin. Therefore, students from the aforementioned areas who enrolled for Higher Certificate in ABET were interviewed.

There are broadly two types of sampling methods, probability sampling and non-probability sampling. The researcher used purposive sampling strategy in this study. There are various types of sampling strategies. The following describes the main sampling techniques and sampling method usually used in business studies. Probability sampling: Probability sampling is a sampling approach in which each unit has an equal chance of probability to be selected. Probability sampling is further divided into five categories including: simple random sampling, systematic

random sampling, stratified random sampling, cluster sampling and multi-stage sampling (Benache & Festing, 2020:45; Creswell, 2018:47; Adeoye-Otatunde & Olenik, 2021:24).

Simple random sampling: In line with the definition of randomisation, it is a sampling process in which each unit of the population has an equal probability of inclusion in the sample. It can be calculated with sampling fraction that is N where n stands for sample size and N for the population size. In this method, the researcher develops a numeric list of all sample size and by using computer program to generate random numbers (Magaldi & Berler, 2020:16).

Systematic random sampling: Probability sampling technique where initial sampling point is selected at random and then the cases are selected at regular intervals. For instance, in this method, the researcher systematically chooses the first number that is 5 and then the other cases will select at regular interval – 25, 35, 45, 55 so forth (Handel, Stephan & Kopp, 2021:457).

Cluster sampling is a sampling technique where researcher derives a sample out of aggregations of population that are geographically dispersed and possibly unable to access at the same time. It could be ten banks in cluster from all around the world (Wishkoski, 2020:31; Smodi, Chamberlain & Shifaxa, 2021:103, Sign & Miah, 2020:56; Singh & Turman, 2019:78; Starr-Glass, 2016:9; Tangky, Chang & Hwang, 2021:67).

4.10 DATA COLLECTION

4.10.1 Pilot study

In his study, the researcher began by conducting a pilot study. Hennik, Hutter and Bailey (2020:110) and Herlo (2017: 21) argue that to obtain high-quality outcomes, a good research study with relevant research design and accurate performance is required. A pilot study can be conducted in both qualitative and quantitative research. In the study of effectiveness of the LMS in an ODeL context, the researcher employed a pilot using six participants – three from rural and three

from urban so as to compare the pilot study results on how effective the LMS in ODeL. Six participants were enough for the pilot study because the researcher had enough time considering that the total number used in the main study is not a big number. Only 12 participants were used in the main study.

Analysing the feasibility prior to performing the main study (also known as the full study or large-scale main trial) can be very beneficial for this purpose. A pilot study is the first step of the entire research protocol and is often a smaller-sized study assisting in planning and modification of the main study. More specifically, in large-scale clinical studies, the pilot or small-scale study often precedes the main trial to analyse its validity. Before a pilot study begins, researchers must fully understand not only the clear purpose and question of the study, but also the experimental methods and schedule (Hahir & Zeller, 2021:673).

Researchers become aware of the procedures involved in the main study through the pilot study, which aids in the selection of the research method most suitable for answering the research question in the main trial. Despite the benefits and importance of the pilot study, researchers often are not interested in piloting their studies. In this study, a qualitative research method is the suitable method to answer the research questions, namely, what are students' experiences in using the LMS for learning?; how does the LMS support online students in an ODeL context?; How do distance education students deal with emerging technologies? (Adeoye-Otatunde & Olenik 2021: 24; Tolu, 2016:78; Tan, Chan & Said, 2021:66; Wahdan, Hantoobi & Salloum, 2021:325).

A pilot study is performed either as an external pilot study independent of the main study or as an internal pilot study included in the research design of the main study. Furthermore, a pilot study is performed reflecting all the procedures of the main study and validates the feasibility of the study by assessing the inclusion and exclusion criteria of the participants. When using a pilot study, the researcher recruits the subjects and obtains consent for participation (Daneyeefard 2020:335; Strong & Hutchins, 2019:34; Spinello, 2020:56).

An insufficient number of participants results in lower statistical power, which can eventually lead to early termination of the trial in the worst-case scenario. Recruitment rate can also be increased through modification of the research methods. Through this pilot study, feasibility and acceptability of the general research plan will yield better results if appropriate steps have been undertaken (Todd, 2018:31; Stewart *et al*. 2020:73; Spencer & Temple, 2021:233).

Despite the fact that pilot studies are very useful, few are reported. One of the key reasons is that results from these studies focus on statistical outcome rather than the feasibility of the study. Furthermore, the experimental design or research design itself is not clear (Anders, 2019:21; Tait, 2018:101, Stevens, Bienz & Wall, 2021:67).

Researchers have a strong desire to include the data collected from the pilot study into the main study because this allows the researchers to reduce both the number of participants required for the study and the duration of the study. However, this is only allowed in an internal pilot study that is not discussed in this text. To perform an internal pilot study, it must be thoroughly planned at the study design stage of the main study and included in the study procedure (Martin, Jenkins & Lin, 2020:9).

Conditions for a successful pilot study must be listed in advance. Depending on the fulfilment of these conditions, the researcher decides to proceed with the main study or to make modifications to the study design. Furthermore, results from the pilot study are described based on these conditions (Hennik*, et al*., 2020:119).

Chetty (2018:33) and Sulissiusiawan and Salam (2017:44) provided a checklist for pilot studies using the consort statement. A brief description is provided as follows:

- It must note that the study is a pilot study in the title in the introduction.
- Background for the main study and rationale for performing the pilot study should be written, in the methods section.
- Categories for assessing the validity of the criteria and procedures to be applied in the main study should be defined.

- The criteria to determine validity should be established.

The results of the pilot study need to be summarised. A pilot study provides necessary information not only for calculating the sample size, but also for assessment of all other aspects of the main study, minimising unnecessary effort from the researchers and participants, as well as the dissipation of research resources. For the pilot study to play its role, factors introduced in the text must be clearly defined before proceeding with the pilot study, and demonstrate a high level of completion (Clark, 2020:17; Babbie, 2020:117, Sousa, Rocha & Kartal, 2020:327).

A pilot study was conducted with six participants that is, three from Mthatha Regional Centre and two from East London Regional Centre. Data comprised participants enrolled for Higher Certificate in ABET at Unisa focusing on the participants in the Eastern Cape Province, specifically Mthatha and East London regional centres.

Participants used for the pilot were not included in the main study. The pilot study showed no problems with the data collection methods, as such the main study was carried without problems.

4.10.2 Data collection instrument

The semi-structured individual interviews were used for the study. A semi-structured interview was chosen because it is one of the most dominant and widely used method of data collection in the social sciences (Creswell, 2018:85; Walker, Recker & Sellers, 2019:8; Tsai, Shen & Chiang, 2019:18; Zawacki-Ritcher, Kerrres & Bond, 2020:161, Vogel & Draper-Rodi, 2017:2; Tyler-Wood, Cockerhan & Johnson, 2018:1). The researcher employed semi-structured interviews because he believes it is effective when used to elicit individual and personal experiences about specific issues. Moreover, semi-structured interviews were suitable for the study because they allowed the interviewer and the interviewees to discuss their interpretations of the world in which they live.

The interviewer used informal interviews and hoped to enjoy the freedom of modifying the sequence of questions, changing the wording and even explaining or adding the questions. The questions were few, semi-structured and open-ended, with probes for eliciting more information from the interviewees (see Appendix F). The questions to be asked during the interviews were structured to answer all research sub-questions. The interviews were very informative because they allowed the participants to reflect on their insight and experiences on online learning. Semi-structured interviews assisted the researcher to gather in-depth accounts of students' experiences on the effectiveness of the LMS in ODeL. The data were obtained directly from the sources and required the researcher to be a good listener, non-judgemental, friendly, open, honest and flexible (Husband, 2020:29; Babbie, 2016:39, Santon & Harkness, 2019).

Doyle (2019:56) and Zawacki-Ritcher *et al.* (2020:245) define semi-structured interviews as a meeting in which the interviewer does not strictly follow a formalised list of questions. The interviewer will ask more open-ended questions, allowing for a discussion with the interviewee rather than straightforward question and answer format. Keller and Conradin (2019:67) and Zhang, Yu and Chen (2017:121) posit that semi-structured interviews are conducted with fairly open framework which allows focused and conservational, two-way communication. The interviewer follows a guideline but is able to follow topical trajectories in conversation that may stray from the guide when it seems appropriate. Not all questions are designed and phrased ahead of time.

The majority of questions are created during the interview, allowing the interviewer to probe further and interviewee the flexibility to go into detail when needed. Conducting a good semi-structured interview requires thoughtful planning which include identifying participants, deciding on the number of the interviews and preparing for the interviews. After having conducted interviews, a comprehensive analysis is needed (Babbie & Mouton, 2011:34; Yusof, Jumamaha & Muhammed, 2020:1684; Akan, Guney & Creswell, 2019:40; Westlund & Stuart, 2017:67).

Conducted conversationally with one respondent at a time, the semi-structured interview employs a blend of closed and open-ended questions, often accompanied by a follow-up why or how questions. About one hour is considered reasonable maximum length for semi-structured interview to minimise fatigue for both interviewer and interviewee (Adams, 2015: 55; Yeboah-Kumi & Kim, 2020:42; Yalmeh & Zainallpour, 2020:12).

For the purpose of this research, an interview guide was be prepared beforehand and sent to the interviewee to indicate the types of questions that will be asked. Copies of consent forms were sent to the participants. When preparing the interview questions, the researcher used open-ended questions to get lengthy and descriptive answers during each interview session. Recording device for the recording of participant's responses during an interview was organised.

4.11 HOW COLLECTED DATA WERE ANALYSED

Data analysis in qualitative research is defined as a process of systematically searching and arranging the interview transcripts, observation, notes, or other non-textual materials that the researcher accumulates to increase the understanding of the phenomenon (Creswell, 2021:47). Collected data were analysed using thematic analysis which entails the procedure of identifying themes within qualitative data (Fauz, 2018:237; Ye, Recker & Yuan, 2015:8). Thematic analysis is a method of analysing qualitative data. It is usually applied to a set of texts, such as interview transcripts. The researcher closely examines the data to identify common themes, topics, ideas, and patterns of meaning that come up repeatedly.

According to Scharp and Sanders (2018:39) and Yilmaz and Yilmaz (2019:93), thematic analysis emphasises the examination of themes identified in raw qualitative data by organising the data set. They further assert that researchers choose thematic analysis for the semi-structured interviews because the thematic analysis is a highly analytic method. The rationale for choosing thematic analysis is

that this method is a rigorous thematic approach which can produce an insightful analysis that answers particular research questions (Creswell, 2018:79; Tracey, 2020:8; Ebba, 2021:67; Dzibun & Grahan, 2018:56; Dron, Seidel & Litten, 2016:163).

Moreover, this method complemented the research questions by facilitating an investigation of interview data from two perspectives, first, from data-driven perspective and perspective-based on coding in an inductive way. Secondly, research questions perspective seeks to check if data are consistent with research questions and providing sufficient information (Scharp & Sanders, 2018:77; Drummond, 2017:335; Downes, 2020:4789; Ghosh *et al*., 2019:13).

Braun and Clarke (2006) suggest that it is the first qualitative method that should be learned as it provides core skills that will be useful for conducting many other kinds of analysis. A further added advantage of thematic analysis, particularly from the perspective of learning and teaching, is that it is a method rather than the methodology (Wishkoski, 2020:19; Frenchete, Bitzas & Aubry, 2020:5; Santos & Sepa, 2017:90; Shemahonge and Mtebe & Raphael, 2018:4). This means that, unlike many qualitative methodology, it is not tied to a particular epistemological or theoretical perspective (Toddi, 2018:31; Setyohadi, Aristrian & Sinaga, 2017:271). This makes it a very flexible method, a considerable advantage researcher to analyse his findings. For instance, in my case, it will be thematic analysis of Braun and Clarke.

There are many different ways and approaches of thematic analysis (Braun & Clarke, 2006:17; Shekhar, Prince & Finell, 2019:6). However, this variety means there is also some confusion about the nature of thematic analysis, including how it is distinct from a qualitative content analysis. In this researcher followed the example of Braun and Clarke's (2016: 45) six step framework. This is arguably the most influential approach in social sciences at least, probably because it offers such a clear and usable framework for doing thematic analysis.

According to Braun and Clarke (2017:459) and Clarke (2019:77), the goal of thematic analysis is to identify the themes or patterns in the data that are important

or interesting and use these themes to address the research or say something about the issue. Thematic analysis is much more than summarising the data; because, a good thematic analysis interprets and makes sense of it. A common pitfall when doing a thematic analysis is to use the main interview questions as themes (Caufield, 2020:133). Typically, this reflects the fact that data have to be summarised and organised rather than analysed (Braun & Clarke, 2016:297).

Braun and Clarke (2016: 298) distinguish between two levels of themes, namely, semantic and latent. They posit that sematic themes within the explicit or surface meanings of the data and the analysis is not looking for anything beyond what a participant has said or what has been written. The analysis in this worked example identifies themes at a semantic level and is representative of much learning and teaching work. On the other hand, the latent level looks beyond describing what has been said. For instance, a researcher needs to identify or examine the underlying ideas, assumptions, conceptualisations, and ideologies that theorised as shaping or informing the semantic content of the data (Braun & Clarke, 2016:135).

Braun and Clarke's six phase of doing thematic analysis was used in a following manner: Before describing each step, the audio-recorded data were transcribed into written work by the researcher. The audio-recorded data improved the reliability (member checking) and internal validity of the results, as well as the researcher's interpretations of the data and conclusions. However, that was accompanied by loss of some properties of speech such as pronunciation, rhythm and intonation. Nonetheless, the researcher tried to transcribe as much non-verbal communication as possible to retain the context (Creswell, 2021:301) and make the transcripts as representative of the original interviews as possible. All this was achieved by adhering to Braun and Clarke's steps of analysing the data. A brief description of each step follows next:

Step 1: Become familiar with the data: The first step in any qualitative analysis is reading, and re-reading the transcripts (Braun & Clarke, 2016:173; Caulfield, 2020: 107). The view extract of the information gathered from the students from Unisa

was used for this purpose. The researcher tried by all means to familiarise himself with the entire body of the data before he proceeded to other steps of the analysis. Some notes were jotted down.

Step 2: Initial codes were generated: In this phase, the researcher organised data in a meaningful way. Coding reduced more data into small chunks of meaning. There are different ways of coding, and the method is determined by the researcher's perspective and research questions. During this phase, the researcher worked through each transcript coding every segment of the text that seemed to be relevant to or specifically address the research questions. After finishing coding, codes are compared and modified before moving to the rest of the transcripts. As the researcher worked through them, new codes were generated and modified (Clarke, 2019:98).

Step 3: Search for themes: As defined earlier, a theme is a pattern that captures something significant or interesting about the data or research question. As Braun and Clarke (2006:195) explain, there are no hard and fast rules about what makes a theme. A theme is characterised by its significance. If the researcher is dealing with a small data set, there may be considerable overlap between the coding stages. During this stage, codes were examined and some of them clearly fitted together into a theme.

Step 4: Themes were reviewed: This phase involved reviewing, modifying and developing the preliminary themes that were identified in stage 3. They are examined to find whether they are making sense or not. All relevant data to each theme is gathered together. During this stage, the researcher is required to read the data associated with each theme and to consider whether the data really support it. The next step is to think about whether the themes work in the context of the entire data set. Themes should be coherent and should be distinct from each other (Braun & Clarke, 2019:589).

Step 5: Themes were defined: This was the final refinement of the themes. The main aim of this phase was to identify the essence of what each theme is about. What the theme is saying? If there are any subthemes, how do they interact and

relate to the main theme? The researcher has to check out on how the themes relate to each other (Clarke, 2017:67)

Step 6: The final stage was writing up: Usually the end point of research is some kind of a report, often a journal article or dissertation (Braun and Clarke, 2017:171; Gareth and Hayfield, 2017:239). After analysing the data, the researcher wrote down a report clearly showing his findings. Findings of this study were presented in Chapter 5 and summary of the data was given in Chapter 6.

4.12 TRUSTWORTHINESS

The researcher employed the qualitative method in his study. According to Creswell (2018:18), four dimension criteria, namely, credibility, dependability, conformability, and transferability are used to assess the robustness of qualitative study; hence, the concepts of validity and reliability are foreign to the field of qualitative research.

In qualitative research, trustworthiness has become an important concept because it allows researchers to describe the virtues of qualitative terms outside of the parameters that are typically applied in quantitative research. One of the biggest concerns that the researcher had was the issue of this study's trustworthiness. Creswell (2021:253) and Tilak and Glassman (2020:326) argue that researchers should make all aspects of their analysis open to public inspection. In considering trustworthiness in any qualitative inquiry, there is a need to determine whether the study is believable and accurate, and whether it is useful to people beyond those who participated in it (Gareth & Hayfield, 2017:238; Than & Albattat, 2021:222; Schachtebeek, Groenewald & Nieuwenhuizen, 2018:6).

Assessing the accuracy of qualitative findings is not easy. However, there are several possible strategies and criteria that can be used to enhance the trustworthiness of qualitative research findings. Trustworthiness is the corresponding term used in qualitative research as a measure of the quality of

research. It is the extent to which the data and data analysis are believable and trustworthy. This necessitates a consideration of the concepts of validity, reliability and generalisability. However, according to Scharp and Sanders (2018:143) and Hacki and Hoerbst (2021:1709), the customary evaluation criteria of validity, reliability, generalisability, and objectivity in quantitative research are not applicable in qualitative inquiry. Scharp and Sanders (2018:143) further maintain that for qualitative inquiry to be trustworthy the four concepts namely, credibility, transferability, dependability, and confirmability should work together. In the present case, however, trustworthiness was achieved by using the following methods: credibility, confirmability, transferability, dependability, member-checks, peer-review, methodological validation, and ethical considerations.

Mukan, Fuchyla and Ihnatluk (2017:134) proposed a set of criteria to judge the trustworthiness of the interpretive research. Research is considered to be of a good quality if it has credibility (internal validity), transferability (external validity), dependability (reliability) and confirmability (objectivity) (Cypress, 2017: 255). If researchers are honest and conscientious in their efforts for approximation of truth, the results hold resonance for people in other contexts and the steps and methods of the study are described in detail, then the study has the elements of the quality criteria (Raja & Nagasubraman, 2018:165; Phungsuk Ratanaolarn, 2017:297; Perez-Ramirez, Arroyo-Figueroa & Ayala 2019:45; Nagel, 2018:4; Niitembu & Tautika, 2019:39; Nelson & Goodson, 2021:7).

4.12.1 Credibility

Credibility contributes to a belief in the trustworthiness of data through the following attributes: prolonged engagement, persistent observations, triangulation, referential adequacy, peer debriefing and member checks (Korstjens & Moser, 2017:120; Nhamo & Malan, 2021:137). The study was credible in the sense that accuracy will be ensured by identifying participants who are directly involved in the field being studied. The study involved students involved in an ODeL context, using technology in their studies. In establishing credibility, parameters will be defined in the research questions of the study.

4.12.2 Transferability

Transferability is the generalisation of the study findings to the other situations and contexts. The contexts in which qualitative data collection occur define the data and contribute to the interpretation of the data. For these reasons, generalisation in qualitative data is limited (Korstjens & Moser, 2017:122; Black, 2017:59; Nesenbergs & Mednis, 2021:11; Morlin, Ganz & Gregori, 2017:1117). No claim was made with the regard to generalisation of the results in this study. In this study, the aim of the interviews conducted with the selected participants was to obtain in-depth information and not generalisability.

4.12.3 Dependability

Dependability is the extent to which other researchers could repeat the study and that the findings would be consistent. In other words, if a person wanted to replicate a particular study, they should have enough information from your research report to do so to obtain similar findings as your study did (Creswell, 2018:53; Mpofu & Nicocolaids, 2016:1; Marmon, 2021:1; Mystakidis, 2019:9). The study was dependable in the sense that if the study is repeated, it will yield the same results. Each step of qualitative component, namely, sampling strategy, how data were collected and analysed will be fully described.

4.12.4 Confirmability

Conformability is the degree of neutrality in the research study findings. In other words, this means that the findings are based on participants' responses and not any potential bias does or personal motivations of the researcher. This involves ensuring that the researcher bias does not skew the interpretation of what the research participants said to fit a certain narrative (Korstjens & Moser, 2017:124; Mtebe & Raphael, 2018:56; Mukomi, 2019:79; Murugaiah & Yen, 2019:14). In this study, my detailed description of research design may supply other researchers with clear audit trial, should they wish to conduct the similar study in different contexts.

4.13 ETHICAL CONSIDERATIONS

Procedures of requesting permission were followed. To obtain a permission the study, a letter was written to the Dean of CEDU of Unisa to ask a permission. Hence, the study involved 12 participants enrolled for Higher Certificate in ABET at Unisa. CEDU helped me with contact details and addresses of the participants. The content of the letter contained: the title of my research, the date, salutation, personal details of the departmental head such address, contact details, email address. I stated explicitly that I was enrolled for PhD in Education, the name of the supervisor was also stated, funding details and the purpose for funding, the aim of the study, how the study was going to benefit the institution, reasons for selecting ABET department, nature and procedure of the study, benefits, and how feedback will be provided.

Ethical clearance to collecting data for this study was sought from and granted by Unisa, CEDU Research Ethics Review Committee (see Appendix A). A letter of consent and assent with a return slip was issued to the participants. This was done after receiving ethics clearance letter from ERC. The content of the letter included the date, the title of the research as it appears in the research ethics application, researcher name, supervisor's name, his position and his department. In the letter the following information appeared: the benefits and outcomes of the study, the reasons for selecting them and where I received their contact details. The letter informed them that their personal information including their responses will be protected. Interview questions were included and duration for interviews was stated that their participation was voluntary, and no one will be forced to participate and that a participant can withdraw anytime if he or she feels so. The benefits for participating in the study were stated risks and measures that would be taken if any harm occurs during the study. It was also stated that their responses would be coded and kept confidential, the procedure of reporting the collected data was stated in the letter, how the data will be protected, and that there were incentives for participating in the study. A return slip was also enclosed, and participants were required to write their names and confirm whether they will participate in the study,

whether they have read and understood the study, whether they agree with recording. Thereafter, they should declare by endorsing their signatures.

The rights of the participants were observed during the study and thereafter (Mtsweni & Abdullah, 2014: 93; Hamid, Waycott *et al.* 2015:1; Hehir & Zeller, 2021:6531). Ethics of research were observed by the researcher and participants and appropriate respect, trust and autonomy were imparted during the study. Some of the research ethics observed during data collection were informed consent, confidentiality, beneficence, anonymity, and non-malfeasance. In Chapter 5, collected data will be fully analysed using TA and findings will be fully discussed.

4.14 CHAPTER SUMMARY

In this chapter, the main research question was clearly stated. The main aim of the research was also clearly stated. The three specific objectives were also listed, namely, to explore students' experiences in using the LMS for learning at the University of South Africa, to examine how distance education students use LMS for learning at Unisa and to determine how LMS support students at the University of South Africa. The components of research paradigm, namely, ontology, epistemology, methodology, and methods were fully explained. The chosen paradigm, that is, interpretivism was fully discussed. The researcher gave the reasons for choosing qualitative research approach in this study. The research design employed by the researcher was discussed. Population of study and sampling strategy used were fully explained. Furthermore, the researcher conducted a pilot study prior to conducting the main study. The researcher used the semi-structured interviews as the data collection instrument. Data were analysed using six steps of Braun and Clarke's thematic analysis. Research concepts including trustworthiness, credibility, transferability, dependability, confirmability and ethical considerations were fully explained.

CHAPTER 5: PRESENTATION AND DISCUSSION OF FINDINGS

5.1 INTRODUCTION

In this chapter research findings will be presented, themes and codes of study will be tabled, profile of the participants for the study will be tabled, and findings will be presented merging the findings of both pilot and the main study. The findings of the study will be fully discussed highlighting the similarities and differences.

5.2 PRESENTATION OF FINDINGS

The study involved 12 participants. However, the number of themes were increased to 14. Themes were derived from the interview questions which were divided into three main categories, namely, students' experiences in using the LMS, the role of the LMS in supporting learners in ODeL context and dealing with emerging technologies.

5.2.1 Areas where the participants were sampled

The study used qualitative research method to examine the effectiveness of an LMS in an ODeL environment. This chapter presents the findings sourced from responses of participants obtained through semi-structured interviews. The 12 participants include six learners from Mthatha Regional Centre which is deep rural in nature. Towns around Mthatha where participants were selected include: Mbizana, Fagstaff, Maluti, Mount Fletcher, Mount Frere, Mount Ayliff, Port St

Johns, Lusikisiki, Sterkspruit, Butterworth, Libode, Mqanduli and Elliotdale. Other six participants interviewed were from East London Regional Centre which is predominantly urban in nature. The 14 questions were converted into 14 themes and responses of each participant were presented, analysed and discussed. Common responses were grouped together to avoid repetition in terms of discussion and analysis. In Chapter 6, conclusion was drawn, and recommendations were made.

What follows are the basic themes and codes.

5.5.2 Themes and codes of the study

THEMES	CODES
1. Experience in using technology	EUT
2. Experience of interacting with other students in an online platform	EIOSOP
3. Technology makes work easier	TMWE
4. Attitudes towards the use of online platform	ATUOP
5. Online e-tutors are helpful	OEH
6. Log in times in a device	LTD
7. Experiences in using LMS	EUMS
8. Technology improves learning	TIL
9. Preferred type of technology to access leaning materials	PTTALM
10. Preferred mode of submitting assignments	PMSA
11. Network coverage	NC
12. Challenges of using technology	CUT
13. Experiences in using new and emerging technologies	EUNET
14. Online platform versus face-to-face	OPVFF

5.5.3 Profile of the participants

PROFILE FOR THE PARTICIPANTS OF THE MAIN STUDY					
PARTICIPANTS	AGE	HOME TOWN	GENDER	HOME LANGUAGE	LEVEL OF EDUCATION
1	22	Mthatha	Male	Xhosa	Grade 12
2	27	Elliotdale	Male	Xhosa	Grade 12
3	29	Matatiele	Female	Sesotho	Grade 12
4	21	Ngcobo	Female	Xhosa	Grade 12
5	23	Mqanduli	Female	Xhosa	Grade 12
6	20	MontI	Female	Xhosa	Grade12
7	23	Stutterheim	Female	Xhosa	Grade 12
8	21	Monti	Female	Xhosa	Grade 12
9	23	Qonce	Male	Xhosa	Grade 12
10	22	Monti	Male	Xhosa	Grade 12
11	21	Monti	Female	Xhosa	Grade 12
12	23	Monti	Female	English	Grade 12

The ages of the participants ranged from 20 to 29 years old. The youngest participant was 20 years old whereas the oldest participant was 29 years old, and all participants had Grade 12 as their highest qualifications hence they were all registered for the Higher Certificate in ABET. The home language for ten participants was isiXhosa, one English speaking and one participant with Sesotho as the home language. However, all participants spoke English. There were four males and eight female participants. Participants from Mthatha Study Centre came from towns like Mthatha, Elliotdale, Matatiele, Ngcobo and Mqanduli whereas participants from East London Regional Centre came from Monti, Qonce and Stutterheim.

Similar themes of the pilot study and the main study were combined to strengthen the rigour of the research findings; hence, the responses in both studies were quite similar.

5.6 PRESENTATION OF FINDINGS FROM THE SEMI-STRUCTURED INTERVIEWS FOR THE STUDY

The results of 12 participants are summarised and participants' responses are fully discussed. This is integrated with what was highlighted in literature review and theoretical framework in the earlier chapters. Detailed analysis has been done also integrating the findings with what has been said by scholars pertaining the effectiveness of the LMS in distance learning. What follows is the presentation of findings of each theme.

5.6.1 Experience in using technology

The first question was probing student's experience in using technologies in general. The issue of technology was highlighted in the literature review chapter (Chapter 2). What follows is a summary of the participants' responses based on EUT. When discussing and analysing results the term participant is sometimes abbreviated as P. These are the diverse views of the various participants pertaining the experience in using the LMS. In Chapter 3, when dealing with the theoretical framework, it was clearly stated that the theory contributed to studies dealing with students using the LMS in ODeL institutions.

On being probed about the experience of using the LMS, the first participant reported that he had experience of using the modern technologies. For example, the scanners and PDF in his cellphone can be used scan the documents required by the administrative department when registering in the university. The participant is working and studying at the same time. Computers are used in his workplace for recording data for the clients and for online payments. When probed further about experience of using the LMS in his studies, he said:

> *"When I registered at Unisa I did not experience any problem because using Internet, typing is part of my job description, and it is what I am doing on daily basis.*"

Without the participation, experiential knowledge about technology assisted him to search for online information from Google Scholar when doing assignments, can

submit his work online and was able to use the application Microsoft Word to type his assignments.

Participant 2 was also advanced because he was able to use PowerPoint presentation in his laptop. He can perform other duties in his computer like typing and can search information for his studies from the Internet. When being probed about his experience in using technology, he responded as follows:

> "*I did a computer course before I enrolled at Unisa. It is where I learnt variety of things ranging from on how to type, how to use an Internet as well as PowerPoint presentation. When I enrolled at Unisa I did not experience any problem with regard to the use of technology*."

He also shared that because we are in the 4IR era, applications like PowerPoint presentation are important and encouraged other students to use this application when presenting information in the discussion forums. He suggested that notes and summaries prepared by students can be simply shared using the hyperlink to avoid preparing many presentation slides. Information prepared can be shared with other learners during synchronous discussions in an online platform. In my view, if the online PowerPoint presentation is used effectively, it can be a powerful tool for effective teaching and learning by both teachers and learners in a virtual platform.

The third participant reported that iPod can be valuable digital devises when preparing the university and assignment. IPods are valued digital devices because they can be used anywhere as long as you have a data and a good network coverage. As she puts it:

> "*I enjoy using my iPod when doing my assignments. I use a Cam scanner to upload my assignments during the cut-off date. I start by preparing them in a Unisa examination pad and then upload them using a Cam Scanner.*"

When she was probed further, she suggested that students should download the cam scanner from the Google Play Store in their mobile phones. Cam scanners

can be used to upload the assignments during the closing dates. It is cheaper to use them than paying for the scanner in an Internet café.

Participant 4 used her mobile phone to login into Moodle and check announcements. In contrast to other participants, he was unable to type in a computer and therefore use the examination pad supplied by the university to write her work. However, she found it simple to use cam scanner in her mobile phone to scan and upload her work to the university portal during the cut off dates of the assignments. When being probed she said:

> "*In most cases I use my cellphone. For an example, I use my cellphone to login and check new announcements, I download tutorial material using my cellphone. When I have an assignment, I write an assignment in an examination pad and use the Cam scanner to upload it in myUnisa portal.*"

I also support the idea of submitting the university work online using the university portal. It is the faster and the cheaper method; it is highly reliable.

Various variables such as affordability, poverty, poor socio-economic background and infrastructure can hinder the online learning for the students enrolled in ODL. For example, when probed about the experience in using technology, Participant 5 said:

> "*I use cellphone for my studies at Unisa. It is not my cellphone. We share it together with family members. My parents are poor and cannot afford to buy my own cellphone and laptop for my studies. I write my assignments in the exam pad and use the cam scanner to upload them before submitting then in myUnisa online portal.*"

In a nutshell, mobile phone used for the studies is shared by the family members; hence, the student cannot afford to buy her own phone because she is not working. Her parents are also unemployed. Fortunately, she is able to use the cam scammer in the mobile phone and can upload her work.

When probed, Participant 6 came with the additional view that regional support centre can play a crucial role in supporting the learners. Although she shared the similar experience with the third participants, when further probed she said: "*Our regional centre gives us a lot of support when it comes to technology.*" In a nutshell, those who cannot afford to buy digital resources such as mobile phones can make use of the computers in their nearest study centres. In most of these centres, Wi-Fi is available for the connection purposes. Moreover, students can access other forms of support such as counselling.

Participant 7 just like the majority of the students is equipped with knowledge of how to use the technological resources such as computer for typing purposes and is also able to submit work using an online platform. She came with the new important point that technological devices for connection like buying your own Wi-Fi router that can be carried everywhere is important. One of the advantages of the Wi-Fi router is that it is portable as you can place it a pocket but simultaneously provide a maximum connection. When probed about the experience of using technology, she maintained that,

> "*I have my own Wi-Fi router for Internet connection purposes. After typing my assignments, I am able to submit them via myUnisa online portal.*"

In my view, this can be a useful technological device that can be supplied by the university to rural students enrolled in ODeL because there are few network signals in the rural areas.

Participant 8 underscored the importance of using technological sources for the purpose of referencing when doing university work. By making uses of good technological resources, good quality work can be produced. The learner's mobile phone, laptop or computer just need to be connected to have access to such an information. When probed about her knowledge and experience in using the LMS, Participant 8 responded as follows:

> "*I use my cellphone to communicate and search information from Google Scholar. I am also able to participate in virtual meetings at work through Microsoft Teams and the app was downloaded from my mobile phone."*

When further probed she elucidated the importance of new technologies when participating in virtual meetings and synchronous discussions with other learners and e-tutors during tough times. Participant 12 also shared the similar experiences because she also emphasised that the use of new technologies in virtual meeting is important. In addition, she maintained that "*I interact with other group members in myUnisa discussion programme and I participate in virtual meetings in my workplace*).

Participant 9 shared the same experience as Participant 6 he said:

> "*I often use laptop for my studies. I use laptop to write assignments and also to send emails. Laptop was supplied by the university to the regional office, and I collected it from there.*"

According to Participant 10, NSFAS pays more funding for the needy students although the funds need to be increased to cater all the needs of the students. Just like the majority of the participants when asked about his experience of using technology, he responded as follows:

> "*I am able to use both mobile phone and laptop to participate in discussion forums. I bought my laptop from funds deposited by NSFAS.*"

In addition to NSFAS, students are free to apply for the additional funds in addition to NSFAS. This will ensure that they have all the functional gadgets for them to execute their studies.

When drawing a conclusion about the experience of various students pertaining their experience in using LMS, the researcher came out with the following points: Student's responses varied as far as the experiences in using technologies (EUT) is concerned. Participants were able to type either using their own laptops, their mobile phones and computers from their regional study centres, although some

complained that the regional centres are far owing to the vastness and geographical nature in their areas as earlier discussed.

In various responses of the various participants, it is noticeable that distance education students frequently use a single type of technology, mainly either laptop, mobile phones for the purpose of typing, participation in the virtual discussion using Moodle. To put it, there is no integration of other technologies such as audio technologies, advanced voice mail systems and podcasts. Integration of other technologies can produce fruitful results.

5.6.2 Experience of interacting with other students in an online platform

New technologies helped the students to collaborate with the other students in virtual platforms during discussions. Students are able to exchange the ideas and gain a valuable information. When probed about the benefits of the LMS, Participant 1 responded as follows:

> "*I benefit a lot on interacting with other students online. But sometimes you find that some students are misleading us, and our module lecturer and e-tutors help us by clarifying certain topics in the study units. Other students are more helpful when we are preparing assignments and also when we are preparing for the final examinations.*"

It is clear that the online platform serves as collaboration platform on which students and e-tutors can interact.

Participant 2 underscored the importance of using the social media such as Telegram, WhatsApp and Facebook. The first two social media operate in a similar fashion. WhatsApp, for an example is an instant messaging social network app that enables interaction between the users whether in groups through the live charts, video calls and voice charts. When further probed about the benefits of using technologies such as social media, the participant said:

> "*I do interact with other students in Telegram. Telegram functions like WhatsApp. I downloaded the link from Facebook and then I search for the group doing the same course as mine. I do benefit a lot from the Telegram*

group since we share a lot of information in connection with our studies, although the group members are sometimes misleading. There are no strict rules."

I believe that if these social media platforms can be used effectively and efficiently, they can be good technological tools for learning and they can yield fruitful results.

Participant 3 and 4 shared the similar views as the second participant hence they emphasised that they benefited from using the social media groups including Instagram. For example, Participant 3 said:

"*Any group member is free to use mother tongue. The first group is on Instagram and the second one is a WhatsApp group. I got the link for the two groups on Facebook. In both groups there were Unisa students doing Higher Certificate in ABET.*"

On other hand, Participant 4 stated that

"*I have two groups, one in Telegram and a WhatsApp group. With the group members we share an information pertaining to our studies and members of the group also give clarity in topics that we do not understand. I never engaged with other students in Unisa Online discussion forum, but I am used to read contributions of the e-tutors and students.*"

One of the noticeable points as clearly stated by Participant 3 is that there is more autonomy in social media groups; hence, they can express themselves in their mother tongue bearing in mind that most participants interviewed had African languages in my profile for the participants. However, they managed to speak English during our interview sessions.

Besides benefiting from effective interaction with other students and e-tutors during the virtual discussions, Participant 5 came out with new view. She stated it as follows:

> "*I like the activities posted in the discussion forum by the e-tutors. I usually answer them and check the feedback of the e-tutors to see whether I am on the right track.*"

In my view, this is the right track as stated by the above participant. In addition to virtual discussion in a group forum, students can participate by answering the activities in form of writing in the LMS to practice for assignments and examinations. Answering activities posted by the e-tutors will ensure that they understand the subject content better.

Although Participant 6 benefited from using technologies, she insisted that she contributed little information citing the reasons that typing in a mobile phone wasted too much time and consume more data and therefore would prefer to visit the regional office where Internet is free of charge. As she puts it,

> *"I do interact with other students in an online platform in myUnisa but contribute very little because typing information in a cellphone is time consuming. But when I visited the regional centre, I made sure that I contribute a lot because there is a Wi-Fi there; so, Internet is free."*

There are those who prefer to study on their own as stated by Participant 7: "*I do not have any group, I used to study on my own."* This was in contrast to what was said by other participants. When further probed, she elucidated that in group discussions more information is verbal, and she preferred to write down and practice what she is learning as this assists her to perform well and get better marks in assignments and examinations. Studying alone is her preferred style of learning. However, she benefited in using technologies such as Wi-Fi; hence, it makes connection possible when submitting assignments, and she only hates virtual discussions.

Participant 8, 10, 11 and 12 shared quite similar experiences insofar as the benefits of using technology is concerned, for example when probed Participant 12 said:

> "*Interacting with other students and making contribution in discussions is crucial in the learning process because through interaction with other learners, I share ideas and more clarity is given to the topics that I do not understand.*"

Participant 10 responded as follows:

> "*Besides interacting with other students in an online discussion forum, myUnisa, I also make contributions in the discussions which take place in the Telegram group. Study groups are also helpful as they assist me to understand the work better.*"

Participant 11 said: "*I enjoy exchanging ideas with other students*", and Participant 12 said:

> "*Interacting with other students in online platform is a good idea. I benefit a lot because e-tutors tend to clarify difficult concepts, also remind us about the closing dates of assignments.*"

In a nutshell, participants agreed that they benefit from virtual platforms because they make it possible for them to interact with the other learners and e-tutors.

The researcher argued that students benefit immensely in virtual discussions; hence they enjoyed interacting with other students and e-tutors. E-tutors assist in clarifying the difficult issues during the online discussions such as various topics in study units. Students online help other learners to prepare for assignments and boosted them when preparing for the final examinations.

The researcher also noticed that students use Telegram and WhatsApp to interact with other learners. Participants downloaded Telegram and WhatsApp group from Facebook. Some participants are not interested in interacting with other students online citing the language barrier as they found it difficult to participate in virtual discussions using English. They prefer to use mother tongue in WhatsApp group where there is more autonomy although when further probed about the

effectiveness of social media, they complained that group members fail to adhere to group rules as they usually off tangent to the discussion topic.

5.6.3 Technology makes work easier

After digging deeper, the participants came with the following various views and 11 participants witnessed that indeed technology makes the work easier. Participant 1 maintained that technology makes work easier. He argued that there is no longer a need to use the pen and paper when doing your work, what you need to do is to type in a keyboard using the applications such as word pad instead of using a writing pad. Technology makes things easier even during the online examination period. Students can write their examinations while sitting at home. They just need the devices like a mobile phone, laptop or computer, data for the purpose of connection which is supplied by the university throughout the examination period and a strong network signal.

As he put it when probed,

> "*Technology make things easier because you do not have to use pen and paper when writing assignment; things were much easier when I was writing an online examinations hence I did not travel to the examination centre. No money was wasted. When I access technology, I just sit at home, write my assignments, upload them and post the answers without going to town*."

The second participant stated that using the LMS saves time, and an added advantage is that you can study online and have a job simultaneously. When he was asked whether technology makes things easier, he responded as follows:

> "*Technology makes my work easier. It saves time. As a person who is doing a part time job, it makes my life easy because I manage to log in using my cellphone even at work and do my university work.*"

Participant 2 supported what was discussed when doing the literature review that new technological devices enable the users to do their work anytime and anywhere. Participant 3 shared the similar view as the second participant. When asked whether technology makes things easier, she responded as follows:

> "*It makes work easier because you can do your work in any place and in anytime. There is no need to travel and go to the regional centre to look for technology which is very far from my area.*"

This simply means that if you have technological resources at home or work, there is no need to visit your regional centres that are well resourced.

Participant 4 came with the different view. She stated that technology is affordable as she responded as follows:

> "*It makes my work easier. It is affordable, for instance, if I want to submit my assignment, I just stay at home and submit it online.*"

When being probed to clarify when she said technology makes things easier, she substantiated that she was coming from the poor family and therefore could not attend the university full time. The family could not afford to pay the expensive university fees. Technology made easy for her and that is why the participant continuing with her own studies.

Participant 5 supported respondent 1, 2, 3 and 4 that technology makes things easier. As she put it,

> *"Technology makes things easier because there is no need to wait for the study material which usually takes a long duration to reach our destinations. My university is in my cellphone. I simply download what I need without wasting money travelling to town to look for the Internet café.*"

She stated that the study material is delivered late to the regional centres or post office after registration is completed. Instead of waiting for the hard copies of the study material, she simply logs into the LMS and download the soft copies of the study guide. She printed some of the materials as a backup.

Participant 6 came with a different view that is, using Google Scholar for the purpose of referencing when preparing for the assignments. When further probed, she clearly intimated that technology makes things easier and is much cheaper. For example, there is no need for the learners studying in ODL institutions to pay large sum of money buying the expensive textbooks for the purpose of referencing when writing their assignments. Students just Google and search for the relevant information. In her words when she was probed, she said:

> "*Technology makes work easier because there is no need to go to the municipal library to search for the information when one is preparing for*

assignment. I just go to Google Scholar and search the information that I need."

The study participant seemed to view 'Google' as the term to be used to describe her online information seeking behaviour. The researcher supports using Google Scholar for the purpose of referencing because there are recent articles and journals. In Google Scholar, participants can search and use an information that is up to date.

When she was asked whether technology makes things easier, Participant 7, responded as follows:

"*I prefer to use the hard copies posted by the university. I cannot say that technology makes things easier. I prefer to go to library in the regional office if I want references for my assignments.*"

The participant did not show confidence in using technology for learning purposes.

Participant 8, 9, 10, 11, and 12 supported what was being said by other participants. According to Participant 8, for example,

"*Technology makes the work easier because you can do your studies anywhere using your mobile phone. It does not matter whether you are travelling with a taxi, a bus.*"

She insisted that she can do the schoolwork even when you are travelling. Participant 9 said: "*It makes things easier because I can do studies while staying at home.*" He also supported the view of Respondent 2 and 5. In contrast, Participant 10 said:

"*Technology makes my work easier because I can manage to do studies in any time I want.*"

Participant 11 supported Participant 6 about the importance of using online library and Google Scholar when preparing for assignments and final examinations. When asked whether technology makes things easier, she said:

> "*It makes the work easier because after writing your work you can save it in the computer without printing it. There is also Google Scholar which helps me to download readings when I prepare for assignments and examinations.*"

Participant 12 also maintained that technology makes things easier. She said:

> "*Technology makes things easy because I manage to do my work at home without going to the University. I also manage to communicate with other students, send emails to my module lecturers.*"

About 11 participants agreed that technology makes things easier, the majority of them citing various reasons. The researcher believes that the more affordances newer technologies inherited, the more possibilities and opportunities for distance education to be possible.

In a nutshell, participants pointed very clearly that technology reduces costs; hence, there is no need to buy stationary to do assignments and the technology user can sit anywhere and do the work. Some of them came with the idea that technology saves time and students are able to do their work anytime they like.

Participants added that it is easier to submit assignments without travelling to the Post Office or to the regional centre during the cut off dates of the assignments. More importantly, assignments can simply be submitted online using the university portal. All this is made possible by suitable device, data and network coverage. Participants stated that study material can be downloaded from the LMS and student can use the soft copy without printing the hard copies.

Participants stated that it is so easy to search all the information you need for your assignments, projects and examinations using the global search engine called Google Scholar. Without a doubt, it is clear that technology – using the LMS, Web 2 technologies and the Internet makes the work easier for the majority of participants. Students just need a suitable device data and sufficient network coverage for them to work effectively.

5.6.4 Attitudes towards the use of online platform

On being asked about his attitude towards the use of online platforms the first participant said:

> "*Online platform like myUnisa makes things much easier. I do not have to wait for the study material to arrive in the post office or study centre which sometimes takes months. It is very easy if you have sufficient data, you just log in in an online platform and download the study material included tutorial letter 101 and the study guides. There is no need to wait for the hard copies of examination pads and envelopes from the University. I simply type my assignment using computer and submit it online during the closing date.*"

Without a doubt his attitude towards the use of online platform was a positive one. The participant used the LMS frequently to download the study material, the tutorial letters such tutorial letter 101 which contains assignment questions. He also had an access of the useful information in the administration tab.

Participant 2 displayed the similar attitude with the first participant towards the use of online platforms. He said:

> "*Online platform, myUnisa help me a lot because it is where I download my assignments and study guides.*"

When he was probed further, he reported as follows:

> "*Announcements by our lecturers are also posted in myUnisa.*"

The participant also used the online platform to view or check the announcements posted by the e-tutors. The announcements are useful because they contain an important information such as some errata in the study guide or the questions in Tutorial 101. The announcement tool is essential regarding announcing changes in the closing dates of the assignments and the guidelines for the final examination questions.

Using online platform is different that attending a face-to-face class whereby a student has to stick to a specific time and follow a time table. This was revealed by Participant 3 when she was probed, she said:

> "*I enjoy using online platform because I am able to work on my own pace. I can do my work even at midnight.*"

In a nutshell, this participant showed a positive attitude towards the use of online platform because she can work with her own pace in her own time, be it in the morning, midday or even midnight. The students had their own time to complete their work.

Participant 4 responded as follows:

> "*I like the online platform because there is no need to go to the university full time. You just study at home with your own pace. Moreover, studying online is cheaper; there is no need to pay additional hostel fees. I also enjoy social media online platforms like WhatsApp and Telegram.*"

Studying in ODL has an advantage because more money is saved. There is no need for the students to pay hostel fees or to pay a rent for accommodation. The students just sit at home and choose any course that they like. Participant 4 enjoyed using various online platform including the LMS, and other social media platforms where they form a group with other students enrolled in the same course and exchange ideas.

Participant 5 showed a good attitude towards the use of the online platforms. She said:

> "*Technology is good. It is much cheaper to study online course. This is much helpful; because our parents are not working to pay for the full-time courses in a full-time university.*"

She shared the similar views with Participant 4. When she was probed further, she said: "*The online platform myUnisa helps me to chat with other students and check the assignment results.*" In a nutshell, participants underscored the

importance of engaging with the other students in online platform, exchanging ideas and sharing an information. In my view, exchanging ideas and sharing an information can assist students enrolled in ODeL institutions to develop and gain more knowledge for the modules that they are doing.

Participant 6 emphasised the need for using additional platforms beside myUnisa. According to Participant 5, using WhatsApp as a social media platform can assist the students to gain more knowledge of the course that they are doing. In short, when asked about her attitude towards the online platform, she said:

> "*Online platform is good because it saves our money. I use WhatsApp as a social media platform to communicate with other students.*"

In my view, besides using WhatsApp as the online platform, students can benefit from using other social media platforms such as Telegram, YouTube, Instagram and Facebook. They can also make use of blogs to exchange their ideas.

Participant 7 added the important component needed for the online users to access the data when she was asked about her attitude in using online platform, she said: "*I just need to have the data for connection purposes.*" One of the reasons which make the participant to use technology is that data is expensive. Data is one of the problems which hinders the students enrolled in ODeL from using online platforms. Some students do not afford to buy data. In my view, the university should make the strong ties with the companies that are selling data to reduce their data costs more especially for the students who are studying online. If the data cost is reduced, there is no doubt that we can see visibility of the students using online platforms for the purpose of their studies.

Participant 8 displayed a positive attitude towards the use of the online platform. Her favourite online platform was myUnisa. When asked about her attitude about the use of online platform by the students enrolled in ODL institutions, she responded as follows:

> "*E-tutors post their lessons in the online platforms on different aspects of each study unit. E-tutors encourage all students to contribute to discussion*

forums. E-tutors also help us to liaise with the module lecturer if there are things that students do not understand. I use online platform myUnisa because there are so many things posted there including: summaries of the study units, feedback by e-tutors and announcements, calendar pertaining examinations dates, assignments due dates."

Though she shared the same views with the previous participants, she maintained that she used the platform to liaise with her module lecturers and e-tutors and enjoyed the summaries posted by them in online platforms. Notes and tutorials posted in the platform helped her to understand the module content better. She also emphasised the importance of frequent engagement with the other learners and e-tutors in an online platform.

When he was asked about his attitude of using online platform, Participant 9 said: "*I like online platform because I can download soft copies of study material without waiting hard copies from the university*.'' He seemed to show a good attitude. For instance, the platform was used to download the soft copies of the study material. By making use of technology, he was able to print the hard copies of the study material. When probed further about the importance of printing the study material, he stated that backups like the hard copies helped him when he experienced technical problems with the LMS and further advise that it is crucial for the students studying to buy technologies such as external hard drive so that they can store the soft copies of their downloaded materials for the study.

Participant 10 stated that online platforms are good for the students coming from the disadvantaged communities. When probed further she said that full-time universities take a limited number of students and therefore students should also try to enrol in ODeL institutions where they choose any qualification they like. They can now continue with their studies supported by LMSs. In his words, when he was probed, he said:

"*Online platform is good for us, especially those who come from disadvantaged societies. Everyone can afford and receive university qualifications because it is much cheaper than studying full time.*"

I do agree with Participant 10 that full time universities take a limited number of students. Students still utilise a chance to enrol in ODeL institutions which take quite a large number of students. In an ODeL context, students also do well and get their qualifications. Online platform is one of the support systems used by the ODL institutions.

Participant 11 and 12 shared the similar views with Participant 1, 2, 3 and 4. For example, when she was asked to tell her attitude toward the use of online platforms, she responded as follows*:*

> "*I like it and I use online platform daily for my studies. I also use social media platforms such as telegram to participate in the virtual discussions.*"

Whereas Participant 12 said:

> "*Online platform is my great saviour because I can manage to do my studies at home. There is no need to study full-time in the university and pay high fees. My university is at home*."

In a question probing the participants about their attitude of using an online platform, the researcher can conclude by saying, 11 participants displayed a positive attitude towards using online platforms. However, some participants like the LMS because the platform helped them to download Tutorial letter 101 for assignments to read the announcement posted by the university e-tutors from their portals allowed them to work on their own pace and anytime they want to complete their own work.

5.6.5 E-tutors are helpful

Supporting students with a computer literacy training workshops is a good move in an ODL environment. If this can be done in all ODL institutions, technological problems experienced by the students would be minimal.

When the participants were probed about the effectiveness and importance of e-tutors in learning, Participant 1 said:

> "*They help us to understand better the content in the study units, give us challenging activities and provide useful feedback, guide us on how to use the tools in an online platform like the discussion forum and tell us about benefits of virtual environment, give us useful tips on how to study, how to plan and structure the units in the study guide, motivate us and assist with tips on how to organise work when doing assignments.*"

The first participant appreciated the support offered by the e-tutors. For example, they helped him to understand the content better, gave them certain tasks to complete preparing them for assignments and examinations, reflect on what was done in the previous lessons, and educate them on how to use the different tabs in the discussion forums. When the literature was reviewed in Chapter 2, the researcher indicated Unisa has an LMS, branded myUnisa. The university employs the e-tutors that support the students to support the students enrolled in this institution. Participant 1 has already indicated the roles of e-tutors and the learner benefit from the support given by the e-tutor in a discussion forum.

In contrast, when Participant 2 was asked about the role played by e-tutors to support him in his studies, he said:

> "*I heard about e-tutors from my Telegram group, but I never used such online support service. I am also aware that I was allocated to e-tutor group but the university but never interact with the group. I rely mainly in the group that I joined in the Telegram.*"

In short, although Participant 2 has knowledge about the existence of e-tutors, there is no contribution he has made. He heard about e-tutors in a social media group, Telegram. In my view, the university should encourage the students allocated an e-tutor to participate in the discussion forums. Active participation in the discussion forums will help the students to prepare for their assignments and to do well in final examinations.

Participant 3 cited the language barrier as the variable that prohibits her from participating in the virtual platforms and interaction with e-tutors.

When she was asked if she benefited from e-tutors, she said:

> "*I rarely interact with them as I stated earlier that I am having a language barrier.*"

Participants 2, 3, 4, and 7 did not benefit much from the e-tutors. For example, when Participant 4 was probed if she benefited from online tutors, she responded as follows: "*I am not familiar with e-tutors.*" Participant 7 also said: "*I do not have a knowledge of e-tutor hence I never use it before*"*.* The researcher has the view that in order for the e-tutoring system to operate effectively, the university should organise an awareness programme dealing with the importance of utilising the support offered by the e-tutoring system. The researcher believes that if all students can participate in the virtual discussion forums, make contribution and exchange ideas with their e-tutors, the system could function more efficiently and effectively.

Participant 5 shared the experiences as far as the support provided by the e-tutor is concerned. When she was asked if e- tutors are helpful, she responded as follows:

> "*I benefit a lot from the e-tutors. They post useful summaries of the various study units. They provide more assistance when I am completing my assignment and preparing for the final examinations.*"

When she was probed further, she said:

> "*Recently with the help provided by e-tutors I got good assignment marks."*

Participants 6, 8, 9, 10, 11 and 12 came with quite similar response when there were problems. Participant 6 said*:*

> "*E-tutors are very helpful in supporting students studying online. E-tutors give the students studying online tips on how to study; they also help us to plan our work strategically, guide us when we are preparing for our assignments, solve our problems."*

Participant 8 said:

> *“E-tutors are very helpful. Their lessons are very structured and help us to understand the learning content better. E-tutors also provide the students with study tips.*”

The researcher believed that by providing students hints on how to study gives an added advantage to the online students. Hence, tips on how to study help the students to manage the content in the study easy and therefore do well in assignments and examinations.

Participant 9 said:

> “*E-tutors are sometimes helpful, but they are very strict in an online platform that is why I more comfortable in WhatsApp group where there is more freedom.*”

The researcher thinks that students should be given more autonomy in the online learning platform as autonomy will encourage them to express their views freely and exchange their ideas with the other students and the e-tutors.

Participant 10 said:

> “*E-tutors are helpful; hence they always keep us up to date with new information and help us to tackle our studies better and also to understand better the learning content.*”

The researcher believes that keeping students up to date with the new information and making announcements on a daily basis will help the students to adhere to the submission dates of their work and learn to tackle the new information early. As a result, students will not panic when the examinations are approaching.

Participant 11 said:

> “*E-tutors support the students in online platform by summarising the study units, making the work easier.*”

The lesson plans and mind maps posted by the e-tutors in online platform help the students to understand their work more easily. By making use of summaries students will be to get an overview of each study unit before tackling each unit in the study guide or text book.

Participant 12 said:

> "*E-tutors are helpful in our studies because they prepare lessons for us. E-tutors summarise study units and help us on how to tackle various assessment tasks."*

They all stated that e-tutors are helpful. E-tutors gave them tips on how study; they help them on how to plan for their studies and prepare for assignments and examinations.

The researcher found out that eight participants confirm that indeed e-tutors are helpful; hence they helped them to understand the learning content better in the study units, guiding then on how to use the virtual tools on online platform, and helping them about useful tips on how to structure their courses. On the other hand, few participants stated that they rarely use support offered by the e-tutors or any services offered by them. Participants choose to interact with other students in social media. The participant only uses the administrative side of the platform and check only announcements offered in the site. One participant rarely interacts with e-tutors fearing that he has a language barrier. He is also embarrassed that other students and the e-tutor might laugh him when he fails to express himself and he rather prefer to use other services offered in the LMS.

5.6.6 Log in times in a Learning Management system

The researcher asked the participant about their login times because he believes that frequent login can help the participants to catch up easy with their work, ensuring that they are not left behind in the discussion forums. Daily login is important for the student studying in ODL context; hence if students login daily will quickly learn about the changes made in the module site. Moreover, daily login will also give the students a fair chance to participate and exchange their ideas in the

discussion forums and student will do better in their assignments and will also perform better in examinations. When Participant 1 was asked about his login times in an online device, he said:

> "*I log in daily so that I do not get left behind for the new information posted by the e-tutors, also to maintain consistency in interacting with other students.*"

The researcher opines that if the students are maintaining consistency and are participating in the discussion of each module, good results are inevitable.

Participants log in for various reasons, for instance Participant 2 was more interested to read the announcements. When Participant 2 was probed about his login time an LMS, he said: "*I log in almost daily to check and read the announcements."* The module lecturer always posted announcements stating some changes in the module or correcting an errata in the assignments or if there are changes with regard to submission of the assignments. Students who login daily had a chance to see any change that is being made at an early stage. Participant 3 shared the same view as the first and the second participant though she did not state the reasons for login into an LMS. On being probed, she said: "*I login almost daily*''.

Participants use various devices to login into an LMS. For example, some students used mobile phones whereas others prefer to use laptops or computers. Students who used computers or laptops usually make use of Wi-Fi for connection purposes; because computers or laptops used more data. When Participant 4 was asked about her login times and the type of device that she used in most times, she answered: "*I log in daily using my own cellphone".* The participant did not state the reasons for participating in an LMS.

In contrast to Participant 1, 2, 3 and 4, Participant 5 came with a different response. When she was probed about her login times, she said: "*At least three times a week since I share mobile phone with family members.*" The participant shared a mobile phone with her family members. When she was further probed on

why she is sharing a device with the family members, she elucidated that she could not afford to buy her own mobile phone or laptop. The researcher has a view that student should use the money received from NSFAS to buy either an iPod or laptop.

Participant 6 and Participant 10 login four times a week. When they were asked, Participant 6 said: "*I log in using my mobile phone at least four times a week*" and Participant 10 said: "*I login four times a week in both laptop and mobile phone. I download study guides from the laptop*." It is a big concern that some students login a few times because they might lose more information pertaining the discussions that are taking place in LMS. They are also likely to see the announcements made by the module lecturer and the e-tutors after a long time.

Participant 7 also came with different view. When she was asked about her login times, she said' "*I rarely log in daily in an online device as I prefer to use my hard copies.*" Participant 7 did not show an interest of login into LMS instead she preferred to use the hard copies such as writing pad, mark reading sheets and envelopes. When she was further probed, the participant elucidated that she was not computer literate and would need basic computer training.

Participant 8 and Participant 10 login three times a week. When they were asked about their login times they responded as follows:

Participant 8 said:

> *"As a working person I login at least three times a week to ensure that I am not left behind in discussions and also in studying the useful activities posted in the discussion forum by the e-tutors."*
>
> "*I login in twice a week to make sure that I am not left behind to the activities and lessons posted by the online teachers.*" (Participant 10)

Both participants login three times to ensure that they are not left behind the activities which are taking place in LMS.

Participants 11 and 12 login on a daily basis. Participant 11 said: "*I login on daily basis,*" and Participant 12 said: "*I login daily to interact with group members and e-tutors.*" Participant 11 did not state the reasons for participation whereas Participant 12 stated clearly that she login to interact with the group members. She liked to make contribution and share her ideas with other members in the discussion platform.

In a nutshell, the researcher found that students differ in their login times. The ten were digitally literate and possess basic competencies to use their technology devises effectively and efficiency. They login for the various purposes, namely, to check the announcements posted in the discussion forum, to interact either with the other students or the online lectures. Participant 1, for example, login on a daily basis to maintain consistency on the LMS.

5.6.7 Experience in using the Learning Management System

Participants were probed about their experience and their benefits of using the LMS. With regard to the student' experiences in using the LMS, Participant 1 responded as follows:

> "*The learning platform myUnisa enables me to use the various tabs, for example, to check my registration details, biographical information or if I want to add something like changing my address or contact details I just go to my admin, for online discussions, I use discussion forums and to download the study material I use my module site.*"

The LMS contains various tools ranging from discussion forum, module site tabs and administrative tabs. In an administrative tab, for instance, participants can do various administrative tasks including changing his address if he likes, can verify his biographical information, participate in online discussions and can download the study material.

When Participant 2 was asked to share about his experience of using myUnisa, he said:

> "*In myUnisa, I usually use the tab called module site. It is where I download the assignment questions and study guides for the modules that I am doing.*"

The second participant strictly used the module site. When he was further probed, he suggested that other students should be encouraged to use the module site. Hence, all the material for the course is loaded there immediately after the student has completed registration. Participant 3 shared the similar experience as Participant 2 and said: "*I am able to use the module site to check and download Tutorial letter 101 and 201.*" When she was further probed, she said: "*I used announcement tab to check the messages and updates sent by our lecturers.*" All in all, it is also important for the students enrolled in this ODeL institution to use an announcement tool because the module lecturers and e-tutors also communicate with the students using this site.

Participant 4, 5, 6, 8, 9,10,11 and 12 respectively shared the similar views about how they use myUnisa when they were interviewed, what follows is what they said when they were probed. Participant 4 said: "*I use myUnisa portal to download the study guides and Tutorial 101 with assignment questions.*"

Participant 5 said:

> "*I use myUnisa portal to check announcements from our lecturers, to download tutorial letters, to check the administrative things including my examination centre, to update my address and contact details."*

On being probed, Participant 6 said:

> "*I do have an experience in using various tabs of myUnisa including the tab for engaging in discussion forums and the tab for downloading the study material.*"

Participant 8 said: "*I log in three times in myUnisa Online platform to check new announcements, to download the study material*" whereas Participant 9 stated that

“Discussion forum tab enable to participate in virtual discussions with other students and their e-tutors.”

Participant 10, 11 and 12 expressed the following views when they were probed about their experience in using the LMS. Participant 10 said: “*I do have experience hence I know on how to use the various tabs.*”

Participant 11 said:

> *“I use myUnisa daily to interact with other students, to interact with online lecturers and to read announcements posted by the e-tutors and the module lecturers.*”

Participant 12 said:

> “*I use myUnisa for various purposes. The online platform is used to communicate with other students, in discussions, to check the announcements, to make enquiries.*”

In contrast to other participants, when she was asked about his experience of using the LMS, Participant 7 reported as follows:

> “*I do not have an experience in using various tabs in myUnisa and need to be trained on how to use this online platform. I usually collect the study material from the post office. The study package consists of Tutorial Letter 101 for the assignments and stationery including envelopes, writing pad and computer reading sheets for multiple choice questions.*”

The participant came with a good suggestion that when registering for the first time, training should be provided to the students so that they become familiar from the onset on how to use the tabs in various sites.

In a nutshell, pertaining the experience of using the LMS, student views were summed up as follows: 11 participants used LMS. Participants pointed out that through the use of the LMS, registration details can be checked, biographical information can be easily seen and the student is free to change addresses, and the contact details, and the study material can be easily downloaded from the module site. The devices required the computer or mobile phone, the Internet or Wi-Fi to get connected and a good network coverage.

Participants preferred to use tabs in the module site to download assignments and previous examination question papers when they are available. Participants used the module site to download assignment Tutorial Letter 101 that is beneficial when

doing assignments as well as Tutorial Letter 201 which provide some guidelines about final examinations. The participant used the LMS to exchange views and ideas with e-tutors and other students in the discussion forum. The researcher supports the idea that all students enrolled in this institution should use myUnisa as each course portal features a course site tools section, which provides a wide variety of e-learning tools from which the lecturers can choose.

5.6.8 Using the Learning Management System improves learning

When participant was asked if technology improves learning, Participant 1 said:

> "*I think students need to login daily so that they are not left behind in discussions either with online teacher or with other students. Maintaining consistency in the online discussion can improve learning and help students to obtain good marks.*"

The first participant thought learning can be improved only if the students login on daily basis, participate in the discussion forum. If consistency is maintained in online discussions, he believed that all students could obtain better marks.

According to Participant 2 if discipline is maintained and all students contributed in the LMS, there could be a great improvement in learning. When he was probed, he responded as follows:

> "*I think that students need to be disciplined. They should login regularly to check the new information and announcements posted by the university lecturers.*"

The researcher also believes that good discipline will result in great improvement in an online learning.

When Participant 3 was asked if the LMS improves learning, she said: "*I think that to login on a daily basis can help the students to improve their marks and increase their success rate.*" In addition on what was already said by participants 1 and 2, she believes that continuous use of the LMS could increase the success rate. E-learning motivates students to interact with each other, as well as exchange and respect different point of views.

Participant 4 and Participant 9 are of the view that training needs to be provided by the officials in the regional centres on how to use the technological devices. They argue that if such training is given, there could be more improvement in learning. When they were asked if the LMS improves learning, Participant 4 said: "*We need some training by the officials from the regional centres on how to use technology effectively and efficiently.*"

Participant 9 said: "*To use technology effectively for learning I need some training which I think can be offered by the officials in a regional office*."

Participant 5 and 6 shared the similar views, as Participant 5 said: "*Students should interact with their e-tutors and other students in their respective online groups more often in order to obtain good marks*." Participant 6 said:

> "*For effective use, I think that students need to login daily, use discussion forums continuously in order to familiarise themselves with the learning content. This will help us to be better equipped and obtain good marks in our modules.*"

In short, eight participants agreed that for most effective learning to take place online when the students interact with other students and with e-tutors on a daily basis and make contribution in an LMS.

Participant 7 came with a totally different response, when she was probed, she said:

> "*I don't think that LMSs can improve learning. Although I am not the user of LMSs, I think learning about various aspects of technology and practicing what you have learnt is still new to us.*"

Participant 7 did not believe that technology improves learning. When she was further probed, she said that she still believed and had more faith in traditional methods of teaching and learning.

Effective use of technology can improve students' communication skills. This was revealed by Participant 8 when she was asked if technology improves learning.

She said: "*I think that effective use of technology can improve student's communication skills, their language will improve as the result of continuous engagement with other students*."

Language will improve if there is a continuous engagement of the users with other students and e-tutors in an LMS.

Participant 10, 11 and 12 shared the similar views when they were asked to explain if technology improves learning.

Participant 10 said:

> "*All students using online platform for learning must always log in and try to use various tabs in the online platform. This will help them to familiarise themselves with myUnisa portal.*"

Participant 11 said: "*I would like to encourage other members of the group to use technology daily because it is changing all the times*" and Participant 12 said: "*By practicing and making sure that you login daily to learn new things.*"

In short, eight participants insisted that maintaining consistency in using an LMS can help students to improve learning and get better grades in assignments and examinations. They stated that if students are disciplined and login the LMS several times so that they are not left behind to the new information posted by the e-tutors, learning will improve. More importantly, daily login several times in an LMS will assist the students to familiarise themselves with the new material posted in an LMS. As a result, the success rate of students enrolled in an ODL context will increase.

5.6.9 Preferred type of technology to access the learning materials

What follows is the student's responses pertaining the preferred type of technology that is used to access learning. When Participant 1 was asked about his preferred type of technological device to access the learning platform, he said:

> "*I use both computer and cellphone. I use computer from my workplace; hence they allow us to do our schoolwork during teatime, lunch time and after hours. My USB helps me to store my work. Computers are more helpful when typing my assignments. I usually use cellphone to read the emails posted by my module lecturers.*"

The participant used both computer and mobile phone to do school work, type the assignments and read the emails posted by the module lecturer. Students using mobile phones are more likely to check the feedback posted by lecturers when they are using their cell phones because they can be used anytime anywhere.

In contrast to Participant 1, Participant 2 uses cellphone for his studies, in his words when he was probed, he said: "*I use my own cellphone in most cases but sometimes borrow a laptop from my cousin when typing assignments since I do not have my own laptop.*" The participant preferred to use a mobile phone because he did not afford to buy his own laptop. Students tend to prefer online learning; because, it is more engaging than classroom learning. Students enjoy chatting with their group members in virtual discussions using their iPod.

Although Participant 3 also uses mobile phone for her studies, she felt that hard copies are also essential to supplement the soft copies downloaded from the mobile device or computer. When she was further probed, she said: "*I use mobile phone but prefer to use hard copies and I usually collect them either from the Post Office or regional centre although I travel long distance because it is far."* However, she did not wait for the study material, while she is waiting, she can use her mobile phone for her study.

Participant 4 also prefers to use mobile phone for her studies. When she was asked about her preferred technological device, she said: "*I prefer to use my mobile phone because it is portable; I can carry it in any place, and I can log in any time I want.*" Mobile devices are advanced wireless computing devices that are capable of connecting with other mobile devices over radio networks. In this regard, users are able to access Internet-based resources without the constraints

of location or time. Mobile devices are portable devices capable of connecting to a mobile network. Examples of mobile devices include smartphones, tablets, e-readers, notebooks and personal digital assistants.

When being probed about her preferred technological device, Participant 5, said: "*I use mobile phone. I do not have a laptop or desktop computer.*" The researcher avers that students who do not have laptops can use the NSFAS funds to purchase laptops; hence, certain academic activities can be performed with the aid of a laptop or computer.

Participant 7 came out with totally different view from the rest of other participants, she preferred to use the print media, that is, hard copies in her studies. When she was asked about her preferred mode of technological device to access her studies, she said, "*I use the print media to access my study material. I usually collect the study material from my regional study centre*."

It is clear that the majority of students preferred to use both mobile phone and the laptop or computer. This was revealed by Participants 8, 10 and 12 when they were probed about the preferred technological device to access the study material. This is what they said when they were probed:

> "*I use both laptop and mobile phone depending to the place where I am at that particular moment. For example at home I use laptop to do my university work whereas at work during lunch time, I use cellphone because it is portable.*"

Participant 10 said:

> "*I use both computer and mobile phone. Mobile phone is portable. Other added advantage of the mobile phone is that it saves data.*"

The researcher believes that using both devices is good because laptop can be used when the student is preparing an assignment and because mobile is portable, student can use it anywhere to check announcements posted in the LMS.

Participant 12 said:

"*I use both computer and mobile phone. Computer is used at home and a cellphone is used during lunch time at work to check for announcements.*"

Participant 9 and 11 preferred to use computer only for her studies. When he was asked about the preferred mode of technology, Participant 9 said:

"*I use my own laptop to access the study material. You do not have to wait for a long time, immediately after registration is finalised the study material is loaded in the module site. Rather than waiting for ages for the material to arrive in the regional support centre, I just download my study guides and tutorial letters from my own laptop at home*."

In contrast, Participant 11 said: "*I prefer to use the laptop.*" When she was probed she maintained that they could do quite a number of activities, for example they can link your computer with the printer just in case they want to print the typed document.

Ten participants used both computer and a mobile phone to access the learning material. Universal Serial Bus (USB) helped the participant to store all the downloaded learning material from the LMS. They used the information in the USB as the backup.

5.6.10 Preferred mode of submitting assignments

The following are views of the participants interviewed pertaining their preferred method of submitting assignments. When Participant 1 was probed about his preferred mode of submitting his work to the university, he said:

"*I prefer online because I can even submit my assignment during the closing date. I have enough time to prepare for my assignment; there is no rush. I do not have to travel to town to post my assignment. Moreover, submitting assignment online was a saviour from COVID-19; hence I do not have to meet many people.*"

He preferred to submit his work online citing the reasons that posting an assignment is expensive as he had to travel to town in order to post the assignment.

Submitting an assignment online saves time and guarantees that the work that you submit does not get lost. The student gets an automated response immediately after submission that will enable the learner to track and trace the work just in case things get wrong. When Participant 2 was probed about his preferred mode of submitting his work, he said:

> "*I submit my assignments online. Submitting my assignments online saves time. I think that if the assignments are posted, they will not reach the destination on time. Sometimes assignment might be lost. Online submission is safe because one gets an automated reference after successful submission.*"

The researcher is also of view that submitting assignment online is the best method; because the work arrives at the university on time.

Submitting assignments online is affordable. It does not use too much data because it takes few seconds to submit your work long as if there a good network coverage. "*Online submission is affordable. There is no need to travel to Pep stores in town for submission purposes.*" When she was probed further, Participant 3 argued that those students who cannot afford to submit their work online can also submit work through Pep Stores as the university has an agreement with Pep Stores to collect student's work. Participant 5 also shared the similar view as Participant 3. When she was probed she said: "*I prefer online because it does not cost much."*

Submitting assignment online is the best method because assignments can be submitted few minutes before the closing date. Students only need enough data and a good network coverage. When Participant 4 was asked about her preferred mode of submitting assignments, she said: *"I prefer to submit my assignments Online. I can even submit my assignment in the eleventh hour during the closing date*."

In contrast with the other participants, Participant 7 expressed a different view as follows:

"*I make sure that I post my assignments because I prepare them using the assignment pads and computer reading sheets. I use the assignment covers before enclosing my assignments in Unisa envelopes.*"

She maintained that she used the study material supplied by the university to do her work. The material includes the writing pad, the mark reading cards and the university envelopes. Then after completing her assignments, she posted them.

Participant 6, 8, 9, 10, 11 and 12 shared the common views when they were asked about their preferred mode of submitting an assignment. What follows is the summary of what they said.

Participant 6:

"*Online method is the best method because there is no need to travel to town or go to Pep Stores to post the assignment. It saves time though I sometimes experience network problems.*"

Participant 8 said:

"I prefer to submit my assignments online through myUnisa portal. I think that it is the safest method of submitting work."

The researcher concurs that online submission of assignments is a good thing to do as students' work does not get lost. Moreover, submitting them online ensures that student's work is marked earlier and there is no delay in giving a feedback on how the assignment questions were supposed to be answered.

Participant 9 said:

"*Online submission because it is safe. It saves money. Submission is done whilst sitting at home.*"

The researcher believes that students who submit their work online have sufficient time to complete their work because even during the closing date of the assignment there is no need for them to time and money travelling to time to post their work, they can even submit their work before the midnight.

Participant 10 said:

> "*I prefer to submit assignments using the online portal. It is the fastest way of submitting work. Another additional advantage is that you can submit your work anytime during the cut-off date.*"

In my view, all the university students should be encouraged to submit their work online because it is the fastest method of submitting the assignments as indicated by the participant.

Participant 11 said:

> "*The preferred method is online mode because it is safe, fast and more convenient. After uploading and posting your work, you receive a reference as a proof immediately.*"

The participant is in the right track; hence, they even receive the proof of submission so there is no need to panic that your work will get lost.

Participant 12 said:

> "*I prefer to submit my assignments online because it is the safest method. Submitting assignments online saves money.*"

According to her views, submitting her work online is the safest method; hence, students can submit their work while sitting at home, anytime during the cut-off date and each learner receives a proof of submission.

Ten participants preferred to submit assignment online using the university portal, myUnisa. Only one participant preferred to submit assignment via the post. Submission is done in Pep Stores where the university has a special assignment box, and the students dropped their work in that particular box. Students around the regional offices can also submit their work via the regional offices.

5.6.11 Network coverage

What follows are the responses of the various participants gathered using semi-structured interviews pertaining the network coverage and its effects of their studies.

When being asked about how network coverage affect his studies, Participant 1 said:

> "*Sometimes I experience a poor network coverage in my location. I so wish that our university can do something to address this problem. Sometimes I have to travel to town to get connected during weekends when I am not at work. In town there is better Internet coverage. More money and time are wasted while travelling to town.*"

The foregoing participant indeed experienced a poor network coverage in his area. This problem had negatively affected the students; because he had to travel to the areas with better coverage and this involved some costs. The researcher has a view that to deal with the problem of this participant, the participant can resort on buying the different sim cards so that he can change to different service providers once he experiences the network problem whenever he experiences the problem of a poor signal. This would ensure that he has a better signal for the better Internet and can continue with his study activities.

Participant 2 experienced the poor network coverage when there is load shedding

> "*Sometimes there is very poor network coverage more especially when there is load shedding. However, I did not experience such problems during online examinations because there was no load shedding.*"

I think although load shedding can still have a negative effect on students because it results in drop of the signal and low connectivity. This a temporary challenge; hence there are few hours for load shedding – the maximum is three hours. Students can still continue with their work once the power is restored because the coverage tends to improve. With regard to poor coverage during examinations, the

university should give the second change to the students affected by load shedding and network signals during examinations.

Bad weather affects the network signal and this result in the low network coverage, therefore, affect the students negatively. This idea came with Participant 3; when she was probed, she said: "*There are some challenges more especially when we are experiencing a bad weather*." Once again, bad weather just like load shedding does not takes place a long time. As soon as the weather becomes right, signals will begin to operate, and students will continue with their work. However, if the coverage occurs during the online examinations, the university should give the affected students a second chance.

As the researcher explained earlier, a geographical area can affect the network coverage therefore, affecting the progress of the students enrolled in ODeL contexts. According to Participant 4, her location is in a deep rural area where there are mountains, when she was probed, she said:

> "*There is poor network coverage in my area. It is located in deep rural place and far from town where the network coverage is not a challenge. When searching for the network I have to go to the nearest hill.*"

This was revealed when the participant was probed that she had to climb to the hill to receive the network and get a good coverage

In contrast to the previous participants, Participant 5 did not experience the network coverage in her area. When she was probed to state whether she experienced network coverage in her area, she responded as follows: "*There is no problem of network coverage because my location is situated around the town where there is a network pole.*" It is noticeable that in most towns there are network signals and therefore, the locations situated around the towns benefit as explained by the fifth participant.

Windy conditions affect the normal functioning of the network signals. Participant 6 shared the similar experience as Participant 3. She further explained that her village is located near the hill, which is windy sometimes, therefore, posing the

connection problems. In her words, when she was interviewed: "*There is a good network coverage, but I sometimes experience network problems when it is windy.*"

Participant 7 said: "*Whether the network is available or not does not bother me as I am not used in this technology thing,*" whereas 5, 9, 10, 11 and 12 had no network coverage in their areas. Participants 8, 9, 10, 11 and 12 did not experience network problems as most of the participants were selected around East London study centre. Participants were lucky enough to reside around the city where are many network signals installed by the giant network companies including MTN, Vodacom, Cell C, and Telkom.

My view is that network signals can affect an access to and the retrieval of the information. Mobile devices used by the majority of students sometimes have a limited network or bandwidth capabilities which could be a challenge for many students enrolled in the ODL institutions. Although wireless networks used by some students can take care of this challenge of network coverage, not all mobile devices used by the students support the new networks such as 4G. Low network connectivity means a drop in a data access, and it negatively affects the students. As a result, they are likely not to continue with their study activities. In the interview conducted in the participants, the researcher discovered some participants more especially those who are located in the rural areas experienced the problems of network coverage.

Six participants complained with poor network coverage; sometimes the participants had to travel to town to get connected. Participants experienced network coverage only when there is load shedding. Some participants experienced network problems when the weather is bad like windy conditions. Participants residing in a deep rural area experienced network coverage because there few network signals.

5.6.12 Challenges of using the Learning Management System

The 12 participants responded as follows as far as challenges of using LMS:

Participant 1 said:

> *"To use technology such as Internet, one needs data which is a big challenge. To connect, one needs a data which is very expensive as the majority of us are unemployed; hence, there is scarcity of jobs in South Africa. I am blessed because there is Wi-Fi in my workplace."*

In short, Internet was the main challenge experienced by the participant. To connect using Internet is expensive. Companies are selling data at a high cost. Consequently, students do not afford to buy it owing to high rate of unemployment and poverty. Participant 2 suggested that students studying online should download the App which provides free data from the Play Store. He said:

> "*The problem is data. It is expensive, for one hundred megabytes cost twenty nine rand and last only twenty minutes. At the same time, one needs data to connect. I wish the university can supply us with data throughout the year, not only during the online examinations. However, the group members advised me to download an App which provides free data from the Internet. It helps a lot although it is very slow.*"

Technical problems also affect the students studying online. This was revealed by Participant 3 in the interviews as she said:

> "*Technical challenges in myUnisa when you try to connect you sometimes receive a massage stating that myUnisa is not responding. Secondly, no one is employed at home; so, I am struggling to buy data and a laptop.*"

The LMS is not stable. When a large number of students tried to connect, students experienced the technical problems, and the affected students usually receive a message stating that myUnisa is not responding. Participant 3 suggested that LMS needed to be upgraded.

The bursary section controlling NSFAS needed to increase the funds allocated to the needy students. This was revealed by Participant 4 during the interviews. When she was asked to state the changes experience by the students studying online that affect the effectiveness of technology, she said:

> "*Cost of data. I need my own laptop, but NSFAS funds are not enough to buy my own laptop; it is quite expensive. My parents cannot afford to buy a laptop or data because they are not working. Sometimes, I experience technical challenges when submitting an assignment in such a way that I missed the submission date one time.*"

If enough funds can be allocated to the students, they can afford to buy laptops, data and all other technological devices required by the students. Regional centres where students can access technology are far from certain students; hence, they are sometimes required to travel for a long distances. When Participant 5 was probed during interviews, she said:

> "*Data is expensive. I cannot afford to buy my own laptop. I cannot to buy my own cellphone. Regional centre to access technology is far from my place.*"

The participant also said that Unisa should also consider the distance between the student location and regional centre so that those students who are located in deep rural areas receive more financial resources to cater for their study needs.

Data should be provided throughout the year to cater for the student's needs. Participant 6 said during the interviews:

> "*I do not have laptop so if I need laptop I have to go to the regional centre, data is very expensive, and the university should supply us with data throughout the year.*"

The students also maintained that during the year they need more data so that they can search more resources when preparing for the assignments. It is not enough for the university to provide the data only during online examinations.

Participant 7 decided to work offline to prevent the challenges experienced by students enrolled in ODeL context. When she was asked about the challenges experiences by online students, she said:

> "*Cost of data. The data is not affordable almost in all the network giants. It is one of the reasons I decided to work offline by using only the material supplied by the university.*"

In most cases, she used the hard copies provided by the university. Participant 8 used to study in her local municipality library. She complained that local municipal libraries do no provide free data.

When she was asked about the challenges she experienced in her study, she said:

> "*The main challenge is data; it is expensive. Even the municipal libraries do not supply us with free data. For example, to get an Internet service one is required to pay.*"

Student had to pay for the Internet services offered in the municipal library. She usually visited the municipal library when she wanted to participate in virtual discussions in an LMS.

Participants 9 and 10 had to beg money from parents to get connected. This was revealed during the interviews.

Participant 9 said:

> "*Data is the problem because it costs, and I cannot afford to buy it because I am currently not employed. I have to beg money for the data from my parents.*"

Participant 10 said:

> "*Data is very expensive. I usually ask money of buying the data from parents.*"

Network coverage and other technical problems are sometimes experienced by students in an LMS. This was revealed by Participant 11 and 12 during an interview. Participant 11 said:

> "*The main problem is data and also technical problems which are sometimes experienced in an online platform when you log in, sometimes it becomes difficult to save your work, and your hard work just disappears.*"

Participant 12 said:

> "*Sometimes there are technical challenges in myUnisa during the submission days, you will find that the system fails when I interact with e-tutors and other members of the group*."

In short, 12 participants experienced challenges in using technology. Participants stated that the main challenge in using technology is the Internet; data is expensive.

Computers are also expensive; students cannot afford to buy computers as they come from disadvantaged backgrounds. There are also technical challenges experienced by the students in an LMS when they try to log in and this usually occurs during the assignment submission dates.

5.6.13 Experience in using new and emerging technologies

When Participant 1 was asked about his experience about the new and emerging technologies, he said:

> "*I have an experience in using Telegram. I use it when interacting with other students in group discussions. It gives more autonomy when rather than interacting with e-tutors where there are so many group rules and regulations. In Telegram, I have more freedom to ask questions from my group members without fear of language expression. Telegram is new technology and functions in a similar way as WhatsApp.*"

The first participant did not have an experience of using the new and emerging technologies.

Participants 2, 4, 7, and 9 shared the same experience as the first participant; they had no experience of using the new and emerging technologies. When they probed about their experience, Participant 2: said: "*I am not familiar with new technologies like Microsoft Teams, but I usually make video calls using my cellphone with certain students in our group."*

Participant 3: "*I am not familiar with Microsoft Teams, but I am able to make video calls with group members if I need clarity in certain topics.*"

Participant 4 said:

> "*I have no knowledge on how to use the new technologies. I think our regional offices will organise workshop one day and demonstrate on how to use the new technologies.*"

They are not familiar with new technologies like how to use Microsoft Teams in a virtual meetings although Participant 2 was able to do video calls with members of his group, he can do video calls using his mobile phone. Participant 3 thought the regional offices can equip them by organising the workshop dealing with new and emerging technologies. Participants 6, 7, 9 and 11 responded as follows:

Participant 6 said: "*I have no idea on how to use emerging technologies.*"

Participant 7 said: "*I do not have an idea about the new technologies such as Microsoft Teams.*"

Participant 9 said: "*I do not have an experience of using the new technologies.*"

Participant 11 said: "*I do not have an experience and the university should organise a workshop to show us on how to use the new technologies.*"

The researcher has the view that all people, young or old should learn to use technology as we are in the 4IR era.

Participants 5 and 10 came with a totally different view from Participants 1, 2, 3, 4, 7 and 9 they said they had an experience, and knowledge and once used the new and emerging technologies when they were probed during the interviews. When they were asked, they said:

> "*I am able to do video calls with other members of the group using a mobile phone. I am keen to learn how to use new technologies like Microsoft Teams and Zoom and hoping that our university will train me one day.*"

Participant 10 said: "*I am able to make the video calls to discuss difficult topics with members of the Telegram group.*" Telegram operates in the same way as WhatsApp, the App can be downloaded from Google Play Store and can also be used to make the video calls. Both participants were able to do video calls during

video conferencing with the members of the study group. Participant 5 was also willing to learn about the Microsoft Teams and Zoom.

Skype is a good communication technological tool where the participants are able to see each other and share and exchange ideas. When Participant 6 was asked, she said: "*I once used Skype using my cousin's laptop.*" To use Skype, the user needs data for the purpose of communication and a good network coverage.

Participant 8 was familiar with the new technology called Microsoft Teams. She uses to hold the meetings with her colleagues during the hard lockdown. During the interviews, she said:

> "*I am familiar with Microsoft Teams because during the hard lockdown in our work we used to hold meetings through Microsoft Teams. The app was downloaded from mobile phone*."

Microsoft Teams App can be downloaded from Google Play Store in the digital resources such as cellphone and computer.

Participant 12 had an experience of using new technologies like Microsoft Teams. When she was asked during the interviews about her experience of using the new and emerging technologies, she said: "*I do have an experience in using the new technologies because virtual meetings in workplace are held with the aid of Microsoft Teams.*" In the workplace they use Microsoft Teams and can be also a powerful tool for teaching and learning.

Five participants had an experience of using new and emerging technologies. Participants used video calls to discuss the content in the study guides with other members of the group. They also discuss the various units in the study guide. Seven participants had no experience of using the new technologies and suggested that the staff in the regional office should conduct the workshops based on how to use the new technologies. Owing to the complexities of using new and emerging technologies used in ODL context, university students experienced difficulties using these tools and needed additional experience prior to their use in online learning.

5.6.14 Online platform versus face-to-face

Results have shown that more participants prefer LMS than face-to-face, stating it is cheaper, you can study while you work. Some of these issues were addressed in the literature study. When the participants were asked to compare the LMS versus the traditional face-to-face platform, they responded as follows:

> "*I prefer an LMS because I can study and work at the same time; it is cheaper because you do not have to pay expensive university fees, you do not have to pay for residence accommodation.*" (Participant 1)

Participant 2 also said:

> "*Studying in distance education using online platform is much better because you can study anywhere. Early this year I managed to get a part-time job so I can study and work at the same.*"

Participant 3, 4, 5, and 6 stated that they were unsuccessful in getting the space to continue with their studies in other institutions and got help from their friends who encouraged them to study in an ODeL institution. They cited that there is more support given to the students studying online; they get NSFAS just like students attending the tertiary institution full-time.

Participant 7 said: "*Face-to-face would much better; hence I have less experience of using technological devices,*" whereas 9, 10 and 11 agreed when studying online, you can study "*anywhere"* in your own pace. Students are allowed to take few courses suiting their pace and ability. There is more support offered to the students including the counselling support for the student needing help.

Participant 12 also said that it is better to study using an LMS stating the reasons that they can study at home, it is cheaper for everyone, study material can be downloaded without waiting a hard copy from the university and it is easier to update an online course than a printed textbook. For instance, Participant 9 said: "*Online platform is better*." Participant 10 said: "*It is better to study online because you can study in your own pace and in your own time."* Participant 8 said:

“*Nowadays everybody uses technology so study online is the better way to keep with the pace and changes that are taking place globally*.”

5.7 DISCUSSION OF THE RESEARCH FINDINGS

5.7.1 Experiences in using technology

Ten participants used mobile technologies and laptops to type their assignments to send emails to submit their work online and to download the study materials. Participants did computer application technology when they were doing Grade 12 and the skills that they acquired from this subject helped them when they enrolled in the ODeL institution. Participants had experience in using Web 2 technologies such as WhatsApp, Telegram and Facebook in their studies. The findings resonate with assertions of various authors (Erlinda, 2018; Arora & Lihitkar, Chadna, 2017) that many students are familiar with Web 2 technologies such as WhatsApp as they use it frequently to chat with their friends. I am of the view that typing skills when sending the message helps the students when using technologies such as laptops and desktops.

5.7.2 Experiences of interacting with others in an online platform

The researcher found that active participation in the online platforms helped the participants to improve their thinking skills, contributed to the decision-making process, helped them to solve problems, to understand the content better. Students enjoyed exchanging and sharing ideas. Through continuous and active contribution, students obtained good scores in assignments and final examinations. Students' language skills also improved. Gillet-Swan (2017:2), Kumar and Rath (2018:10), Learnard and Snyman (2019:3) assert that active participation in an online platform helps the students to perform better in their university studies. I am also of the view that students should be encouraged by their online teachers to make a valuable contribution to the online platform as this could yield the better results. Garrison (2021:14) also opines that students are able to communicate, form group cohesion and there is an active participation and collaboration. Garrison (2019:43) termed this the social presence.

5.7.3 Technology makes things easier

The researcher found that technology helped the participants to type their university work. As a result, their work is neat when compared with the handwritten

work. Students were able to study at home and do the part-time job at the same time. Studying online was more affordable that attending a university on a full-time basis. Students paid tuition fees only; hence, they could not afford to pay hostel and private accommodation fees. Online libraries helped the students to use different sources when preparing assignments without buying expensive prescribed books. The literature reviewed, including Qwabe and Khumalo (2020:89), Graham and Jones (2016:21) and Todd, Ravi and McCray (2019:9), buttresses that technology facilitated communication and students are able to access more information within seconds, therefore making life easier. I also agree with the assertions of authors; hence students also download the materials such as study guides using technological devices.

5.7.4 Attitudes to use Learning Management System

Eleven participants displayed a positive attitudes towards the use of technology in their studies. Students stated that with the newly introduced Moodle platform, they were able to even prepare their work offline, therefore reducing the burden of an expensive data. Students were able to use the administrative tool to update their information. The negative issues identified by the students regarding LMS were expensive digital resources and interruptions such as load shedding. The research findings are in line with the findings of Bashir and Olajide (2020) that students are able to use LMS to engage with other students in the discussion forums. On the other hand, Ooko (2016:19) argues that in order to use LMS, one has to pay more money. I also refute Bashir and Olajide's views and fully agree with Ooko considering the data required when using technology is very expensive.

5.7.5 E-tutors are helpful

Eight participants showed a positive attitude whereas seven had a negative attitude towards e-tutors. Participants with positive views stated the following reasons, e-tutors provided them with more information on the subject content, guided them when preparing for their assignments, guided them when preparing for examinations, helped them to plan for the course and helped them to familiarise themselves with the study units in the study guide. The study findings resonate with those of Zvavahera and Masimba (2017:79), Ngara and Makuvara

(2017:342), Mncwabe (2020:3) that the support offered by online tutors help the students to master their studies. The researcher also argues that the guidance provided by e-tutors in LMS helps the students to perform better.

Participants with the negative views stated that e-tutors are strict to such an extent that they prefer to interact with other students in social media where there is more autonomy. Students with negative views should be encouraged by the online platform coordinators to work hand in hand with the e-tutors.

Garrison (2017:44) contends that through teaching presence, the e-tutor serves as the facilitator in an online discussion. The e-tutor provides students with proper guidance and feedback. The e-tutor intervenes only when there is a need. The e-tutor devolves more responsibilities to the students.

5.7.6 Login times in the device

Participants differed regarding their login times. Ten participants login daily to access the study materials, read the announcements posted by their e-tutors and module lecturers and to participate in the online discussions. Some students log in twice in the online device because they are busy during the week in their part time jobs. Mjo (2019:5) and Ramorola (2018:7) assert that students should be encouraged to login their online devices daily to get the better results. I agree with them hence daily login will ensure that online students access the work posted by their online teachers daily and also see the contributions made by their peers.

5.7.7 Experiences in using the Learning Management System

Eleven participants interviewed had an experience in using the online learning platform. Participants stated that they were able to use various tabs in the LMS to check the announcements, update the biographical information, for online discussions, to download the study material from the module site, to download various tutorial letters. Few participants had no experience in using myUnisa. Mtebe (2015:7), Padayachee (2017:4) and Nsamba (2019:3) concur that online students benefit immensely from the LMS, Moodle; hence, they are able to use various sites including the discussion forum, module or course site and administrative sit. I also agree that by using module site, students can download

the study guides and tutorial letters. Garrison, *et al.* (2010:1) argue that Community of Inquiry is a theoretical framework for optimal online learning to support critical thinking, and discourse among students, students and their teachers and students and the learning content. Community of Inquiry reflects a collaborative constructive approach to learning. It goes beyond accessing and focusing on the elements of an educational experience that facilitate creation of communities of learners actively and collaboratively engaged in exploring, creating meaning and confirming understanding (inquiry) (Garrison, 2019:8).

5.7.8 Technology improves learning

Participants stated that technology can improve learning if students can login daily in their LMS. Maintaining consistency in the LMS will help them to obtain good marks. Participants stated that students needed to be disciplined in order to perform better. Furthermore, participants asserted that technology would improve learning only if training on how to use digital tools is provided by officials in the regional centres so that all ODeL students become equipped. Some participants stated that effective use of the LMS improved their communication skills. The study findings resonate with those of Priyanka and Sanju (2019:80), Harris and Rea (2019:13), Adams, *et al.* (2018) and Bicen and Domir (2020:40) that by making use of technology, students are able to access even the resources like online libraries when doing their assignments. The researcher also concurs with their assertions because continuous use of LMS can improve the student's performance.

5.7.9 Preferred type of technology to access the learning materials

Participants differed regarding the preferred type of technology to access the study material. Participants used their laptops to download the study guides and previous examination question papers. Ten students were able to view soft copies of the material using their mobile phones. Few students collected their material from their regional offices and the Post Office. The literature reviewed including the authors such as Matoane and Tshaka (2018:7) who revealed that technologies used by students to access the learning material ranges from mobile phones to laptops are in line with the research findings. The researcher also concurs that

students should use their technological devices for quick access of their study material rather that collecting it from their study centres or Post Office.

5.7.10 Preferred mode of submitting assignments

Ten participants preferred to submit their assignments via online portal. Participants stated that they can submit their assignment even during the closing date. Submitting assignments in the LMS is cheap and saves time. An added advantage is that they receive an automated proof of submission. Few participants interviewed preferred to post their assignments. Ngubane-Mokiwa (2017:23) argues that submitting the work in an online portal is safe. I think it is the safest method as students stated that they receive the proof of submission immediately. This also ensures that their work does not get lost, and it should be a better practice in preparation for the online examinations.

5.7.11 Network coverage

Participants located far away from towns experienced poor network coverage because there were no network signals in their areas. As a result, they had to travel to nearest towns to search for the good network coverage. Moreover, load shedding affected their studies negatively more especially during the examination periods. Students residing in the cities and around the towns had a good network coverage and had an access in networks such as Vodacom, Telkom, MTN and Cell C. Mare and Muteza (2021:223), Pitsoana *et al.* (2020:53) assert that good network coverage enables the students connect the LMS with ease. Pertaining to the network coverage, participants showed mixed reactions. Those residing near the towns had a good coverage whereas those in remote areas experience difficulties in terms of coverage. The researcher concurs with Arko-Achemfour‘s (2017:26) findings that implementation of online education is accompanied by challenges such as network coverage.

5.7.12 Challenges of using technology

Twelve participants interviewed cited that they experienced problems in using technology. Problems include poor Internet connectivity more especially in rural areas, expensive data making it difficult to connect, no access to Wi-Fi in most areas, high cost of technological devices such as computers, mobile phones,

iPods and external hard drives, lack of support from the local municipality libraries, technical problems experienced in LMSs during the closing dates of the assignments. Ko (2018:6), Letseka and Pitsoe (2018:3), Andre and Richards (2018:8) and Ding and Wang (2017:4044) buttress that the use of technology is accompanied by problems like sky rocketing prices of data. I also agree with them, and their assertions are also in line with the research findings.

5.7.13 Experiences in using new and emerging technologies

Five participants had an experience in using new and emerging technologies. Participants had an experience in using Web 02 technologies including Telegram, WhatsApp and You tube. Few participants had an experience in using emerging technologies such as Microsoft Teams, Zoom and Skype. Priyanka and Sanju (2019: 75) assert that students use Web 02 technologies like WhatsApp. Glosses, Koutsouba and Mavrodis (2016:2016) argue that students should be encouraged to use a variety of emerging new technologies to equip their knowledge. This a good view; hence, technologies are evolving.

5.7.14 Online platform versus face-to-face

Ten participants interviewed preferred to use LMS than attending university full-time and interacting with university lecturers face-to-face. The rationale of using LMS was that it was much cheaper, saves time and can be used ubiquitously by the participants. Kalata (2017:291) highlights that online students can learn remotely without being in a regular face-to-face contact with their tutors in a lecture hall. The researcher also concurs with his assertion; hence, online students can learn ubiquitously on their own pace.

Unisa has adopted ODeL mode of learning. Community of Inquiry is suitable for online learning and therefore relate with myUnisa learning management where there is student-to-teacher, student-to-student and student-to-content interaction. This interaction takes place online and both parties use digital tools and are connected to the Internet. Successful learning takes place when there are three presences, namely social presence, cognitive presence and teaching presence.

5.8 CHAPTER SUMMARY

Themes, codes and profile of the research participants were tabled. Research findings of each participant were presented, and this was followed by detailed account of the research findings. Research findings revealed that many students were familiar with Web 2.0 technologies. It was discovered that online platforms improve the thinking skills of the participants. Technology helped the participants to study online. Participants displayed a good attitude towards the use of technology. Moreover, participants reported that e-tutors provided more information. As a result, they obtained higher scores in assignments and examinations. Few participants had an experience on how to use new and emerging technologies such as Microsoft Teams for discussion purposes. Many participants stated that data used for connectivity is expensive. Participants from rural areas reported that they experienced a poor network coverage. As a result, they find it difficult to study online. Similarities and differences of the research findings were clearly indicated.

Chapter 6 provides a summary of analysis and recommendations will be suggested and conclusions will be made.

CHAPTER 6: SUMMARY, FINDINGS, RECOMMENDATIONS AND CONCLUSIONS TO THE STUDY

6.1 INTRODUCTION

This chapter concludes the study by presenting a summary of the study findings, summary of the literature review, conclusions, recommendations, recommendations for the further study and limitations.

The detailed results of the study reported in Chapter 5 provide the answers to the following research questions: The main question is: How can technology be effective in an Open Distance Learning institution?

The sub-questions were:

- What are students' experiences in using the Learning Management System for learning at the University of South Africa?
- How do distance education students use Learning Management System for learning at the University of South Africa?
- How effective is the Learning Management System's students' support at the University of South Africa?

RESEARCH AIM AND OBJECTIVES

Research aims

The study aimed to investigate the effectiveness of technology in an open distance learning university.

The specific objectives of this research were to:

- Explore students' experiences in using the Learning Management System for learning at the University of South Africa.
- Examine how distance education students use Learning Management System for learning at the University of South Africa.

- Determine the effectiveness of the Learning Management System in supporting students at the University of South Africa.

6.2 SUMMARY OF THE LITERATURE REVIEW

Various sources of the recent literature related to the effectiveness of the LMS in ODeL context were consulted. Literature reviewed include recent primary sources, international journals, recent dissertations of doctoral students and proceedings in the seminars and conferences that are based on effectiveness of technology in ODeL (see various sections in Chapter 2).

The impact of the 4IR on higher education was highlighted in the literature review considering that technology is the key driver in the ODeL institutions (See section 2.4 of Chapter 2). The effectiveness of technology at University of South Africa as the case study of the main study were compared in relation to other global ODeL institutions (See section 2.7 and section 2.8 of Chapter 2) .Implementing technology in ODeL institutions is accompanied by challenges including the digital divide in the remote geographical areas and Internet which is expensive (see section 2.9 of Chapter 2).

However, desirability of using technology especially the LMSs was highlighted in the literature; because it improves communication between the students and their online teachers, enhances engagement and frequent use of technology can yield the better results (See section 2.10 of Chapter 2).

The Community of Inquiry framework underpinned the study. The core elements of the Community of Inquiry framework, namely, cognitive presence, social presence and the teaching presence were discussed (see Figure 3 and section 3.2).

6.3 SUMMARY OF THE FINDINGS

The main research question answered in this study was: How can technology be effective in an ODL institution?

The three sub-questions were:

- What are students' experiences in using the Learning Management System for learning at the University of South Africa?
- How do distance education students use Learning Management System for learning at the University of South Africa?
- How effective is the Learning Management System's students' support at the University of South Africa?

Students had experience in using technologies in their daily lives. To access mobile learning, students need devices such as computer, laptops and other new technologies. To answer the research question of what are the students' experiences of using technology, participants responded as follows during the semi-structured interviews: Participants have shown that some students use modern technologies in their part time jobs. Distance learning allows students to work and study at the same time. Respondents clearly stated that they often use computer at work during the virtual meetings. Some participants had a thorough knowledge of the technologies before enrolling at Unisa. They enrolled for a short computer course in one of the private institutions and covered basic computer skills such a MS Word, Power Point presentation, Excel and Internet. Some participants did computer-aided transition in their secondary schools (see section 5.6 and sub section 5.7.1 of Chapter 5). It is clear that mobile learning has become an important educational component for the students enrolled in ODeL institutions and students had experience in using technology.

Participants' interviews revealed that technology helped them to type their university work. As a result, their work is neat when compared with the handwritten work. Students were able to study at home and do the part time job at the same time. Studying online was more affordable that attending in a university on full-time

basis. Students paid tuition fees only as they could not afford to pay hostel and private accommodation fees. Moreover, online libraries helped the students to use different sources when preparing assignments without buying expensive prescribed books (see sub-section 5.7.2).

Participants interviewed on attitudes towards the use of LMS displayed positive attitudes towards the use of technology in their studies. Students stated that with the newly introduced Moodle platform, they were able to even prepare their work offline, therefore reducing the burden of an expensive data. Students were able to use the administrative tool to update their bibliographical information and can even upload their banking information for the purpose of refund using the administrative tool. The negative issues identified by the students regarding LMS were expensive digital resources and interruptions such as load shedding. Load shedding was the main challenge during the exam period (see sub-section 5.7.4).

To answer the question on support provided by e-tutors, some participants showed a positive attitude whereas others had a negative attitude towards e-tutors. Participants with positive views stated the following reasons, e-tutors provided them with more information on the subject content, guided them when preparing for their assignments, guided them when preparing for examinations, helped them to plan for the course and helped them to familiarise themselves with the study units in the study guide (see sub-section 5.7.5 of Chapter 5. E-tutors perform pedagogical, social, managerial, and technical roles to support the students in an online learning (see section 2.10 of Chapter 2). Participants with the negative views stated that e-tutors are strict in such an extent that they prefer to interact with other students in social group LMSs where there is more autonomy. E-tutors should allow them to use the language of their own choice (see sub-section 5.7.5 of Chapter 5).

Pertaining the login timelines in the LMS, participants differed in times they visited the LMS. Few students login daily to access the study materials, read the announcements posted by their e-tutors and module lecturers and to participate in

the online discussions. Some students login twice in the online device because they are busy during the week in their part time jobs (see sub-section 5.7.6).

Active participation is crucial in the LMS. Participants stated that they benefited from interacting with others; hence, they gained more information shared regarding the subject matter during the exchange of ideas. Students in the LMS helped to clarify difficult topics and they can tackle their assignments better because of active participation (see sub-section 5.7.7 of Chapter 5). In a nutshell, students who actively participate in online discussion forums develop problem solving skills and develop their social skills

Most participants interviewed had an experience in using the myUnisa online learning platform. Participants stated that they were able to use various tabs in myUnisa to check the announcements, correct the biographical information, for online discussions, to download the study material from the module site, and to download various tutorial letters (see sub-section 5.7.8 of Chapter 5). Few participants had no experience in using myUnisa. Discussion forum in myUnisa enables students to exchange ideas and understand the learning content better. Students enrolled in ODeL should be able to use the tools in myUnisa. When the students know how to use the tools in a platform, they will be in a position to access the various sites in an LMS.

To answer question on how does technology impact learning, students explained that LMS improves the learning process. Participants stated that technology can improve learning if students can log on daily in their LMSs hence maintaining consistency in the LMS will help them to obtain good marks. Some stated that students needed to be disciplined to perform better. Participants reported that technology will improve learning only if training on how to use digital tools is provided by officials in the regional centres so that all ODL students become equipped. Some participants stated that effective use of technology improved their communication skills (see sub-section 5.7.9 of Chapter 5).

Participants interviewed differed regarding the preferred type of technology to access the study material. Some participants used their laptops to download the

study guides and previous examination question papers. Many students were able to view soft copies of the material using their mobile phones. Few students collected their material from their regional offices and the Post Office (see sub-section 5.7.10). Clark (2020:159) and Yang and Baldwin (2020:149) buttress that preferred technologies used by students to access the learning materials include tablet and iPods. Students can access the learning materials using the softcopies and hard copies.

Most candidates preferred to submit their assignment via online portal. Students stated that they can submit their assignment even during the last hour on the closing date. Submitting assignments using the LMS is cheap and saves time. An added advantage is that they get an automated proof of submission. Few participants interviewed preferred to post their assignments (see sub-section 5.7.11).

Students in far geographical areas usually experience the network problems compared to students residing in urban areas. Students interviewed stated that this is because there are few network signals in a rural area than in urban areas. Participants located far away from towns experienced poor network coverage because there were no network signals in their areas. As a result, they had to travel to nearest towns to search for the good network coverage. Load shedding affected their studies negatively more especially during the examination periods. Students residing in the cities and around the towns had a good network coverage and had access to networks such as Vodacom, Telkom, MTN, and Cell C (see sub-section 5.7.12 of chapter 5 and section 1.5 in Chapter 1).

Interviews conducted revealed that the use of technology and technological devices has benefits, but it is accompanied by some challenges. Participants interviewed cited the problems poor Internet connectivity, more especially in rural areas, expensive data making it difficult to connect, no access to Wi-Fi in most areas, high cost of technological devices such as computers, mobile phones, iPods and external hard drives, lack of support from the local municipality libraries,

technical problems experienced on the LMS during the closing dates of the assignments (see sub-section 5.7.13 of Chapter 5).

Technologies are evolving and students should try to familiarise themselves with the new technologies to keep up with the pace. In the interviews conducted participants had an experience in using Web 02 technologies including Telegram, WhatsApp, Facebook, Twitter, Instagram and You Tube. Few participants had an experience in using emerging technologies such as Microsoft Teams, Zoom and videoconferencing (see sub-section 5.7.14 of Chapter 5).

Lastly, participants interviewed preferred an online mode of learning than face-to-face (see 5.7.15 of Chapter 5).

6.4 CONCLUSION OF THE STUDY

The majority of participants interviewed had a minimal experience in using the LMS. For an example, some of them started to use technological devices during their high school years. The common devices used by the participants were computers, mobile phones and cam scanners. Students need to use more modern technologies to participate in online learning. There were few participants who did not have an experience on how to use online technologies for their studies. Recommendations were suggested to cater for those students so that effective use of technologies and effective learning can take place in the ODeL context.

As far as experience in interacting with other students in LMS is concerned, conclusion can be made that students do interact with other students in LMS as shown by the findings. The mode of platforms used to interact with other students differ. For instance, some participants prefer to use the universal portal, myUnisa. They interact with other students through virtual discussions, whereas other students prefer to interact with other students using the social media platforms such as WhatsApp and Telegram. Students downloaded these social media

platforms from Facebook. In contrast, other group of students preferred to use the print media and work on their own. The latter stated clearly that they need training on how to use the LMS. Recommendations were made on how to use the LMSs for the benefit of the students enrolled in ODeL environment.

Students displayed a good attitude in the use of the LMS. Students had a good experience of using technologies in their studies and they benefit immensely from using technologies more especially the LMS where they can access all their biographical information. Students can manage to change their details without travelling to the university, they can read the announcements posted by the module lecturers, and they can change their examination venue using an LMS and they can even partake in online examinations.

Pertaining the experience in using support provided by e-tutors, some students find it useful to interact with e-tutors because they clarified the difficult concepts for them, gave useful feedback for assignments written and helped them to prepare for the final examinations. Others are larkers hence they do not interact directly with the e-tutors but waited until the discussions are over then read all the posts of the e-tutors. Other participants stated that language barrier prohibits them to interact with e-tutors in a virtual discussion. In a nutshell, students had diverse views in experiences in using technologies.

In answering the second question: How do distance education students use Learning Management System for learning at the University of South Africa?, it was discovered that the participants used the devices such as computers, laptops and mobile phones to access their material and the support offered by the LMS. The majority of students used modern mobile technologies and few participants used technologies like Microsoft Teams to participate in virtual discussions. Only one student relied on the print media technologies to access the study material and the tutorial letters. Respondents preferred to use an online technology to submit their work to the university citing the reasons that it is cheaper, safer method; hence, they get a reference when submission is successful. There were few students who still preferred the traditional method of posting the assignments.

Students pinpointed that they experience several challenges in accessing the new emerging technologies and other technologies. The problems include, an expensive data, technical problems experienced in MyUnisa during deadlines of submitting the assignments, and some participants cannot afford to buy the expensive computers. Recommendations were made on how to address the afore-mentioned challenges. Few participants had experience in using the new emerging technologies. Although they are able to use Web 02 technologies such as Telegram, but they were still lacking in using technologies such as web-based and audio technologies and some emerging computer based technologies.

In answering the last question: How effective is the Learning Management System's students' support at the University of South Africa, the researcher conclude that students should login daily in the LMS. Hence, in their responses, they tend to vary with their login times using LMS. The rationale of login daily is to access support offered in the LMS including the support offered by the e-tutors, support offered by other students and support offered by the module lecturer. This will also help that students are not left behind. Various support available in the LMS include feedback, announcements, information regarding exams, students can access the online library when they are doing their assignments and preparing for the final examinations. Students can interact with other students in the discussions to get more support. The preferred device used by students was a mobile phone because it can be used anywhere. Recommendations were made regarding the importance login daily.

6.5 RECOMMENDATIONS

The main research question was: How can technology be effective in an Open Distance Learning institution?

For the effective use of e-LMS, the university should design a live learning LMS where there should be a live interaction between the students and the e-tutors. This can also help to track the students who do not participate in the discussion forums. The online register will be signed by the participants who are present the same way it is done on the Microsoft Teams. This will also allow the e-tutor to display the slides of the discussion topic. Shy students can also get the chance to post in the chat box to raise their concerns or to ask questions.

The implementation of podcasts in all courses as it done by students doing Law can play a major role as this helps the students to pronounce difficult words or terms that they find difficult to understand and hinder their progress in the online learning. Students can also listen the recordings of the podcasts anytime and anywhere they like using their earphones. More recommendations will be fully discussed when discussing the sub-questions.

Recommendations of the sub-research questions developed from the main question are as follows:

6.5.1 What are the Students' Experiences in Using Learning Management System for learning at the University of South Africa?

The researcher found that students used technologies and it was recommended that the university should provide all the first year students with laptops as most students that were interviewed used mobile technology for their online studies. This is because the majority of them do not have enough money to buy laptops as they are expensive. Unisa Financial Aid Office should ensure that some funds from NSFAS should be used to buy a laptop. Laptops will be useful when the students preparing for assignments and when they are writing online examinations. Moreover, using a laptop, the study material downloaded from the university portal can be stored in a USB just in case the laptop is creased or is infected by the virus. When using technology, the backup material is crucial. Students can also use laptops when they are having a virtual class with their online lecturers.

Some participants login in an LMS once or twice per week. It is recommended that students should login on a daily basis to ensure that they are not left behind in the

work posted by the e-tutors. Participating daily will also help the students to study feedback of the assignments posted in the sites, to interact with the other group members and contribute in the virtual discussions, to check the new announcements pertaining the assignment due dates, errata in certain assignment questions and the tutorial letters which contain an information regarding the final examinations.

Student's involvement and participation in LMS should be encouraged. Through participation in the virtual discussions, more knowledge will be gained from the e-tutors and other members of the group. To achieve this, there should be a smaller percentage of mark for participation in the virtual discussion included in the final mark of each student during the examinations. This will ensure that almost all students enrolled in the ODeL context participate. Students should be encouraged to submit their work using the LMS. As stated by other participants, submission of the assignments using the LMS is the cheapest and safest one since students receive reference as a proof of submission immediately after their work is loaded in an LMS. In Chapter 3, Garrison underscored the importance of cognitive presence during the interaction which takes place during the virtual discussion in an LMS. Cognitive presence is the extent to which students are able to construct and confirm meaning through sustained reflection and discourse.

6.5.2 How do Distance Education Learners use Learning Management System for learning at the University of South Africa?

Based on this question, the researcher came out with the following recommendations: Although students used the new technologies of the social media some improvement need to be done on how to use social media in online learning. More focus should be on improvement in the use of social media platforms. If used properly, social media apps can serve as an important tool for teaching and learning. I would recommend that the university lecturers should also participate in the WhatsApp groups of their modules to ensure they are only used for the purpose of discussions for the topics of a specific module. Appointment of more e-tutors for support will reduce the burden of the module lecturer and ensuring that students do not go off tangent during the virtual discussions.

Moreover, the university planners should encourage the students to form the learning groups in other social media platforms such as You Tube, Twitter, Facebook, snap chats, Vibe, tumbir, blogger, Word press and Instagram. The researcher believes that if all the suggested social media platforms are used effectively, effective use of technology in ODeL will be guaranteed and student will perform better in their studies.

The module lecturers should provide videos for the different study units so that students can play them using their computers. Research has shown that videos can play a significant role for the students enrolled in ODeL environments. In a video, students can see the e-tutor or module lecture doing a verbal presentation of the lesson or study unit, writing meanings and definitions in a PowerPoint presentation slide and explaining the meaning of the difficult words. In a nutshell, e-zones as done by OAU in Nigeria can benefit Unisa students and effective use can yield the best results. In addition to the help provided by the e-tutors on reading materials and online discussion forums between the students and e-tutors and between the students and students, the university coordinators should also focus on other activities such as audio, social networking and online conferencing.

6.5.3 How effective is the Learning Management System's students' support at the University of South Africa?

Based on the findings discussed in Chapter 5, the researcher came with the following recommendations: Unisa needs to make ties with the companies that are implementing the 5G project. The researcher argues that implementation of 5G will overcome the problem of poor network coverage in remote rural areas where most of the participants were located and therefore, overcome the problems of digital divide. Students need a good network coverage to access the support in the learning platforms.

The university module lecturers are encouraged to load the podcasts in the LMS to ensure that the students hear their voice recordings when pronouncing difficult words of the study units in the study guide and difficult words in the lessons they prepared for the students. Students should be encouraged to interact with their e-

tutors using the LMS; hence, this will help them to maximise their performance. There is more support provided by e-tutors.

The problem of technical challenges was also cited by students regarding the LMS. The problems usually occur when the system is overloaded during the assignment due dates. Some students experience technical problems when they participate in the online virtual discussions. The university should improve the capacity of the LMS day and night to minimise the problems stated by the participants.

Some participants more especially those coming from the rural areas complained about the network coverage. The university should work closely with network giants to ensure that they install more network poles in the rural areas. This will reduce the costs of the students who travel from their townships to towns to have an access of the network.

In order to connect, online students need data bundles. Unisa should collaborate with local municipality libraries for the provision of free Wi-Fi and other online materials. This can help to reduce the problem of expensive data as stated by many participants. Data bundles to be provided throughout the year for the registered students and not during examinations as it is done at Unisa. Another possible solution, the university should make ties with giant networks like MTN, Vodacom, Cell C and Telkom to make discounts and sometimes to provide free data for the students enrolled in an ODeL context. The researcher believes that if all students are connected, the number of students using the LMS will increase.

6.6 RECOMMENDATIONS FOR FURTHER STUDIES

In relation to the relation to the area of this study and limitations of the study, there are many provisions for further study using the theory employed in the study and the interview schedule in a wider scope. The wider scope of the further research

may include all students of Unisa in Adult Basic Education. The study could be conducted on factors affecting technology in higher learning institutions in South Africa. Another study could be conducted to investigate the effectiveness of technology in the distance and technology enabled contexts in a global context. To cater for a large group, quantitative method will be employed.

6.7 CONTRIBUTIONS OF THE STUDY

In the study findings, though it has been revealed that many students enjoy using technology in their studies, for example they interact with other students in virtual discussions to increase their knowledge, they use the information from the LMS to prepare for assessments. Eventually, they obtain good scores in the assessments. They also found working with e-tutors who provide more support to be useful. Besides contributions made by the study on examining the effectiveness of technology in ODL, the study has made contributions by digging deeper the challenges experienced by students studying online. Challenges cited by the students and the recommendations made by the researcher can guide other researchers who want to make an improvement by doing further research.

Challenges spotted out in the findings that contribute to the body of knowledge for the researchers included the following: poor network coverage experienced by online students in the rural areas; the problem of data for the previously disadvantaged students; the technical problems in the LMS when students are submitting their work during the closing dates; students not familiar with the new and emerging technologies; lack of training. Researchers who want to do this study need to examine in detail the afore-mentioned factors and come with further recommendations. The researcher contends that if more studies are conducted on effectiveness of technology in ODeL, there will be more improvement.

6.8 LIMITATIONS OF THE STUDY

There were some unavoidable limitations and challenges that must be acknowledged. Like all the case studies, the interpretation of the study's findings is limited in several ways. While data elicited from the participants provided valuable insights in relation to effectiveness of technology for students enrolled in an ODeL environment, it must be acknowledged that experiences were from Unisa students

enrolled in a particular course and cannot be generalised to other global ODeL institutions.

Although a fair number of students took part in the study, readers should be aware that this is a single case study which investigated the effectiveness of technology for students enrolled in an ODeL enabled context. Furthermore, this study is limited to the use of qualitative research approach only. It did not cater quantitative approach and other research approaches. Another challenge was issue of getting people to participate in the study, that is, 12 participants in the main study was not enough to form the full picture of the study. The researcher would like to include as many as participants as possible in order to get a broader understanding about the effectiveness of technology for the students enrolled in ODeL context, but limited resources made it impossible. At the end of the study, the researcher did his best get the best findings based on the effectiveness of technology for the students enrolled in a distance and technology enabled institution.

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APPENDIX A: Unisa Ethical Clearance

UNISA university of south africa

UNISA COLLEGE OF EDUCATION ETHICS REVIEW COMMITTEE

Date: 2020/11/11

Ref: **2020/11/11/7208545/15/AM**
Name: Mr PZ Msekelwa
Student No.: 7208545

Dear Mr PZ Msekelwa

Decision: Ethics Approval from 2020/11/11 to 2025/11/11

Researcher(s): Name: Mr PZ Msekelwa
E-mail address: zingisap@yahoo.com
Telephone: 0724274836

Supervisor(s): Name: Prof. G. P Baloyi
E-mail address: baloygp@unisa.ac.za
Telephone: 012 484 1062

Title of research:

An investigation of the effectiveness of technology in Open Distance learning: A case study of the University of South Africa.

Qualification: PhD Adult Basic Education

Thank you for the application for research ethics clearance by the UNISA College of Education Ethics Review Committee for the above mentioned research. Ethics approval is granted for the period 2020/11/11 to 2025/11/11.

*The **low risk** application was reviewed by the Ethics Review Committee on 2020/11/11 in compliance with the UNISA Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.*

The proposed research may now commence with the provisions that:

1. The researcher will ensure that the research project adheres to the relevant guidelines set out in the Unisa Covid-19 position statement on research ethics attached.
2. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.

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

3. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the UNISA College of Education Ethics Review Committee.
4. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
5. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing.
6. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
7. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.
8. No field work activities may continue after the expiry date **2025/11/11**. Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

The reference number **2020/11/11/7208545/15/AM** *should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Kind regards,

Prof AT Motlhabane
CHAIRPERSON: CEDU RERC
motlhat@unisa.ac.za

Prof PM Sebate
EXECUTIVE DEAN
Sebatpm@unisa.ac.za

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APPENDIX B: Memo to institution requesting permission to conduct the study (Vice Principal: Academic and Research)

122 Kenton Residential Area

90 Dr Prixley Kaseme Street

Durban

4000

15 September 2020

Vice Principal: Academic and Research

University of South Africa

P.O.Box 392

Unisa

0003

Dear Madam/Sir

REQUEST FOR PERMISSION TO INTERVIEW UNISA STUDENTS ENROLLED FOR ABET COURSE

I wish to request your permission to interview students enrolled for ABET course at the College of Education (CEDU) at University of South Africa. The purpose of the interview is to collect data required for my research study entitled: **An investigation of the effectiveness of technology in distance learning environment: A case study of the University of South Africa.**

I am currently a registered doctoral student in the CEDU. The study will benefit, students studying online and the University because it could contribute to a better and more comprehensive understanding of the effectiveness of technology in distance learning. The study is expected to contribute the value and input to the pool of already existing body of knowledge based on how effective technology is in the distance learning context. The study will be useful in both online lecturers, students studying online and researchers by providing a clearer view and deeper understanding on many issues related to the effective use of technologies to enhance the students' performance. The needs of students studying online will be known and improvements will be made.

If the risks are experienced during the research the researcher will try mitigating such risks, deal with emanating risks accordingly and adhere to the policy. There will be no

reimbursement or any incentives for participation in the research. Feedback procedure will entail final dissertation that will be published in the University website. Both participants and the University will access it from the website.

Your co-operation in this matter will be highly appreciated

Yours sincerely

Msekelwa P.Z. (7208545)

Email Address: zingisap@yahoo.com

Tel: 0475481132

APPENDIX C: Memo to institution requesting permission to conduct the study (Executive Dean)

122 Kenton Residential Area

90 Dr Prixley Kaseme Street

Durban

4000

15 September 2020

Executive Dean

University of South Africa

P.O.Box 392

Unisa

0003

Dear Madam/Sir

REQUEST FOR PERMISSION TO INTERVIEW UNISA STUDENTS ENROLLED FOR ABET COURSE

I, Patrick Zingisa Msekelwa, am doing research under supervision of Prof Gezani Baloyi, in the Department of Adult Basic Education and Youth Development toward PhD in education at the University of South Africa.

We have funding from UNISA Directorate Student Funding. The funds are for editing, photocopying, buying data for virtual meetings and workshops. We are inviting you to participate in a study entitled **an investigation of the effectiveness of technology in distance learning: A case study of the University of South Africa.** The aim of the study is to investigate the effectiveness of technology in distance learning for the students enrolled in an Open distance and e-learning context .Your department has been selected because the study involves participants enrolled in Higher Certificate in adult basic education in your university. All participants study online and supported by e-tutors. They have experience in e-learning. The study will entail semi-structured interviews of 12 participants enrolled in ABET course, studying in an ODL and technology enabled context, that is, 6 from Mthatha regional centre and 6 from East London regional centre, in the province of Eastern Cape. Their responses will be audio recorded, transcribed, coded and organised into a meaningful way.

The study will benefit, students studying online and the University because it could contribute to a better and more comprehensive understanding of the effectiveness of technology in distance learning. The study is expected to contribute the value and input to the pool of already existing body of knowledge based on how effective is technology in the distance learning context. The study will be useful in both online lecturers, students studying online and researchers by providing a clearer view and deeper understanding on many issues related to the effective use of technologies to enhance the students' performance. The needs of students studying online will be known and improvements will be made.

If the risks are experienced during the research the researcher will try to mitigate such risks, deal with emanating risks accordingly and adhere to the policy There will be no reimbursement or any incentives for participation in the research. Feedback procedure will entail final dissertation that will be published in the University website. Both participants and your department will access it from the website. Email will be sent to your department to inform you once the dissertation is available.

Your co-operation in this matter will be highly appreciated

Yours sincerely

Msekelwa P.Z. (7208545)

Email Address: zingisap@yahoo.com

Tel: 0475481132

APPENDIX D: Participant Information Sheet

15 SEPTEMBER 2020

An investigation of the effectiveness of technology in the Open Distance learning environment: A case study of the University of South Africa

Dear prospective participant

My name Patrick Zingisa Msekelwa and I am doing research under the supervision of Gezani Baloyi, a Professor in the Department of Adult Basic Education and Youth Development towards a PhD in Education at the University of South Africa.

We have funding from UNISA Directorate student funding. The funds are for editing, photocopying, buying data for virtual meetings and workshops. We are inviting you to participate in the study entitled: **An investigation into the effectiveness of technology in a distance learning environment: A case study of the University of South Africa.**

The study is expected to collect information that could help the University to make an improvement in the use of technology

You are invited because you have an experience in e-learning you have an access in learning management system of the University of South Africa and you receive support from e-tutors.

I obtained your contact details from the Head of Adult Basic Education and Youth Department from the University of South Africa.

12 participants will be involved in this research.

Your role in this study will be answer interview questions based on the effectiveness of technology during the interview session

The study involves semi-structured interviews and audio recording of your responses.

Open ended interview questions will be asked. The interview questions are attached. An interview will take approximately sixty minutes

You can withdraw from the study even after you have agreed to participate. Participation in this study is voluntary

The study will benefit you and the university because it could contribute to a better and more comprehensive understanding of the effectiveness of technology in distance learning. The study is expected to contribute the value and input to the pool of already existing body of knowledge based on how effective technology is in the distance learning context. The study will be useful in both online lecturers, students studying online and researchers by providing a clearer view and deeper understanding on many issues related to the effective use of technologies to enhance the students' performance. The needs of the students studying in a distance learning and technology enabled environment will be known and improvements will be made.

If the risks are experienced during the research the researcher will try to minimise and mitigate such risks, deal with emanating risks accordingly and adhere to the policy.

You have the right to insist that your name will not be recorded anywhere and that no one, apart from the research team s will know about your involvement in this research. Your answers will be given code number or pseudonym and you will be referred in this way in the data, any publications or in other research reporting methods such as conference proceedings.

Your answers may be reviewed by people responsible for making sure that research is done properly, including the transcriber, external coder, and members of the research Ethic Review Committee. Otherwise records that identify you will be available only to people working in the study, unless you give permission for other people to see the records.

Your anonymous data may be used for other purposes such as journal articles and will be also submitted for publication, but individual participants will not be identifiable in such report.

Hard copies of your responses will be stored for the period of five years in a locked filling cabinet accessible only to researcher and will thereafter shredded. Electronic information will be stored in password protected computer and will be deleted after five years. The study has received written approval from the Research Ethics Committee of the University of South Africa.

If you would like to be informed of the final research findings, please contact Patrick Zingisa Msekelwa on 0724274836 or email zingisap@yahoo.com .

Should you require any further information or to contact the researcher about any aspect of this study, please contact Zingisa Patrick Msekelwa at 0724274834/ 0475481132. Fax number: o47548 1190

Should you have concerns about the way the research has been conducted, you may contact my supervisor: Professor G. P Baloyi: Tel: 012 484 1062 or email baloygp@unisa.ac.za.

Thank you for your time to read information sheet and for participating in this study.

Thank you

Patrick Zingisa Msekelwa

APPENDIX E: Consent/Assent to participate in this study (Return slip)

I, _____ (Participant name), confirm that person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet.

I have sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary, and I am free to withdraw at anytime without penalty.

I am aware that the findings will be processed into research report, journal publications and/or conference proceedings, but that my participation will be kept confidential otherwise specified.

I agree to the recording of the semi-structured interviews

I have received and signed copy of informed consent agreement.

Participant name & Surname (Please print) _____

Participant signature_____Date_____

Researcher Name & Surname__Patrick Zingisa Msekelwa__Date_____

Researcher signature_____  Date_____

Accept	Decline

APPENDIX F: Interview Questions

PARTICIPANTS' INTERVIEW GUIDE

RESEARCH TITLE: **An investigation of the effectiveness of Technology in Open Distance Learning: A case study of the University of South Africa.**

STUDENT: Patrick Zingisa Msekelwa

DEGREE: PhD (Education): Basic Adult Education and Youth Development

A. STUDENTS' EXPERIENCES IN USING TECHNOLOGY

1. Tell me about your experience in using technology.

2. What are your experiences of interacting with other students online?

3. What makes you think that technology will make your work easier?

4. What is your attitude towards the use of LMS?

5. How are the online tutors helpful in your studies?

B. THE ROLE OF E-LEARNING ONLINE PLATFORM IN SUPPORTING STUDENTS IN ODEL CONTEXT

1. How often do you log in in your computer?

2. How often do you interact with other students and your e-tutors?

3. What is your experiences of using myUnisa LMS?

4. In your view, how can we use technology to improve learning?

C. DEALING WITH EMERGING TECHNOLOGIES

1. Do you prefer to use computer or mobile phone to access learning materials? Please motivate.

2. What is your preferred mode of submitting an assignment and why?

3. Is there network coverage in your area?

4. What are your challenges in using technology?

5. What is your experience in using new technologies like Microsoft teams?

APPENDIX G: Participants' responses

SUMMARY

Participant 1

Question on experience on using technology

When i registered at Unisa i did not experience any problem because using Internet, typing is part of my job description and it is what i am doing on daily basis.

Experience of interacting with other students

'i benefit a lot on interacting with other students online. But sometimes you find that some students are misleading us and our module lecturer and e-tutors help us by clarifying certain topics in the study units. Other students are more helpful when we are preparing assignments and also when we are preparing for the final the final examinations.

Technology makes work easier

Technology make things easier because you do not have to use pen and paper when writing assignment, things were much easier when i was writing an online examinations hence i did not travel to the examination centre. No money was wasted when i an access in technology i just sit at home, write my assignments, upload them and post the answers without going to town".

Attitudes towards the use of LMS

Online platform like myUnisa makes things much easier. I do not have to wait for the study material to arrive in the post office or study centre which sometimes takes months. It is very simply, if you have sufficient data, you just log in in an LMS and download the study material included tutorial letter 101 and the study guides. There is no need to wait for the hard copies of examination pads and envelopes from the university. I simply type my assignment using computer and submit it online during the closing date. Without a doubt his attitude towards the use of LMS was

Online e-tutors are helpful

They help us to understand better the content in the study units, give us challenging activities and provide useful feedback, guide us on how to use the tools in an LMS like the discussion forum and tell us about benefits of virtual environment, give us useful tips on how to study, how to plan and structure the

units in the study guide, motivate us and assist with tips on how to organise work when doing assignments. ’In a nutshell, the first

Log in times in a platform

I log in daily so that i do not left behind for the new information posted by the e-tutors

Experience of using myUnisa

The learning platform myUnisa enables me to use the various tabs, for example to check my registration details, biographical information or if i want to add something like changing my address or contact details i just go to my admin, for online discussions, i use discussion forums and to download the study material i use my module site.

Technology improves learning

I think students need to log in daily so that they are not left behind in discussions either with online teacher or with other students. Maintaining consistency in the online discussion can improve learning and help students to obtain good marks.

Preferred type of technology to access the learning material

I use both computer and cellphone. I use computer from my workplace hence they allow us to do our school work during teatime, lunch time and after hours. My USB help me to store my work. Computers are more helpful when typing my assignments. I usually use cellphone to read the emails posted by my module lecturers

Preferred mode of submitting assignments

‘*i prefer online because I can even submit my assignment during the closing date. I have enough time to prepare for my assignment, there is no rush. I do not have to travel to town to post my assignment. Moreover, submitting assignment online was a saviour from Covid 19 hence i do not have to meet many people*

Network coverage

Sometimes i experience a poor network coverage in my location. I so wish that our university can do something to address this problem. Sometimes i have to travel to town to get connected during weekends when i am not at work. In town there is better Internet coverage.

More money and time is wasted while travelling to town

Challenges of using technologies

To use technology such as Internet, one needs data which is a big challenge. To connect, one needs a data which is very expensive as the majority of us are

unemployed hence there is scarcity of jobs in South Africa. I am blessed because there is Wi-Fi in my workplace.

Experience of using new technologies

I have an experience in using telegram. I use it when interacting with other students in group discussions. It gives more autonomy when rather than interacting with e-tutors where there are so many group rules and regulations. In telegram i have more freedom to ask questions from my group members without fear of language expression. Telegram is new technology and functions in a similar way as WhatsApp

Online platform versus face to face

I prefer an LMS because i can study and work at the same time, it is cheaper because you do not have to pay expensive university fees, and you do not have to pay for residence accommodation'

Participant 2

Question on experience on using technology

'*I did a computer course before i enrolled at Unisa. It is where i learnt variety of things ranging from on how to type, how to use an Internet as well as power point presentation. When i enrol at Unisa i did not experience any problem with regard to the use of technology*

Experience of interacting with other students

I do interact with other students in telegram. Telegram functions like WhatsApp I downloaded the link from Facebook and then i search for the group doing the same course as mine. I do benefit a lot from the telegram group since we share a lot of information in connection with our studies, although the group members are sometimes misleading. There are no strict rules

Technology makes work easier

It makes work easier because you can do your work in any place and in anytime.

Attitudes towards the use of LMS

Online platform, myUnisa help me a lot because it is where i download my assignments and study guides.

Announcements by our lecturers are also posted in myUnisa'

Online e-tutors are helpful

I heard about e-tutors from my telegram group but I never used such online support service. I am also aware that i was allocated to e-tutor group but the university but never interact with the group. I rely mainly in the group that i joined in the telegram

Log in times in a platform

I log in almost daily to check and read the announcements

Experience of using myUnisa

'In myUnisa, I usually use the tab called module site. It is where i download the assignment questions and study guides for the modules that i am doing

Technology improves learning

I think that students need to be disciplined. They should log in regularly to check the new information and announcements posted by the university lecturers.

Preferred type of technology to access the learning material

I use my own cellphone in most cases but sometimes borrow a laptop from my cousin when typing assignments since i do not have my own laptop'

Preferred mode of submitting assignments

'I submit my assignments online. Submitting my assignments online saves time. I think that if the assignments are posted, they will not reach the destination on time. Sometimes assignment might be lost. Online submission is safe because one get an automated reference after successful submission

Network coverage

Sometimes there is very poor network coverage more especially when there is load shedding

Challenges of using technologies

It is expensive, for one hundred megabytes cost twenty nine rand and last only twenty minutes. At the same time one needs data to connect. I wish the university can supply us with data throughout the year, not only during the online examinations

Experience of using new technologies

I am not familiar with new technologies like Microsoft teams but I usually make video calls using my cellphone with certain students in our group

Online platform versus face to face

Studying in distance education using LMS is much better because you can study anywhere. Early this year i managed to get to get a part-time job so i can study and work at the same.

Participant 3

Question on experience on using technology

I enjoy using my iPod when doing my assignments. I use a cam scanner to upload my assignments during the cut-off date. I start by preparing them in a Unisa examination pad and then upload them using a cam scanner. When she was further probed she

Experience of interacting with other students

Any group member is free to use mother tongue. The first group is on Instagram and the second one is a WhatsApp group. I got the link for the two groups on Facebook. In both groups there Unisa students doing higher certificate in abet.

i have two groups, one in telegram and a WhatsApp group

Technology makes work easier

It makes work easier because you can do your work in any place and in anytime. There is no need to travel and go to the regional centre to look for technology which is very far from my area.

Attitudes towards the use of LMS

I *enjoy using LMS because i am able to work on my own pace. I can do my work even at midnight*

Online e-tutors are helpful

I rarely interact with them as i stated earlier that i am having a language barrier.

Log in times in a platform

I log in almost daily

Experience of using myUnisa

I am able to use the module site to check and download tutorial letter 101 and 201. I used announcement tab to check the messages and updates sent by our lecturers.

Technology improves learning

I think that to log on daily basis can help the students to improve their marks and increase their success rate.

Preferred type of technology to access the learning material

I use mobile phone but prefer to use hard copies and i usually collect them either from the post office or regional centre although i travel long distance because it is far

Preferred mode of submitting assignments

Online submission it is affordable

Network coverage

There are some challenges more especially when we are experiencing a bad weather.

Challenges of using technologies

Technical challenges in myUnisa when you try to connect you sometimes receive a massage stating that myUnisa is not responding. Secondly, no one is employed at home so i am struggling to buy data

Experience of using new technologies

I am not familiar with new technologies like Microsoft teams but i usually make video calls using my cellphone with certain students in our group''

Online platform versus face to face

I prefer to study online because i did not get space from the other universities

Participant 4

Question on experience on using technology

In most cases i use my cellphone. For an example, i use my cellphone to login and check new announcements, i download tutorial material using my cellphone. When i have an assignment, I write an assignment in an examination pad and use the cam scanner to upload it in myUnisa portal.

Experience of interacting with other students

With the group members we share an information pertaining our studies and members of the group also give clarity in topics that we do not understand. I never engaged with other students in Unisa online discussion forum but i am used to read contributions of the e-tutors and students

Technology makes work easier

'*It makes my work easier. I is affordable, for instance, if i want to submit my assignment, i just stay at home and submit it online*

Attitudes towards the use of LMS

I like the LMS because there is no need to go to the university full time. You just study at home with your own pace. Moreover, study online is cheaper, there is no need to pay additional hostel fees. I also enjoy social media LMSs like WhatsApp and telegram

Online e-tutors are helpful

I am not familiar with e-tutors.

Log in times in a platform

I log in daily using my own cellphone

Experience of using myUnisa

I use myUnisa portal to download the study guides and tutorial 101 with assignment questions.

Technology improves learning

We need some training by the officials from the regional centres on how to use technology effectively and efficiently

Preferred type of technology to access the learning material

I *prefer to use my mobile phone because it is portable, i can carry it in any place and i can log in any time i want*

Preferred mode of submitting assignments

I prefer to submit my assignments online. I can even submit my assignment in the eleventh hour during the closing date"

Network coverage

There is poor network coverage in my area. It is located in deep rural place and far from town where the network coverage is not a challenge. When searching for the network i have to go to the nearest hill

Challenges of using technologies

'*Technical challenges in myUnisa when you try to connect you sometimes receive a massage stating that myUnisa is not responding. Secondly, no one is employed at home so i am struggling to buy data and a laptop*

Experience of using new technologies

I have no knowledge on how to use the new technologies. I think our regional offices will organise workshop one day and demonstrate on how to use the new technologies

Online versus face to face

I prefer to study online because money is saves, more money is needed when you are studying fulltime

Participant 5

Question on experience on using technology

I use cellphone for my studies at Unisa. It is not my cellphone. We share it together with family members. My parents are poor and cannot afford to buy my own cellphone and laptop for my studies. I write my assignments in the exam pad and use the cam scanner to upload them before submitting then in myUnisa online portal

Experience of interacting with other students

I like the activities posted in the discussion forum by the e-tutors. I usually answer them and check the feedback of the e-tutors to see whether

Technology makes work easier

Technology makes things easier because there is no need to wait for the study material which usually takes a long duration to reach our destinations. My university is in my cellphone. I simple download what i need without waiting money travelling to town to look for the Internet café

Attitudes towards the use of LMS

Technology is good. It is much cheaper to study online course. This is much helpful hence our parents are not working to pay for the full time courses in a full time university. The LMS myUnisa helps me to chat with other students and check the assignment results

Online e-tutors are helpful

I benefit a lot from the e-tutors. They post useful summaries of the various study units. They provide more assistance when i am completing my assignment and

preparing for the final examinations. When she was probed further, she said, ’*recently with the help provided by e-tutors i got good assignment marks”.*

Log in times in a platform

At least three times a week since I share mobile phone with family members

Experience of using myUnisa

I use myUnisa portal to check announcements from our lecturers, to download tutorial letters, to check the administrative things including my examination centre, to update my address and contact details and r 6 said on being probed *‘i do have an experience in using various tabs of myUnisa including the tab for engaging in discussion forums and the tab for downloading the study material*

Technology improves learning

Students should interact with their e-tutors and other students in their respective online groups more often in order to obtain good marks

Preferred type of technology to access the learning material

i use mobile phone. I do not have a laptop or desktop computer’

Preferred mode of submitting assignments

I prefer online because it does not cost much

Network coverage

There is no problem of network coverage because my location is situated around the town where there is a network pole

Challenges of using technologies

Data is expensive. I cannot afford to buy my own laptop. I cannot to buy my own cellphone. Regional centre to access technology is far from my place.

Experience of using new technologies

I am able to do video calls with other members of the group using a mobile phone. I am keen to learn how to use new technologies like Microsoft teams and zoom and hoping that our university with train me one day.

Online platform versus face to face

When doing your studies online you can study in your own pace, it is the best method.

Participant 6

Question on experience on using technology

Our regional centre give us a lot of support when it comes to technology.

Experience of interacting with other students

'I do interact with other students in an LMS in myUnisa but contribute very little because typing information in a cellphone is time consuming. But when i visited the regional centre i make sure that i contribute a lot because there is a Wi-Fi there so Internet is free.

Technology makes work easier

Technology makes work easier because there is no need to go to the municipal library to search for the information when one is preparing for assignment. I just go to Google scholar and search the information that i need." the study participant seemed to view

Attitudes towards the use of LMS

Online platform is good because it saves our money. I use WhatsApp as a social media platform to communicate with other

Online e-tutors are helpful

E-tutors are very helpful in supporting students studying online. E-tutors give the students studying online tips on how to study, they also help us to plan our work strategically, guide us when we are preparing for our assignments, solve our problems".

Log in times in a platform

I log in using my mobile phone at least four times a week

Experience of using myUnisa

I do have an experience in using various tabs of myUnisa including the tab for engaging in discussion forums and the tab for downloading the study material

Technology improves learning

I think that students need to log in daily, use discussion forums continuously in order to familiarise themselves with the learning content. This will help us to be better equipped and obtain good marks in our modules.

Preferred type of technology to access the learning material

I use mobile phone. I do not have a laptop or desktop computer'

Preferred mode of submitting assignments

Online method is the best method because there is no need to travel to town or go to pep stores to post the assignment. It saves time though i sometimes experience network problems.

Network coverage

Network is sometimes a problem, more especially when there i a load shedding

Challenges of using technologies

I do not have laptop so if i need laptop I have to go to the regional centre, data is very expensive, and the university should supply us with data throughout the year.

Experience of using new technologies

I have no idea on how to use emerging technologies

Online platform versus face to face

Online is the better method because other universities take few students

Participant 7

Question on experience on using technology

I usually use the hard copies and usually post my work. I need some training on how to use these technologies.

Experience of interacting with other students

I do not have any group, i used to study on my own

Technology makes work easier

I cannot say that technology makes things easier.

I prefer to go to library in the regional office if i want references for my assignments.

Attitudes towards the use of LMS

I just need to have the data for connection purposes. Data is one of the problems which prohibit the

Online e-tutors are helpful

I do not have a knowledge of e-tutor hence i never use it before

Log in times in a platform

I rarely log in daily in an online device as I prefer to use my hard copies

Experience of using myUnisa

I do not have an experience in using various tabs in myUnisa and need to be trained on how to use this LMS. I usually collect the study material from the post office. The study package consists of tutorial letter 101 for the assignments and stationery including envelopes, writing pad and computer reading sheets for multiple choice questions.

Technology improves learning

I don't think that LMSs can improve learning .although i am not the user of LMSs, i think, learning about various aspects of technology and practicing what you have learnt is still new to us.

Preferred type of technology to access the learning material

I *use the print media to access my study material. I usually collect the study material from my regional study centre".*

Preferred mode of submitting assignments

'*I make sure that i post my assignments because i prepare them using the assignment pads and computer reading sheets. I use the assignment covers before enclosing my assignments in Unisa envelopes*

Network coverage

Whether the network is available or not does not bother me as i am not used in this technology thing

Challenges of using technologies

The data is not affordable almost in all the network giants. It is one of the reasons i decided to work offline by using only the material supplied by the university

Experience of using new technologies

I do not have an idea about the new technologies such as Microsoft teams.

Online platform versus face to face

Face to face would much better hence i have less experience of using technological devices

Participant 8

Question on experience on using technology

I use my cellphone to communicate and search information from Google scholar. I am also able to participate in virtual meetings at work through Microsoft teams and the app was downloaded from my mobile phone.

I usually *to interact with other group members in myUnisa discussion programme and to participate in virtual meetings in my workplace*

Experience of interacting with other students

We share the ideas with others during the online discussions

Technology makes work easier

Technology makes the work easier because you can do your studies anywhere using your mobile phone. It does not matter whether you are travelling with a taxi, a bus.

Attitudes towards the use of LMS

E-tutors post their lessons in the LMSs on different aspects of each study unit. E-tutors encourage all students to contribute in discussion forums. E-tutors also help us to liaise with the module lecturer if there are things that students do not understand. I use LMS myUnisa because there are so many things posted there including: summaries of the study units, feedback by e-tutors and announcements, calendar pertaining examinations dates, assignments due dates.

Online e-tutors are helpful

E-tutors are very helpful. Their lessons are very structured and help us to understand the learning content better. E-tutors also provide the students with study tips

Log in times in a platform

As a working person I log in at least three times a week to ensure that i am not left behind in discussions and also in studying the useful activities posted in the discussion forum by the e-tutors"

Experience of using myUnisa

I log in three times in myUnisa LMS to check new announcements, to download the study material whereas *discussion forum tab enable to participate in virtual discussions with other students and their e-tutors.*

Technology improves learning

I think that effective use of technology can improve student's communication skills, their language will improve as the result of continuous engagement with other students.

Preferred type of technology to access the learning material

I use both laptop and mobile phone depending to the place where i am at that particular moment. For example at home i use laptop to do my university work whereas at work during lunch time, i use cellphone because it is portable.

Preferred mode of submitting assignments

I prefer to submit my assignments online through myUnisa portal. I think that it is the safest method of submitting work

Network coverage

There is a good network coverage in my area

Challenges of using technologies

The main challenge is data, it is expensive. Even the municipal libraries do not supply us with free data. For example, to get an Internet service one is required to pay.

Experience of using new technologies

I am familiar with Microsoft teams because during the hard lockdown in our work we used to hold meetings through Microsoft teams. The app was downloaded from mobile phone.

Online platform versus face to face

Nowadays everybody uses technology so study online is the better way to keep with the pace and changes that are taking place globally"

Participant 9

Question on experience on using technology

I often use laptop for my studies. I use laptop to write assignments and also to send emails laptop was supplied the university to the regional office and i collected it from there.

Experience of interacting with other students

I enjoy to participate on discussion forums because i share their experiences with them

Technology makes work easier

It makes things easier because i can do studies while staying at home.

Attitudes towards the use of LMS

I like LMS because I can download soft copies of study material without waiting hard copies from the university.'

Online e-tutors are helpful

E-tutors are sometimes helpful but they are very strict in an LMS that is why i more comfortable in WhatsApp group where there is more freedom.

Log in times in a platform

I log in twice a week to make sure that i am not left behind to the activities and lessons posted by the online teachers.

Experience of using myUnisa

I use myUnisa to download the study material

Technology improves learning

To use technology effectively for learning i need some training which i think can be offered by the officials in a regional office

Preferred type of technology to access the learning material

I use both laptop and mobile phone depending to the place where i am at that particular moment.

Preferred mode of submitting assignments

Online submission because it is safe. It saves money. Submission is done whilst sitting at home.

Network coverage

I reside around the city therefore i do not experience network coverage

Challenges of using technologies

Data is the problem because it costs and i cannot afford to buy it because i am currently not employed. I have to beg money for the data from my parents

Experience of using new technologies

I do not have an experience of using the new technologies.

Online platform versus face to face

Online platform is better

Participant 10

Question on experience on using technology

I am able to use both mobile phone and laptop to participate in discussion forums. I bought my laptop from funds deposited by NSFAS.

Experience of interacting with other students

Besides interacting with other students in an online discussion forum, myUnisa, i also make contributions in the discussions which takes place in the telegram group. Study groups are also helpful as they assist me to understand the work better,

Technology makes work easier

Technology makes my work easier because I can manage to do studies in any time

Attitudes towards the use of LMS

Online platform is good for us, especially those who come from disadvantaged societies. Everyone can afford and receive university qualifications because it is much cheaper than studying full time

Online e-tutors are helpful

E-tutors are helpful hence they always keep us up to date with new information and help us to tackle our studies better and also to understand better the learning content

Log in times in a platform

i log in four times a week in both laptop and mobile phone. I download study guides from the laptop.

Experience of using myUnisa

I do have experience hence i know on how to use the various tabs

Technology improves learning

'All students using LMS for learning must always log in and try to use various tabs in the LMS. This will help them to familiarise themselves with myUnisa portal

Preferred type of technology to access the learning material

i use both computer and mobile phone. Mobile phone is portable. Other added advantage of the mobile phone is that it saves data

Preferred mode of submitting assignments

I prefer to submit assignments using the online portal. It is the fastest way of submitting work. Another additional advantage is that you can submit your work anytime during the cut-off date

Network coverage

All the networks are available in my area

Challenges of using technologies

Data is very expensive. I usually ask money of buying the data from parents".

Experience of using new technologies

i am able to make the video calls to discuss difficult topics with members of the telegram group

Online platform versus face to face

It is better to study online because you can study in your own pace and in your own time.

Participant 11

Question on experience on using technology

I use my mobile phone to do my assignment. I am able to use the scanner in my phone and this help me to submit my work to the university during the assignment deadlines.

Experience of interacting with other students

I enjoy to exchange ideas with other students, and participant

Technology makes work easier

It makes the work easier because after writing your work you can save it in the computer without printing it. There is also Google scholar which helps me to download readings when i prepare for assignments and examinations.

Attitudes towards the use of LMS

I *like it and i use LMS daily for my studies. I also use social media platforms such as telegram to participate in the virtual discussions.*

Online e-tutors are helpful

E-tutors support the students in LMS by summarising the study units, making the work easier

Log in times in a platform

I log in on daily basis

Experience of using myUnisa

I use myUnisa daily to interact with other students, to interact with online lecturers and to read announcements posted by the e-tutors and the module lecturers.

Technology improves learning

I would like to encourage other members of the group to use technology daily because it is changing all the times.

Preferred type of technology to access the learning material

I use my own laptop to access the study material. You do not have to wait for a long time, immediately after registration is finalized the study material is loaded in the module site. Rather than waiting for ages for the material to arrive in the regional support centre, i just download my study guides and tutorial letters from my own laptop at home

Preferred mode of submitting assignments

The preferred method is online mode because it is safe, fast and more convenient. After uploading and posting your work, you receive a reference as a proof immediately.

Network coverage

There is no problem of a network in my place

Challenges of using technologies

The main problem is data and also technical problems which are sometimes experienced in an LMS when you log in, sometimes it becomes difficult to save your work, your hard work just disappears"

Experience of using new technologies

I do not have an experience and the university should organise a workshop to show us on how to use the new technologies.

Online platform versus face to face

I prefer to study online

Participant 12

Question on experience on using technology

I am able to use both cellphone and a computer in my studies

Experience of interacting with other students

Interacting with other students and making contribution in discussions is crucial in the learning process because through interaction with other students, i share ideas and more clarity is given to the topics that i do not understand.

Technology makes work easier

Technology makes things easy because I manage to do my work at home without going to the university. I also manage to communicate with other students, send emails to my module lecturers.

Attitudes towards the use of LMS

Online platform is my great saviour because i can manage to do my studies at home. There is no need to study full time in the university and pay high fees. My university is at home.

Online e-tutors are helpful

E-tutors are helpful in our studies because they prepare lessons for us. E-tutors summarise study units and help us on how to tackle various assessment tasks.

Log in times in a platform

I log in daily to interact with group members and e-tutors.

Experience of using myUnisa

I use myUnisa for various purposes. The LMS is used to communicate with other students, in discussions, to check the announcements, to make enquiries.

Technology improves learning

"*By practicing and making sure that you log in daily to learn new things".*

Preferred type of technology to access the learning material

I use both computer and mobile phone. Computer is used at home and a cellphone is used during lunch time at work to check for announcements.

Preferred mode of submitting assignments

I prefer to submit my assignments online because it is the safest method. Submitting assignments online saves money.

Network coverage

Coverage is good in my location

Challenges of using technologies

Sometimes there are technical challenges in myUnisa during the submission days, you will find that the system fails when i interact with e-tutors and other members of the group.

Experience of using new technologies

I do have an experience in using the new technologies because virtual meetings in workplace are held with the aid of Microsoft teams."

Online platform versus face to face

Studying online is the best option

APPENDIX H: Editing Certificate

EDITING AND PROOFREADING CERTIFICATE

22 Oshe Street

The Reeds, Centurion

Pretoria

05 April 2023

TO WHOM IT MAY CONCERN

This certificate serves to confirm that I have language edited PZ Msekelwa's thesis entitled, **"AN INVESTIGATION OF THE EFFECTIVENESS OF TECHNOLOGY IN OPEN DISTANCE LEARNING: A CASE STUDY OF THE UNIVERSITY OF SOUTH AFRICA."**

I found the work easy and intriguing to read. Much of my editing basically dealt with obstructionist technical aspects of language, which could have otherwise compromised smooth reading as well as the sense of the information being conveyed. I hope that the work will be found to be of an acceptable standard. I am a member of Professional Editors' Guild.

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Professional EDITORS' Guild

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