EXPERIENCES OF VIDEOCONFERENCE TUTORS IN INSTRUCTIONAL METHODOLOGIES APPLICATION

By

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DECLARATION

I declare that: **EXPERIENCES OF VIDEOCONFERENCE TUTORS IN INSTRUCTIONAL METHODOLOGIES APPLICATION** is my own work and has not been previously submitted in any form whatsoever, by myself or anyone else, to this University or to any other educational institution for any degree or examination purposes. All the sources used or quoted in this dissertation have been indicated and duly acknowledged by means of complete references.

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ALBERT TSHAMANO NEMATANDANI

DATE:_____

DEDICATION

This work is dedicated to my late father, **Mr Maungedzo Elias Nematandani**.

You have planted a seed!

It has germinated!

It has grown into a fruit tree!

Today we are celebrating the fruits!

May your soul rest in peace!

ACKNOWLEDGEMENTS

ABSTRACT

Information and communication technology (ICT) has dominated our lives and the way we learn in such a way that, without it, our way of life becomes obsolete. This study explored challenges experienced by tutors in facilitating teaching and learning through the use of videoconference (VC) technology in an open and distance learning (ODL) environment. These challenges are exacerbated by the fact that most tutors, although highly qualified, do not have teaching methodologies with their qualifications at the time of their employment as tutors. It is believed that if these challenges could be given attention, VC technology would serve as an effective facilitation tool for bridging the distance in teaching and learning. Based on qualitative research approach, this study followed a qualitative phenomenological research design. Qualitative data was collected from individual semi-structured interviews with specific VC tutors; tutorial observations based on tutorials offered in the VC environment; and focus group interviews with students who attended tutorials through VC technology. Informed by the Community of inquiry (CoI) theory, the study answered the following main research question: "*What are the experiences of tutors in applying instructional methodologies during VC tutorials*?"

The findings indicate lack of skills and reluctance in applying various active facilitation methods by VC tutors, insufficient technology training intervention by the ODL institution under study, technical challenges of VC technology in teaching and learning, and lack of monitoring systems during VC discussions. The findings further featured various factors that contribute to tutors' ability in promoting interactivity during VC tutorials.

In conclusion, this study clearly indicates that instructional methodologies used in VC tutorials cannot contribute to a meaningful teaching and learning, and thus make interactivity absent throughout VC sessions. Based on these findings, and suggestions for further research, the study therefore recommends acceleration in tutor training on exploitation and integration of VC technology with various suitable teaching methodologies.

Key Words: videoconference, tutor, tutorials, teaching and learning styles, instructional methodologies, interactivity.

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LIST OF ACRONYMS AND ABBREVIATIONS

ARI	Aquatic Research Initiative
AVU	African Virtual University
CoI	Community of Inquiry
DE	Distance Education
DISS	Directorate: Instructional Support Services
DoHET	Department of Higher Education and Training
ETV	Educational Television
HEI	Higher Education Institution
ICT	Information Communications Technology
IP	Internet Protocol
ISDN	Integrated Digital Services Network
ODeL	Open and Distance e-Learning
ODL	Open and Distance Learning
RAC	Regional Academic Coordinator
RSC	Regional Service Centre
SANC	South African Nursing Council
SLC	Satellite Learning Centre
TDW	Tutor Development Workshop
TWIV	Two-Way Interactive Video
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNISA	University of South Africa
UWINDSOR	University of Windsor
VC	Videoconference
VCR	Video Cassette Recording

VCS	Videoconference Student
VCT	Videoconference Tutor
VLC	Videoconference Learning Centre

CHAPTER 1
STUDY ORIENTATION

1.1.   INTRODUCTION AND BACKGROUND

Everyone needs some kind of education and technology for survival, yet very little or no time is available for everyone to obtain this education on a fulltime contact at higher educational institutions (HEI). The decline in government funding of higher education, along with rising costs of different services that universities have to offer, have recently led to more students unable to access tertiary education, especially fulltime university education (Makoni 2014:1). At times, the availability of space at these fulltime institutions of higher learning may be a hindrance.

Because of this need, distance education and technology are indispensable to most if not all individuals. Greenberg (2004:6) argues that when distance education began in the 1800s, it would have been impossible to imagine the manner in which the two concepts distance education, and information and communication technology (ICT) tools would become necessary and evolve for maximum learning empowerment.

Technology has dominated our lives and the way we learn in such a way that, without it, our way of life becomes obsolete. This notion is echoed by Aduwa-Ogiegbaen and Iyamu (2005:107), when they contend that there is a strong need to know and use modern technology in our economy, business, social life and education for survival.

Nowadays, educational systems need the aid of technology for pedagogical and performance reasons, and this cannot be overlooked. To support this view, Fouts (2000:15) in his research found that students in the higher technology-learning environment are likely to perform well compared to students learning in a classroom where technology is less applied. Further than that, his research showed that there is a general belief among technology advocates that the classrooms facilitated by the use of technology can produce positive learning outcomes (Fouts, 2000:16).

In substantiation of Fouts (2000) research, Taylor and Parson (2011:15) further conclude that, the more teachers' use technology in the classroom, the more students are; motivated to learn, able to apply their knowledge to practical problems, and are able to take ownership of their learning. Further than that, many research studies have shown that there can be a direct, positive influence on student achievement when technology is used in a teaching and learning environment (Tamim, Bernard, Borokhovski, Abrami, & Schmid, 2011). This could possibly lead to more positive attitudes for learning, as well as lower dropout rates. This chapter presents study context in the following section.

1.2.   STUDY CONTEXT

In this study, challenges experienced by University of South Africa (UNISA) tutors in applying instructional methodologies were explored. One of the reasons for this exploration was to encourage interactivity during videoconference tutorials. In South Africa, (UNISA) has developed a conceptual framework for technology-enhanced support to its students, taking into account podcasting, satellite broadcasting and videoconferencing (VC) (UNISA, 2010:4). The University is making use of videoconference technology for the purpose of discussion classes, meetings and tutorials.

UNISA introduced videoconference technology in 1990 as a way of bridging the time, geographical, economic, social, educational and communication distance between students and the institution, students and academics, students and courseware and students and peers (UNISA, 2010:4). This means that teaching and learning may take place despite a distance between the tutor and a student (UNISA, 2010:3). When effectively monitored and well-coordinated, videoconference technology can potentially extend the "reach" of education beyond the physical teaching and learning environment (Haupt, 2010:2).

Besides UNISA, there are few Universities in South Africa that utilise VC technology as an academic delivery tool. They are Tshwane University of Technology (TUT), which uses videoconference to link up all its nine campuses and connect students with experts in other universities such as the University of Belgium, the University of Cape Town (UCT), which has conducted workshops through videoconference in six Western Cape schools and three schools in the United Kingdom (UK), in

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collaboration with Telkom Foundation Exploratorium (www.pnc.gov.za), and the University of KwaZulu-Natal (UKZN), which has been making use of VC technology to teach nurses in nursing management around KwaZulu-Natal (Mclnerney & Nkosi, 2007:162). University of Pretoria and Stellenbosch also have videoconference facilities that are rarely used for tutorials.

The above universities are residential institutions and only use VC technology on a limited scale, mainly for interviews, exchange programmes, meetings, educational pilot projects and international conference linkages (www.pnc.gov.za).It appears that only UNISA is a dedicated distance learning institution in South Africa that uses videoconference technology extensively for tutorials.

Given this background, the present study focuses on UNISA, which is presently the only dedicated ODL institution in South Africa, although the study reviewed literature on other Open and Distance Learning (ODL) institutions from an international perspective.

1.3. PROBLEM STATEMENT AND RATIONALE

I have been working as a Regional Academic Coordinator (RAC) at UNISA's Gauteng Region for more than five years now. Managing connections of the videoconference equipment in the VC venue, coordinating, monitoring of the video connections and transmissions are some of my tasks. Fouché and De Vos (2005:92) point out that most research problems arise from a concrete problem observed in reality. As a result, while managing these tasks relating to videoconference tutorials, I learned that tutors seem to be hesitant to encourage interactivity among students when offering tutorials.

Furthermore, it appears that despite the fact that UNISA attracts highly qualified tutors in various disciplines, many of them do not possess teaching methods with their qualifications. For example, a tutor with law qualifications might struggle to apply facilitation techniques when offering tutorials without teaching methodologies expertise on the law subject. This seems to be the reason for their tendency to give lecture instead of applying effective facilitation skills in their tutorial offerings.

On an annual basis, these tutors receive generic tutor development workshop, however, their incapability to apply various instructional methodologies in the videoconference classroom still remains a problem, hence this study. Based on this thought, the main research question of this study emerged as indicated in the following section.

1.4. RESEARCH QUESTION

- What are the experiences of tutors in applying instructional methodologies during videoconference tutorials?

To answer the main question of this study, a number of sub-questions were asked. The sub-questions were:

- What are instructional methodologies pertinent to videoconferencing tutorials?

- What are factors affecting tutors' ability to encourage students engaged and participate in a productive dialogue during VC tutorials?

- What is the nature of social interaction between students and tutors and between students and peers?

- What challenges tutors when monitoring content-based activities through VC?

1.5. AIM AND OBJECTIVES OF THE STUDY

The main aim of this study was to explore the challenges that are experienced by UNISA tutors in applying instructional methodologies as a way of promoting interactivity during videoconference tutorials.

The following are the objectives of the study:

- To identify instructional methodologies pertinent to videoconferencing tutorials.

- To identify factors affecting tutors' ability to keep students engaged and to participate in a productive dialogue during VC tutorials.

- To examine the nature of social interaction between tutors and students and between students and peers.

- To identify challenges experienced by tutors when monitoring content-based activities through VC.

1.6.   SIGNIFICANCE OF THE STUDY

UNISA and the following stakeholders may benefit from the study in the following manner:

Benefit to the Department of Higher Education and Training (DoHET):

Due to the quality of tutorials offered at UNISA through the videoconferencing system, more students are likely to make inquiries to participate in tutorial sessions and this might enhance the likelihood of student attendance, retention and throughput, which is one of the DoHET objectives.

Benefit to UNISA:

As an institution, UNISA might benefit from this study because the institution is likely to generate quality tutors through its revised and improved tutor training programmes. This study will bring new insights into tutor training programmes. It is also likely that UNISA students in future could learn from this study how to interact with one another or with their tutors through videoconference tutorial sessions or with the content. This might encourage independent and critical thinking, and as a result, high pass rates might be achieved.

Benefit to the other distance education providers:

Other distance education institutions that do not use videoconference technology in their tutorials may be motivated to introduce videoconference tutorials for their students and to work towards becoming pure ODL oriented institutions.

1.7.   SYNOPSIS OF RESEARCH METHOD AND DESIGN

This section provides an outline of the way the study was carried out.

1.7.1.   Research method

I followed a qualitative approach in this study. This approach is explained fully in Chapter 3 of this study. I chose this approach as it is concerned with understanding

participants' beliefs, attitudes, fears and knowledge (Haupt, 2010:13), and seeks out the "why" and not the "how" of its topic through the analysis of unstructured information (Zhou 2009:35).

Qualitative research in this study was used to explore the experience of VC tutors in applying instructional methodologies as a way of promoting interactivity during videoconference tutorials.

In order to answer the main research question as highlighted in section 1.3.1 above, this research study was descriptive and explorative in nature. According to Merriam (1998:6), the product of qualitative study is richly descriptive. These descriptions are derived from participants' responses through interviews.

1.7.2. Research design

Research design refers to a plan or blueprint of how one intends to conduct the research (Mouton, 2001:55). Durrheim (2006:29) adds that a research design is a strategic framework for action that serves as a bridge between research questions and execution or implementation of the research.

To validate the description in this study, I adopted a phenomenological research design, as Giles (2009:2) contends that qualitative research seeks a thick description of the story from the participants. According to Lester (1999:1), phenomenological methods are particularly effective at bringing to the fore the experiences and perceptions of individuals from their own perspective. The choice of this research design was informed by the research objectives as stated in section 1.4 above.

1.7.2.1. Population and sampling

A study population is defined in terms of demography, geography, occupation, time care requirements, diagnosis or some combination of the above. According to Babbie and Mouton (2001:174), population is the aggregation of elements from which the sample is actually selected. In the context of this study, a target population was the videoconference tutors who offer tutorials to distance education students in selected UNISA regional centres with videoconference facilities, and UNISA students who attend such tutorials.

Burger and Silima (2006:658) define sampling as the selection of a small portion of the total set of cases, events or objects that together comprise the subject of the study. Cresswell (1994:148) remarks that the idea of qualitative research is to purposefully select participants who will best answer the research question/s.

On the same note, Oppong (2013:207) points out that the qualitative researcher usually works with small samples and spontaneous events. This sample is a small proportion of a population selected for observation and analysis to enable detailed understanding of the problem.

Accordingly, purposeful sampling was used in this study. According to McMillan and Schumacher (2001:401), in purposeful sampling the researcher searches for 'information-rich' key informants, groups, places, or events to study. In other words, I chose these samples because they were likely to be knowledgeable and informative about the phenomena I was investigating.

When considering sample size, phenomenologists often rely on small sample sizes consisting of ten or fewer informants (Polit & Beck, 2004:67). Therefore, a group of eight videoconference tutors were identified and four UNISA regional learning centres were selected. In each of the four learning centres, six to eight students were selected for focus group interviews. This sample was selected in order to obtain diverse views and/or opinions on the subject of distance education and videoconference tutorials as connected through various UNISA regional learning centres.

1.7.2.2. Data collection techniques

According to De Vos, Strydom, Fouché, Poggenpoel and Schurink (1998:100), data collection is a detailed description of the data-gathering procedures for the planned investigation. This description covers the specific techniques employed. Data collection in this study consisted of the following three techniques to determine and understand participants' perspectives, perceptions and understanding of the phenomenon under study (De Vos, Strydom, Fouché & Delport, 2004:273): individual semi-structured interviews, tutorial observations, and focus group interviews.

1.7.2.3. Data analysis

The data was analysed thematically, guided by the following Huberman and Miles (cf De Vos *et al.,* 1998:340) approaches:

• **Data reduction**–As guided by the research question in this study, I reduced and organised the interview transcripts, field notes and observations by coding, writing summaries and discarding irrelevant data.

• **Data display**–I drew conclusions from the mass of data, as Huberman and Miles (1994:11) suggest that a good display of data is essential. This is a continuous process, rather than just one to be carried out at the end of the data collection.

• **Conclusion drawing and verification**–In this approach my analysis allowed me to begin to develop conclusions regarding the study. These initial conclusions were then verified, that is, their validity examined through reference to my existing field notes or further data collection. All these approaches are fully explained and discussed in Chapter 4. The following section focuses on the literature review that I conducted in order to determine how other researchers formulated lines of inquiry in relation to this study.

1.8. REVIEW OF LITERATURE

The literature review is an important means of acquiring background knowledge relevant to the research topic, of determining what research has already been done, and of exposing research possibilities that have been left out (Mafa, 2003:15).

Finding out how other researchers have formulated lines of inquiry within a broad field of study (delimiting the problem) is one of the reasons for reviewing literature, according to Gall, Borg and Gall (1996:114). For this reason, the relevant documents, books, internet sources, theses and journal articles on videoconference tutorials, distance education students, ODL and instructional methodologies application were consulted.

Four articles have been published on videoconferencing tutorials in South Africa thus far. The first published article is a study titled 'Social communication networks and videoconferencing: Strategic management decisions in new organisational forms –

the case study of Tertiary Education Linkages Project (TELP),' authored by Saunderson and De Wet (2005) (see Table 1.1).

The second article is a pilot study titled 'Using videoconferencing to teach Nursing Management' based on a study conducted in KwaZulu-Natal by McInerney and Nkosi (2007). This study focused mainly on nurses' perception of benefits and preferences for videoconferencing (McInerney & Nkosi, 2007:163) (see Table 1.1).

The third study is an article authored by Chipps (2010) entitled 'The use of synchronous videoconferencing teaching to increase access to specialist nurse education in rural KwaZulu-Natal, South Africa'.

The fourth article is an unpublished conference presentation paper on 'Videoconferencing at UNISA: Synchronous real-time discussions for student support' presented by Hentie Wilson (2004). In this paper, Wilson (2004:12) is of the opinion that the effective use of modern videoconferencing strategies depends on presentation expertise of tutors. The paper does not indicate how tutors can interact with their students and thereby create collaboration and engagement in the teaching and learning environment.

A large section of this study is based on a review of related literature. References were obtained by searching relevant indexing and abstracting services. Below is a summary of studies conducted in the area of videoconference teaching and learning in South Africa (see Table 1.1).

Table 1.1: Summary of studies conducted on instructional methodologies and videoconferencing in South Africa

Author	Problem statement	Main findings	Main Recommendations
Chipps (2010)	Lack of technical skills and support on using videoconference technology in teaching nursing students in the rural areas. Lack of capacity in training tutors at remote sites to manage the videoconference linking process.	The findings of this study support that videoconferencing is an appropriate and cost effective way to offer education. In the light of the potential savings of time and money, VC can be used to teach specialist nursing courses to rural nurses.	Tutors need to be oriented on using PowerPoint slides when facilitating tutorials.
McInerney and Nkosi (2007)	Lack of access to tutorials by nurses who need to further their studies in the field of nursing.	The findings in this literature revealed that nurses in the rural areas could not access nursing education because educators are reluctant to travel to the rural areas for nursing tutorials.	The use of videoconferencing in teaching should be accelerated and attention should be given to developing the infrastructure, tutor skills, specific consideration for clinical skill teaching and supporting further research to make videoconference technology not only available, but commonly used in under-resourced areas.
Saunderson and De Wet (2005)	Many organisations use the strategic advantages of videoconferencing and other new	The findings revealed that videoconferencing facilitates organisational communication networks on the precondition that	VC should not only take into account the numerous applications of videoconferencing,

Author	Problem statement	Main findings	Main Recommendations
	communication technologies to link themselves to "a digital nervous system" of communication and information flow in the organisation, which leads to new organisational forms and accompanying management challenges (Saunderson & De Wet, 2005).	communication networks and the environment are well managed. Moreover, the nature of social networks reveals that videoconference will always be in existence where human interaction is present. However, communication management strategies are indeed required to ensure that the quality of information disseminated over the social network contributes to sound managerial outcomes. It was furthermore established that communication management policies do not necessarily affect individuals' experiences of videoconferencing. However, as a communication management tool, videoconferencing must be guided by effective communication management policies and practices for the group to be effective.	but also consider all the implications for management. Saunderson and De Wet (2005) further recommend that there is a need for a strong, clear management policy on videoconference technology utilization.
Wilson (2004)	Videoconference technology is currently not integrated with university teaching	Tutors do not have presentation expertise for offering tutorials through videoconference technology.	Videoconference technology needs to be integrated into the university teaching and distance

Author	Problem statement	Main findings	Main Recommendations
	and learning, and this poses a challenge for student support at the institutions of higher learning.		education technology support model, which is one of the aspects that the current study explored further.

In all of the above studies, no mention has been made about how tutors experience the use of instructional methods during videoconferencing tutorials, and how they can enhance interactivity when facilitating learning during tutorials to bring about desirable learning. While these researchers have to be commended for their efforts, one cannot help noticing the glaring gaps prevalent in all of these studies; other equally important aspects such as instructional methodology application, distance education students and ODL are overlooked.

Therefore, based on the above literature review, research on instructional methods and videoconference tutorials in South Africa is still in its immaturity stage, as very little has been reported on the tutor's experience of videoconference tutorial offerings.

Most importantly, there is a need for more research possibilities in the area of instructional methods and videoconferencing tutorials for teaching and learning to take place effectively.

1.9.   THEORETICAL FRAMEWORK

As a way of refining the research problem in this study, I identified a theoretical framework upon which to base the research (Kaniki, 2006:18).

The theoretical framework upon which the study is grounded was chosen in order to guide the analysis and discussion of the findings. Aware of the research problem as highlighted in section 1.3, I realised that Community of Inquiry (CoI) theory would be appropriate for the purpose of this study. This framework postulates that deep and meaningful learning results when there are sufficient levels of three inter-related

"presences" in a virtual learning environment (Cormier & Siemens, 2010), namely teaching, social and cognitive presences.

The main research question of this study is: *What are the experiences of tutors in applying instructional methodologies during VC tutorials?* The three presences of Community of Inquiry (CoI) might best answer the research question of this study as mentioned in section 1.3.1. Furthermore, this theory represents a paradigm shift from the tutor as knowledge generator to the tutor as facilitator, with an emphasis on "student-directed learning" (Driscoll & Carliner, 2005:134). In the following section, ethical measures are discussed.

1.10. ETHICAL ISSUES

In a research context, ethics relate to the manner in which a researcher treats participants. It is always important that attention should be paid to the ethical consideration when undertaking any research (Molepo, 2014:198). In this regard, Neuman (2011:53) pointed out that the function of ethics is that of informing the researcher "what is moral, right, or proper and what is not".

For good ethical conduct, it is important that all matters be handled with honesty, integrity, respect and confidentiality. Over and above the need to observe good ethical conduct, I also took into account the ethics requirements as set out by the University of South Africa. In this regard, all the necessary documents of this study were submitted to the university's ethics committee. The university ethics committee approved that the study could be carried out (see Appendix E).

With respect to participants, it was explained that their participation in this study was entirely voluntary. It was clearly explained to them that they had the right to withdraw at any stage without any penalty or future disadvantages. Furthermore, they did not even have to provide a reason for declining to participate. A consent form (Mandal & Parija, 2014:78) was issued to participants who were prepared to be part of this research (See Appendices C & D). As anonymity relates to "the ethical protection by which participants remain nameless; their identity is protected from disclosure and remains unknown" (Neuman, 2011:139), all information obtained was dealt with confidentially.

This means that participant's answers were totally anonymous and their identities were not revealed under any circumstances. Only the researcher and the study supervisor had access to the information. In addition, no one, apart from the researcher and the study supervisor, would be able to connect any particular answers to the participants in any recognisable way. Furthermore, while the results of this study were presented and published at the scientific conferences, this was again done without revealing the identity of any participant.

As a requirement of the researcher's university (where the degree is registered), the original questionnaires are stored in a safe place. They will be kept for three years, after which they will be destroyed.

1.11.   MEASURES TO ENSURE TRUSTWORTHINESS

It was my responsibility to ensure that elements of trustworthiness were observed throughout the study. Only the information gathered was included as the findings of the study. As trustworthiness in a qualitative study refers to a demonstration that the established evidence for the reported findings is comprehensive and that the argument emanating from the results is substantial (Frank, 2010:1), I avoided adding any information that did not emerge from the data.

Guba's model of trustworthiness of qualitative research was employed. This includes truth-value (using the strategy of credibility), consistency (using the strategy of dependency), and applicability (using the strategy of transferability) (De Vos *et al.*, 1998:348-350). These four criteria identified by Guba's model will be further explored in Chapter 3. In the following section, the limitation of the study is highlighted.

1.12.   LIMITATION OF THE STUDY

Due to the qualitative nature of the research, one limitation of this study was the fact that only tutors of a distance learning institution that offers tutorials via videoconference technology were used. This situation means that only UNISA as the only dedicated distance education institution which offers videoconference tutorials in South Africa was considered.

1.13. DEFINITION OF KEY CONCEPTS

1.13.1. Distance education

Distance education (DE) refers to "educational process and system in which all or a significant proportion of the teaching is carried out by someone or something removed in space and time from the learner. It requires structured planning, well-designed courses, special instructional techniques, and methods of communication by electronic and other technology, as well as specific organisational and administrative arrangements" (Burns, 2011:280).

1.13.2. Information and communications technology

Information and communications technology (ICT) is "a more extensive term (i.e. more broad in scope) that stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals) and computers as well as necessary enterprise software, middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information" (Cantoni & Danowski, 2015:33).

1.13.3. Instructional design and plan

This is "a systematic process employed to develop education and training programmes in a consistent and reliable fashion" (Reiser & Dempsey, 2007:11). The instructional design is "dynamic and cybernetic, which means that the elements can be changed to communicate or work together" (Reiser & Dempsey, 2007:11)

1.13.4. Instructional methodologies

According to Reiser and Dempsey (2007:314), instructional methods are "elements included in instruction for supporting the achievement of the learning objective." Mayer (cited in Reiser & Dempsey, 2007:314) maintains that "the instructional methods allow learners to draw upon cognitive processes of learning through assisting learners in paying attention to relevant materials, mentally organising it into a coherent representation, and mentally relating it to prior knowledge."

"The methodologies educators use should include tools that use seeing, hearing, saying and writing" (Reiser and Dempsey 2007). Videoconference as the

instructional medium to be explored in this study involves all these tools in making sure that learning takes place effectively.

1.13.5. Interactivity

This is "a reciprocal process of information exchange between two or more players in communication or, more specifically, learning" (www.unesco.org). "Players can be students, tutors, peers and also automated student resources like databases or videoconference media" (www.unesco.org). In the context of this study, interactivity means the extent to which a videoconference, a tutor and students may have a dialog.

1.13.6. Open and distance learning

Open and Distance Learning (ODL) denote(s) "both an educational philosophy and a set of techniques for delivering knowledge and skills." As a philosophy, open learning implies "greater accessibility, flexibility and student centeredness: it implies placing the learner rather than the provider at the core of educational practice. As a set of techniques, it is characterised by the use of resource-based teaching and training, often associated with the use of new communications media" (Wei, 2010: 48)

1.13.7. Tutors

A tutor in the context of this study is "a subject specialist who helps learners in a variety of ways to understand their course material, and to acquire the knowledge, skills and attitudes necessary in their fields of study" (UNISA, 2010:2).

Tutors' role in face-to-face tutorials is therefore "more facilitative than didactic, and entails encouraging dialogue between tutors and students, among students, and between students and the academic and administrative structure of the distance learning institution" (UNISA, 2010:2). "The tutor traditionally plays a central role in supporting the students in most of the ODL institutions internationally" (UNISA, 2010:2).

"Tutors facilitate and guide the learning of the students so that they gain knowledge and understanding of the content and acquire the necessary skills and competencies to cope with their studies, and to achieve this, tutors must develop and practice a multitude of skills and strategies" (UNISA, 2010).

1.13.8. Tutorials

This is an element of the learner support programme. In this study, the term tutorials will be used to imply "instructional support presented at a scheduled time" (UNISA, 2010). A tutorial is one method of facilitation and may be used as a part of learning. "More interactive and specific than a book or a lecture, a tutorial seeks to teach by example and supply the information to complete a certain task" (UNISA, 2010:26).

1.13.9. Videoconferencing

Gorgihn, Gorghu, Suc and Bizon (2011: 575) view videoconferencing as "a system of technology that provides visual communication in real time for tutors and students, having the advantage of replacing real visits and exchanges." Furthermore, "videoconferencing is associated with distance education; however, its purposes have been found to be extensive and varied in nature" (UOM, 2007:8). Videoconferencing can be a low-cost technology to implement with the now relatively inexpensive computer video cameras and microphones.

In addition, "text capabilities can be added as a supplement for hearing-impaired students" (Sloane, Burke, Chaney & Wolf, 2010: 54).

1.14.   CHAPTER DELINEATION

In this section, an explanation of what each chapter is all about is provided.

Chapter 1 has provided an orientation to the study and set out the background for investigation, the problem statement, aims of the research, significance of the study, research method and design and clarification of the most important concepts. It has also included the plan of how the study would be done.

Chapter 2 reviews the literature on tutors' experiences of instructional methodologies used during tutorial offerings. This forms the framework that informs the study.

Chapter 3 describes and discusses the specific qualitative research design and methodology and expands on the overview given in Chapter 1.

Chapter 4 presents data analysis, interpretation and findings. In this chapter, I have transcribed and interpreted information from individual interviews conducted with

tutors at the main point of videoconference connection, which is UNISA Pretoria main campus. I used observation as a second instrument of measurement. I also used focus group interview as the third and final data collection strategy to collect data from UNISA students based in four regional centres. Instruments of measurement formed part of the process in the research findings. The data collected was analysed, tabulated and a summary was provided of the research results.

Chapter 5 wraps up the study by presenting the summary of the findings, research conclusions and recommendations derived from the study. Finally, opportunities for further research are identified.

CHAPTER 2

APPLICATION OF INSTRUCTIONAL METHODOLOGIES DURING VIDEOCONFERENCE TUTORIALS

2.1. INTRODUCTION

A literature review helps to avoid duplication or reinvention of the wheel. Briefly, it helps an aspiring researcher to be well informed about the scope and area of research (Sekgwelea, 2007:37). This chapter focuses on the literature regarding distance education (DE) and how teaching and learning can best be offered through information communication and technologies (ICT) such as videoconference (VC) technology. The chapter also highlights the concept of interactivity, which is a building block for effective VC teaching and learning, tutors' experiences and students' perceptions about the effectiveness of various methods that can be applied during VC tutorials. This chapter also focuses on the theoretical perspectives underpinning VC teaching and learning, which include the theory of Community of Inquiry (CoI).

The chapter will consider the VC technology application as a teaching medium, from which the discussion will focus on its historical evolution, and its application in the UNISA context. The focus will also be on tutors and their perception of tutoring methods as applied in the VC tutorial environment. The following section offers an overview of distance education.

2.2. DISTANCE EDUCATION

Distance education has been used as a legitimate learning method since the early 1800s, originating as correspondence study (Bettmann, Thompson, Padykula & Berzoff, 2009: 291). However, with the rise of technological enhancements in the late 1900s (Willis, 1996:6), distance education has grown in prominence across the world (Moore, 2003:561).

According to Williams (2003:52), the focus on distance education has spawned broad research, identifying various theoretical bases and methodologies within distance teaching and learning.

As a backup on Williams' (2003) argument, Moore and Kearsley (2012:2) mention that distance education is teaching and planned learning in which teaching normally occurs in a different place from the learning site, requiring communication through technologies as well as special institutional organisation. In fact, distance education takes place when the teaching and learning process occurs over geographically marked distance (UOM, 2007:7).

In distance education, it is equally reasonable for students to occasionally meet together and perhaps even meet with the teacher, but the normal place of learning is separate from the teacher's location when he or she is teaching and communicating through technologies as well as special institutional organisation (Moore & Kearsley, 2012:2).

According to the Draft Policy Framework for the Provision of Distance Education in South African Universities (CHE, 2012), distance education is a set of teaching and learning strategies or educational methods that can be used to overcome spatial and/or temporal separation between educators and students. However, DE is not a single mode of delivery; it is a collection of methods for the provision of structured learning, as emphasised by Rovai, Ponton and Baker (2008:1). It avoids the need for students to discover the curriculum by attending classes frequently and for longer periods. Rather, it aims to create a quality learning environment using an appropriate combination of different technologies (Du Toit-Brits, Potgieter & Hongwane, 2012:4).

These technological forms range from internet-based courses (Eppler & Ironsmith, 2004:131), interactive televised teaching, software-based courses to hybrid programmes using a range of distance and in-person learning techniques (Bourn & Bootle, 2005:359) such as audio teleconferencing and videoconferencing (Hamel, 2012:144). For the purpose of this study, videoconferencing is considered and discussed in this chapter.

2.2.1. Videoconferencing

Wilson (2004:3) views videoconferencing as a set of interactive telecommunication technologies that allow two or more locations to interact simultaneously via two-way video and audio transmissions. According to Neuman (2003:2), a technology used during the process of videoconferencing is called videoconference (VC).

Lawyer-Brook and McVey (2000:100) emphasise that VC is not the world's latest "hot" technology, but it is the principle of synchronous online communication, which illustrates how active learning and community building happen through a videoconferencing system. In addition, beyond the natural advantages of distant communication, the VC technology opened important opportunities for educational institutions, especially for distance learning and international meetings organised in the frame of various transnational projects (Gorgihn *et al.*, 2011:574).

Generally known as a two-way synchronous communication of sound and vision, the VC technology represents a powerful instrument for gathering people who are located in different geographical places, and it enables their communication in real time, including audio and visual connection (www.activecitizen.net). From an educational point of view, Gorgihn et al. (2011:575) view the VC as a technology that provides visual communication in real time for tutors and students, having the advantage of replacing real visits and exchanges. In addition, VC is almost always associated with distance education, although its purposes have been found to be extensive and varied in nature (UOM, 2007:8).

Common uses of VC technology, according to Davin (2010:1), are the following: distance learning, guest lectures, job interviews, remote collaborations, administrative meetings and grant proposals. While VC technology can save time and money, it can also help to reduce the campus environmental impact caused by long-distance travel (Davin, 2010:3).

According to Wilson (2004:3), for educators and students, VC technology is a medium where real-time face-to-face discussions provide a forum for support and learning. Wilson (2004:3) further indicates that educators, after the initial uncertainty and trepidation about the medium, find videoconferencing an easy way to communicate. It is a system used at the same time by both the tutors and students, and provides a solution to particular tutorial needs and logistical problems such as tutors' or students' travelling to the tutorial venue (Wilson, 2004:5).

Suduc, Bizoi and Filip (2009:10) believe that videoconferencing represents one of the main channels for carrying out a part of projects' tasks or disseminating the results. The main benefits are the elimination of physical distance limitations, the

massive reduction of expenses for organising meetings or training sessions, the possibility of direct interaction with the presenters or moderators, and related questions or answers to a specific subject being offered immediately.

In order to have a thorough understanding on this technology and its impact on teaching and learning, a literature review on how it has evolved is presented in the next section.

2.2.1.1. Historical evolution of videoconferencing

The advent of the use of radio in the field of education took place in the early 1920s and this made delivery of educational programmes over long distance a reality (Wallin, 1990: 263). Although radio was the first distance education teaching medium to be used to help students at distant sites, it was then superseded by television.

It was during the 1930s that the universities around the world, mostly the ones dedicated to distance education, began broadcasting education programmes via television to distance students, and this process has been referred to as educational television (ETV) (Ou, 2007:85).

Soon after the invention of ETV as an educational medium, an interactive video experiment between two points was carried out using a satellite link that is one-way video, two way audio (Mason, 1994:67). In this kind of video conferencing, students at a remote site or sites could see and hear the tutor on several monitors positioned around the room(s), while the tutor could not see the students. Using a telephone, the students could call in and pose questions to the teacher in the presenting site (Mason, 1994:19).

The main object of ETV was to ensure flexibility and feedback in teaching and learning, but this objective was not accomplished, due to the inability of the ETV to yield interactivity during sessions.

Ou (2007:85) further indicates that tutorials taken through ETV could be tape-recorded on the videocassette recording (VCR) device, which could help students in their exam preparations or during revision at the times convenient to them. These lesson recordings could also help those students who missed the broadcast.

ETV had its own shortcomings and limitations. According to Ou (2007:86), one of the ETV shortcomings was that the lecturer was unable to relate to the students and vice versa. The lack of opportunity for the students to ask questions and to get immediate feedback was another serious shortcoming. In other words, the students could not participate in the discussions (Ou, 2007:86).

Lecturers were reluctant to apply the medium of ETV because the student-lecturer interaction was missing. Consequently, two-way audio systems known as telephone conferencing (two-way audio, audio-conferencing) evolved around 1970 to replace ETV (Hardy & Olcott, 1995:49). This system was used to connect teachers and students at two or more sites (Ou, 2007:86). According to Mason (1994:67), most of the application of the telephone conferencing system was for remote delivery of classroom type teaching.

Interaction between tutors and students was possible in telephone conferencing, but the only impossibility would be that the parties could not see each other. To validate this notion, Mason (1994:82) further argues that tutors were at a disadvantage because they could rely only on the students' voices to determine whether they had comprehended the information or not.

In the mid-1980s, the advent of two-way interactive video (TWIV) systems revolutionised distance education (Ou, 2007:87), to such an extent that today TWIV systems are at the forefront of distance learning technology. This came after the failure of ETV, which could not yield interactivity during lessons.

The use of TWIV systems consists of having a tutor (and students) in one tutorial venue linked to students in one or several remote venues, designated as receiver sites (Ou, 2007:87). The linkage is possible over an integrated services digital network (ISDN), satellite, radio waves or very popular Wide Web or IP (Internet protocol) connections (Lawyer-Brook & McVey, 2000:102). The key feature of the TWIV system is its capability of bringing interactivity into the learning and teaching environment (Ou, 2007:88).

With this medium, tutors can see and hear everyone at each site and the students in each site can see and hear not only the tutors, but also the students in every other site and this is called multipoint connections (Wilson, 2004:3).

Moreover, Wilson (2004:3) mentions that tutors can receive and answer questions, and at the same time, obtain feedback from the facial expressions of students (verbal and non-verbal feedback is possible). This allows for a sharing of ideas and questions that was not possible using previously available distance learning technologies.

Today VC is an invention that is undergoing a silent revolution, and is being used by many institutions of higher learning, such as the University of Windsor (Uwindsor) – Ontario in Canada, African Virtual University (AVU) in Nairobi in Kenya and the University of South Africa (UNISA) in South Africa (Wilson, 2004:4). The above-mentioned institutions are merely examples of many users around the world, and for the purpose of this study, they are fully discussed in the following sections.

- *University of Windsor – Canada*

The University of Windsor (UWINDSOR) in Canada, although established as a residential university, has invested in VC technology to facilitate real-time communications with remote parties over the voice and data networks (UWINDSOR, 2010:3). Videoconferencing at this university is available to the university community at no charge during regular business hours.

At this university, VC technology plays an important role in establishing and enriching the academic, community, and professional networks involved in the teaching, learning, research, and administrative mission of the University (UWINDSOR, 2010:3).

VC offers a level of interaction among distant students and groups that is often necessary but not easily available through other media. Therefore, the University of Windsor provides technical and pedagogical support for room system videoconferencing (UWINDSOR, 2010:3).

The university has four classrooms and five boardrooms equipped with VC technology facilities, as well as a video bridge, which can accommodate 24 sites. In order to facilitate effective, consistent, and satisfactory use of this service, the university has developed a policy on the use of VC technology on campus. This policy describes user and support staff responsibilities, service timelines, the level of

support provided for the use of this technology, and the technical requirements for the installation of new facilities that involve videoconference room systems (UWINDSOR, 2010:4).

- *African Virtual University (AVU)–Kenya, Nairobi.*

The African Virtual University (AVU) is a Pan-African Intergovernmental Organization established by charter with the mandate of significantly increasing access to quality higher education and training through the innovative use of information communication technologies (AVU annual report, 2011:3).

The African Virtual University has conceptualised the "AVU Learning Architecture", which deals with education where different levels of technology prevail. According to the AVU annual report (2011:4), this AVU Learning Architecture includes the use of mixed modes of delivery, such as video conferencing (VC), use of the internet, CD-ROM, video and print-based materials and mobile learning.

A typical AVU remote class at a learning centre (LC) has 25-50 learners who either view a lecture on a large screen of VC or work online on computers that have been provided to learning centres throughout Africa. AVU annual report (2011:4) further indicates that, the learners interact with tutors and other students mainly via the videoconference technology with the augmentation of e-mail, WebCT and the telephone Computer Science degree and diploma programmes utilise this blended mode. Short courses that include certificate programmes in journalism, business English and IT also use VC technology for delivery (AVU annual report 2011:5).The University of South Africa is the third VC user and will be discussed in the following section.

- *University of South Africa (UNISA) – South Africa.*

In South Africa, the University of South Africa (UNISA) employs VC technology for discussion classes, meetings and tutorial purposes. UNISA introduced a video conferencing system in 1990 as a way of contacting students in a distance-learning environment (Wilson, 2004:4). As the VC technology allows for active participation and interaction as well as improved relationship with students, lecturers prefer having discussions with their students through this medium. They always want to

facilitate question-and-answer sessions, and observe their students while they perform practical activities.

During 2004, after the government reconstitution and institutional merger between Technicon South Africa (TSA), the old UNISA, and the incorporation of Vista Distance Education unit, the new UNISA proposed a full integration of the entire videoconferencing system into its student support (UNISA 2011). Currently, forty-five (45) UNISA modules are tutored through videoconferencing under the management of the Directorate: Instructional Support Services (DISS) in collaboration with UNISA's ICT and regional learning centres. Furthermore, there are functional VC facilities in six UNISA regions (see Table 2.1).

Table 2.1: UNISA VC venues and capacity

REGION	CENTRE	NUMBER OF VC ROOMS	CAPACITY
Gauteng	*Pretoria(Main campus)*	2	60,40,
	Pretoria(Sunnyside Campus)	3	40,50,10
	Florida Campus	2	50,80
	Ekurhuleni RSC	1	20
	Johannesburg RSC	2	25,25
Limpopo	*Polokwane Region*	1	25
Mpumalanga	*Nelspruit Region*	1	15
	Middelburg Region	1	20
Midlands	*Rustenburg RSC*	1	20
	Mafikeng SLC	1	20
	Bloemfontein Region	1	18
Cape Coastal	*Cape Town / Parow RSC*	1	35
	Port Elizabeth SLC	1	25
	East London SLC	1	15
	Umtata SLC	1	25
KwaZulu-Natal	*Durban RSC*	1	62
	Pietermaritzburg	1	25
	New Castle SLC	1	23

Videoconferencing in all these venues can inter-link with one another to facilitate learning (see Figure 2.1).

In other words, when suitable tutor for Economics cannot be found in Durban, for example, an Economics tutor who is based in Pretoria can be employed to facilitate learning via VC to students in Durban from Pretoria.
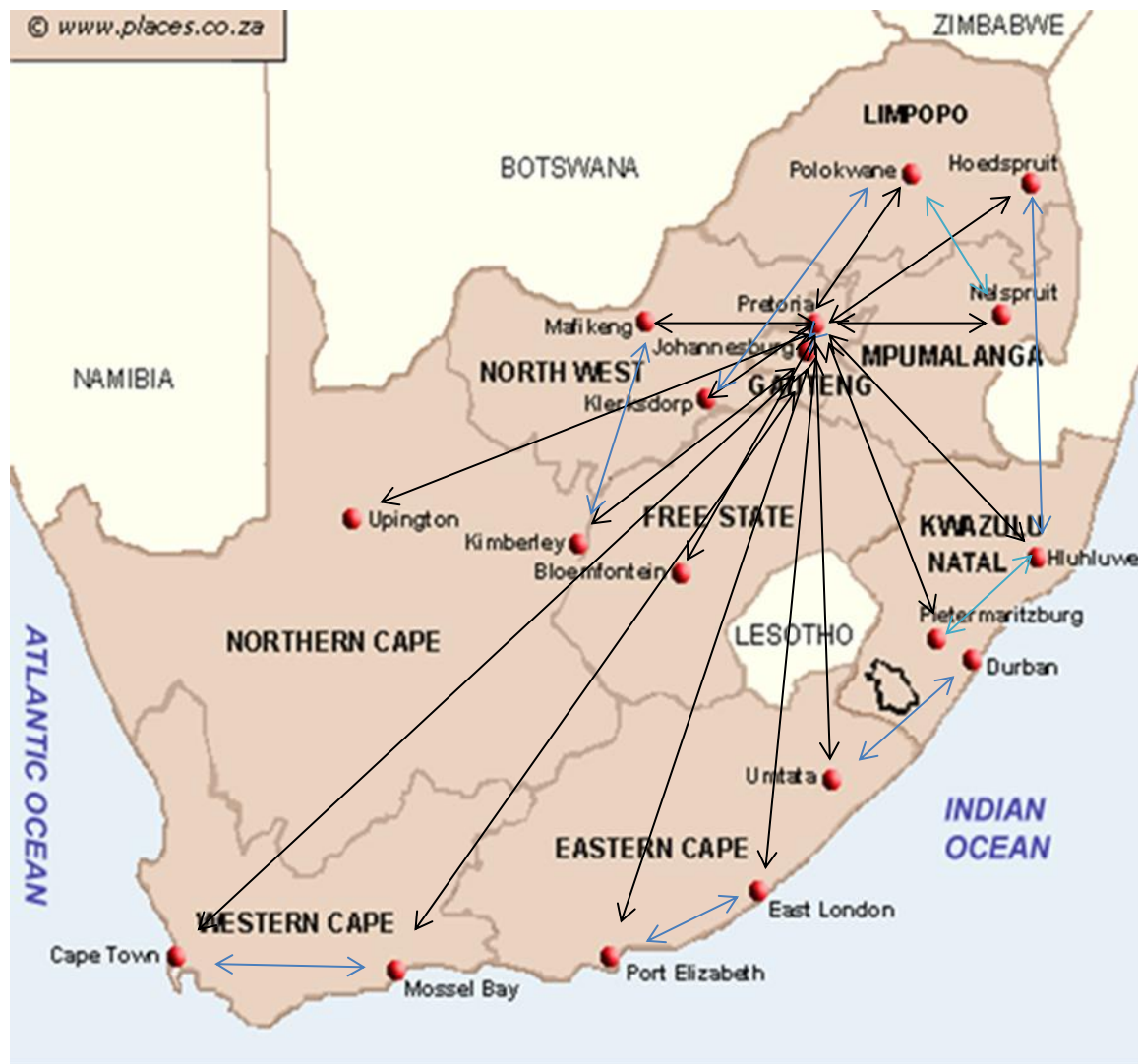
This arrow shows that more than two centres are connected through multiple mode VC connection *(one centre connected to many centres)*.

This arrow shows that two centres are connected to each other through single mode VC connection *(one centre connected to one centre)*.

Figure 2.1: UNISA's 19 videoconference venues and linkages

Source: Adapted from UNISA, 2007.

The benefits of using VC for teaching and learning in distance education institutions are discussed below.

2.2.1.2. Benefits of videoconferencing in distance education

According to Gillies (2008:108), the introduction of the VC facility to the education system some 20 years ago was quickly recognised as having the potential to address a number of issues facing higher education. Its perceived benefits can be summarised in terms of access, cost, time and interaction, as indicated below.

- *Access*

Videoconferencing became a popular system with campus-based universities who were previously unable to reach their students effectively in far-flung areas. Thus, where geographical isolation had been a problem, the videoconferencing system promised to bring new opportunities and options (Gillies, 2008:107). In this way, the videoconferencing system supports distance education. It can also be an important factor to consider as an alternative pattern of teaching and learning (Gillies, 2008:108). Laurillard (2002:156) comments that remote access to expert input or opinion has also been cited as a benefit of this system. In this regard, students can access inputs from experts such as lectures or specialists in a particular field through VC technology, while they are in the remote areas.

- *Costs*

Videoconference technology can ensure significant savings in terms of eliminating travel costs and allowances for lengthy trips during meetings (Mikhail, 2013:1). The purpose of instructional use of VC technology was born out of the idea of cost cutting. Freeman (1998:200) confirms this notion by saying that the videoconferencing system reduces the overall cost to universities and colleges that run multiple sites by reducing the need for teaching and administrative duplications. Specifically, Canning (1999:39) points out that it reduces or eliminates costly travel time for staff between sites, and compensates for the loss of face-to-face contact. The biggest advantage or benefit videoconference technology has to offer is the ability to meet with people in remote locations without incurring travel expenses or other expenses associated with face-to-face communication (Owen, 2012: 1).

Videoconferencing is supposed to replace face-to-face meetings, thereby decreasing travel costs, and thus changing the way in which people conduct business and communicate (Saunderson & De Wet, 2005:109).

- *Time*

According to Mikhail (2013:1), the major benefits of the videoconferencing system include ensuring that there will be increased productivity because people do not have to spend so much time travelling for meetings and conferences. Furthermore, Bates (2005:79) indicates that the system provides a means of communicating and holding meetings between faculty and administrators in different locations, without the need to have large numbers of people travelling, thereby saving time.

Videoconferencing promotes interaction between lecturers and students at remote locations, while saving on time. Because it is a live broadcast, students have the opportunity to interact with lecturers and fellow students at various locations at the same time (Nkosi, Matlakala & Makua, 2012:1).

- *Interaction*

According to Bates (2005:74), compared to other methods of distance education, videoconferencing provides benefits in terms of real-time interaction, immediacy, motivation and collaborative learning. In his research findings, Hills (2005:83) reiterates the importance of sufficient bandwidth in the interaction setup. He concludes that the great improvements brought by bandwidth links mean that the quality of video is now such that it removes many of the issues of facial expression and body language that previously limited the degree of social presence possible in the VC technology environment.

Bates (2005:74) continues by saying that smooth interactivity during VC tutorials (tutorials which are conducted via VC technology) will bring a sense of togetherness and shared experience, a camaraderie, which can help offset the particular danger of attrition where students study both remotely and individually.

The basic idea of interactive teaching is that students must be active (www.smartsheet.com), and this is more practical where feedback is given timeously. Thus, a teacher should give feedback as soon after the event as possible

to consolidate the importance of interactivity. According to Markett, Arnedillo Sanchez, Weber and Tangney (2006:281), pedagogical interactivity is a complete message loop originating from the students and returning to the student. However, it takes into account that learners have experience and knowledge that they bring to each situation (Markett *et al.,* 2006:281).

Both human and non-human interactions are integral and reciprocal components of a quality VC tutorial experience (Swan, Garrison & Richardson, 2009:15). According to Garrison, Randy and Anderson (2003:41), interactivity is a communication between human beings and between human beings and technical application, where there is interplay going further than one way. Thomas (2001:2) further emphasises that interactivity can be seen as part of a system where learners are not passive recipients of information, but engage with material that is responsive to their action.

From a VC technology perspective, the concept of interactivity provides some social advantages. Gillies (2008:109) indicates that at primary or secondary education levels VC technology has been used to bring together children and young people from very different linguistic, social, and cultural backgrounds. In support of this notion, Markett *et al.* (2006:281) emphasise that public anonymity, where the tutor knows who sent what but other students do not, encourages interactivity and can be supported via VC technology. Thus, public anonymity allows all students to be valid contributors to ensure discussion, whether they supply right or wrong answers (Markett *et al.,* 2006:281). Davis (2003:456) adds that it encourages shy, non-participatory or self-conscious students, increases learner–content interaction (Drapper & Brown, 2004:13), promotes classroom accountability and encourages student interaction (Davis, 2003:300).

Gillies (2008) postulates that a considerable body of research evidence points to the benefits of mutual understanding, broadened awareness, tolerance, and new insights afforded by videoconference interaction of this kind.

Although the above explanations by Gillies (2008) come from different perspectives, they share the idea that interactivity requires two fundamental conditions; first, at least two participants must interact with each other, and second, the actions of these participants must include an element of reciprocity.

Reciprocity, according to Domagk, Ruth, Schwartz and Plass (2010:1025), means that change occurs on both sides; thus, the actions of one party trigger responses from the other, which leads in turn to changes in the first. In the following section, a literature review on interactive videoconference technology is provided.

2.2.2. **Interactive videoconference technology**

The utilisation of VC technology places an onus on the tutor to reassess his/her role in the pedagogic process. In other words, a tutor needs to incorporate varieties into instruction to keep students interested and actively involved (Reed & Woodruff, 1995:3).

Galbreath (1995:36) further cautioned that a tutor can adopt skills of interacting with students from distance through VC technology, hence he/she must be technologically literate (being able to understand and operate the equipment). This will require tutors' willingness to be exposed to a new pedagogic environment and adapt since tutoring through VC is different from face-to-face tutoring, to a certain extent.

However, Jonassen, Peck and Wilson (1999:10) add that educators must increase and improve their technological capability, but must also ensure that their efforts are geared towards student discovery through interactivity in the learning experience, because this will develop student's interest in utilising the VC equipment and thereby create a feeling that they belong to the learning process.

To substantiate the above notion, Hamm and Faircloth (2005:62) add that a sense of belonging to a community such as school involves feeling more than just that one fits in; there is an emotional attachment to and security in the setting that comes from feeling valued by and valuing of the community. There are three (3) forms of interactivity. These include pedagogical interactivity (PI), technical interactivity (TI) and instructional interactivity (II). According to Latheef and Romeo (2010:1), technological interactivity can be orchestrated to blend with pedagogical interactivity and instructional interactivity to enhance teaching and learning (see Figure 2.2).
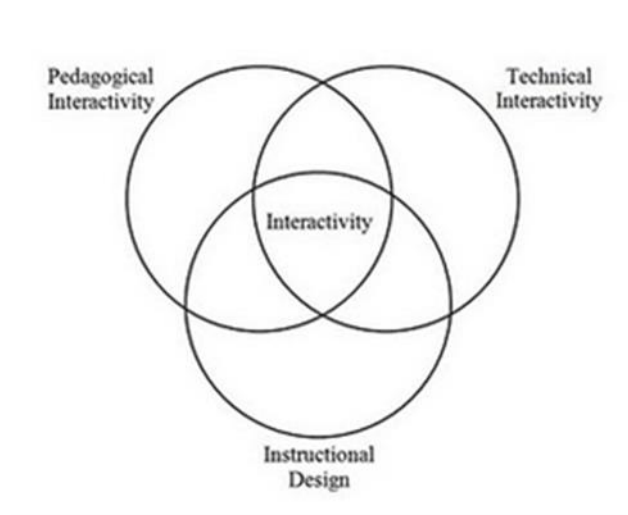
**Figure 2.2: Pedagogical interactivity, technical interactivity and
instructional interactivity coordination**
Source: Adapted from Latheef & Romeo, 2010:3.

- *Pedagogical interactivity (PI)*

PI is related to interactive teaching, where tutors use higher order questioning and students' active contributions are valued as they test their developing understanding against collective meaning (Jones & Tanner, 2002:2). In the tutorial venue, the tutor may constantly use questioning as a vehicle to keep students engaged during instruction (Rajagopal, 2010:78).

Question and answer driven academic discussions allow students to receive personal interaction and to gain immediate feedback in a step-by-step manner that can help fix errors in real time, producing greater immediate gains and more efficient learning (Corbett & Anderson, 1990:8).

- *Technical interactivity (TI)*

Technical interactivity is related to the human being (tutor), through PC connected to the VC equipment, being able to have a dialog with the programme in the PC. For example, a Microsoft Excel Programme (a software application) can be used as an accounting tool when tutoring accounting subjects. Thus, when a calculation is inserted into a cell, a tutor will be instructing the programme to make a calculation using numbers in cells he or she identifies. As this interaction between the user and

a system takes place Milojević, Kleut, & Ninković, 2013: 94), the answer will appear in the cell where the user (tutor) has inserted the calculation, and as this synchronisation takes place, students learn more effectively.

Taylor (2012:8) summarises the above notion as an interactive system which adjusts its visual data display in response to the user, whereby when a person (tutor or student) clicks an item on the screen, the computer may respond by retrieving information about that item and displaying the results onscreen to the user.

In this instance, there is a technical interactivity, which incorporates pedagogical interactivity and instructional interactivity.

- *Instructional interactivity (II)*

According to Beauchamp and Kennewell (2010:759), VC technology can support whole-class teaching and the rate of interactivity between the tutor and students tends to increase with its use. VC technology can empower students by encouraging a student-centred approach that supports independent and constructive learning.

2.2.3. Benefits of interactivity enforcement

Anderson (2003:3) suggests that when involvement between students and tutor is ensured the notion of 'equivalency of interaction' adds a useful perspective on the issue of interaction in learning. This notion claims that no single medium supports the educational experience in a manner that is superior in all ways to other media (Anderson, 2003:4). Therefore, deep and meaningful formal learning is supported as long as one of the three forms of interaction (student-student; student-tutor; student content) is at a high level (Ng, 2007:3).

In addition, a study on videoconferencing systems by Knipe and Lee (2002:302) concentrates more on the practical advantages of the medium, rather than focusing on the quality of teaching and learning (Bollon, Emerson, Fleming & Williams, 1989:65). Bollon *et al.* (1989:65) further respond that the potential for interaction and discussion with students is rarely realised. Thus, students become reluctant in making use of the VC facility to discuss issues and raise questions. Instead, the best use of the facility was in the form of a didactic lecture (Bollon *et al.,* 1989:68). In contrast with the above notions, one would argue that there are benefits of using VC

technology in teaching and this technology has the ability to improve teaching and learning, especially when interactivity is enforced. In addition to the views of Bollon *et al.* (1989), there are benefits that might emerge when interactivity is enforced during VC tutorials. These include:

- *Increased tutor's self- esteem*

The concept of self-esteem is described by Rosenberg, Schooler, Schoenbach and Rosenberg (1995:301) as a favourable attitude towards the self. In other words, an individual's self-esteem is a generalised evaluation of the self, which has the potential of influencing thoughts, moods and behaviours (Rosenberg *et al.,* 1995:345).

When a tutor adapts to skills of interacting with his/her students during VC tutorials, his/ her self-esteem is maximised and he/she can thereby take pride in his/her fulfilment (Odunayo & Obehi, 2010:339). In contrast, tutors with defensive or low self-esteem typically focus on trying to impress their students.

They lack confidence in themselves, often have doubts about their worth and acceptability and hence they are reluctant to expose themselves to failure (Odunayo & Obehi, 2010:339). They frequently blame students for their inability rather than taking responsibility for their own actions (Odunayo & Obehi, 2010:339). For example, when a tutor's efforts to create and maintain a healthy self-esteem are thwarted, frustration begins to set in.

- *Tutors' motivation*

When there is interactivity during the VC tutorials, tutors' motivation becomes richly elevated. Motivation refers to "the reasons underlying behaviour" (Guay, Chanal, Ratelle, Marsh, Larose & Boivin, 2010:712). Motivation involves a constellation of beliefs, perceptions, values, interests, and actions that are all closely related. As a result, various approaches to motivation can focus on cognitive behaviours (such as monitoring and strategy use), non-cognitive aspects (such as perceptions, beliefs, and attitudes), or both (Guay *et al.*, 2010:713).

According to Davis (2003:301), whatever level of motivation tutors bring to the tutorials will be transformed, for the better, by what happens in that tutorial session.

Therefore, if tutors strive for interactivity, it can contribute to the transformation of tutorials, positively in most if not all cases. Not all tutors are motivated by the same values, needs, desires and wants. Some tutors will be motivated by the external stimuli of students (for example, curiosity and involvement) (Nyamu & William-west, 2014:5), and some by overcoming challenges (Davis, 2003:301).

- *Removal of distracting factors*

A tutor's physical location was originally meant for dominating the students, but this is no longer relevant for learning to take place today (Kopf & Effelsberg, 2007:11). According to Tintarev & Ryden (2011:3), videoconferencing allows the tutor to impose his/her presence at an optimal level, which may range from a nearly invisible voice commenting on the events on the screen, to standing up near the screen or even to the amplified tutor's presence as an enlarged picture on the screen. Tutors' visibility can itself encourage interactivity.

- *Improved student performance*

Kopf and Effelsberg (2007:11) further postulate that a change from a moving and gesticulating tutor to a sitting tutor combined with an increased eye contact with the students can lead to better opportunities for students to ask questions, which could in turn lead to elevated performance.

This means that when a tutor settles before the VC equipment screen, he/she can have good eye contact with students; therefore, they in turn have more opportunity to engage him/her through asking questions than when he or she moves around (Kopf & Effelsberg, 2007:11). Therefore, when students engage a tutor, learning becomes interactive and interesting, thereby improving their performance.

- *Tutors' presentation skills are sharpened*

The more tutors involve students in their tutorials, the more they gain confidence in their presentation skills which, in the long run, make facilitation of learning more enjoyable. They need to explore various relevant instructional methodologies in their presentation. It follows that an effective teacher is an excellent communicator and therefore thinks about improving his or her presentation skills (McKeachie & Svinicki, 2006).

In the context of this study, there are two main issues of significance for the VC tutorials that are under study: instructional methodologies and active student engagement in tutorials (Kopf & Effelsberg, 2007:21). The following section looks into the instructional methods that are compatible for VC tutorials.

2.3. INSTRUCTIONAL METHODS PERTINENT TO VIDEOCONFERENCE TUTORIALS

Instructional methods are primarily descriptions of the learning objective-oriented activities and flow of information between teachers and students (Kizlik, 2013). Any instructional method a teacher uses has advantages and disadvantages, and requires some preliminary preparation (Wehrli & Nyquist, 2003).

Often, a particular teaching method will naturally flow into another, all within the same lesson, and excellent tutors have developed the skills to make the process appear seamless to the students.

Instructional methods are the "how to" in the delivery of tutorials. Reiser and Dempsey (2007:314) define these instructional methods as elements included in instruction for supporting the achievement of the learning objectives. There is more than one method to use in tutoring students. The methods that can be used in many learning situations, including the VC environment, are primarily dictated by the learning objectives decided upon by the course developers.

Tutors need to adopt relevant methodologies that are compatible with technology in order for their instruction to be more successful. Grant and Cheon (2007:214) further caution that new methodologies to instruction must accompany new technologies, adjusting to the changing teacher's role, motivating learners, and preparing learning materials to fit the VC tutorial.

Not all instructional methodologies are applicable to the VC environment though. For example, VC tutorials are not suitable for programmes that require hands-on courses such as learning computer applications and science laboratory classes (Lau, 2005:73).

Kizlik (2013) argues that the appropriate instructional method for a particular lesson depends on many things; among them the age and developmental level of the

students, what the students already know, and what they need to know to succeed with the lesson, the subject-matter content, the objective of the lesson, the available people, time, space and material resources that include technology, and the physical setting.

The following teaching or instructional methods relate to the VC format:

2.3.1. Brainstorming sessions

This is a process for generating multiple ideas or options in which judgement is suspended until a maximum number of ideas have been generated (Wehrli & Nyquist, 2003).

Students can then be tasked to come up with solutions to specific problems, and develop subsequent analysis that will enhance more collaboration between all the class members (UOM, 2007). In the end, when the best solution has been identified, a plan of action can be developed.

Given that VC technology is a visual medium and a medium to encourage interaction between all sites, the better approach is more likely to be one that encourages interaction between all sites linked to the session (www.deakin.edu.au), and therefore brainstorming is one of the methods that foster such interactivity.

Although brainstorming can lead to "group thinking", it promotes peer learning and creates synergy (Wehrli & Nyquist, 2003).

2.3.2. Focused discussions

During VC tutorials, pre-planned thought-provoking structured questions are essential because they stimulate discussion amongst students at the local and remote end (UOM, 2007).

Accordingly, discussions can be generated by splitting the class into small groups and assigning differing material to introduce. Michinov (2012) emphasises that in focused discussion it is important for a tutor to differentiate the question types such as exploratory, cause and effect, hypothetical or diagnostic in order to increase the value of discussion. It seeks information and stimulates thinking and elaboration at

all levels of human reasoning to achieve a given objective (Santanen, Briggs & De Vreede, 2004).

According to Wehrli and Nyquist (2003), in the VC setting, it is important for a tutor to develop group facilitation skills to manage interaction, time and process effectively, paying attention to both task and group interaction functions.

Though in some cases VC might handle large group discussions, different sites can be used as different groups in discussions, and that might be possible in a multipoint or bridge connection of VC technology, where all the sites participate in one single discussion (Nematandani & Ramorola, 2013).

2.3.3. Problem-based learning (PBL)

In problem-based learning (PBL), the problem comes first and learners work through the problem through progressive disclosure by formulating hypotheses, exploring mechanisms, developing and researching learning issues, and applying new information to the case (UOM, 2007). When students work in groups, they identify what they already know, what they need to know, and how and where to access new information that may lead to resolution of the problem (www.wikipaedia.com). Therefore, the role of the tutor, according to (Downing, Pittaway & Osborne, 2014:4) is to encourage student engagement.

Robertson and Nicholson (2007) indicate that research shows a vast enhancement of the PBL environment when VC technology is used in teaching and learning, especially when the tutor builds students' confidence to take on the problem, and encourages the students, while also stretching their understanding.

While the above strategies are important in ensuring interactivity during VC lessons, Tiwari (2010:17) concludes that methods such as laboratory, discovery and guided approaches are not necessarily compatible with the VC tutorial due to the nature of VC technology, although that they can fit well in a traditional face-to-face tutorial setup.

In addition to the above methods, techniques that are adaptable to learning at a distance via VC technology also include lectures, the use of multimedia, and use of facilitator at the far end, advance organisers, anchored instruction, concept mapping,

interactive exchanges and involvement of the participants (Peterson, 1996:46). In the following section, the theoretical framework that informs VC tutorials will be fully discussed, as it is perceived to be the foundation of active learning during VC tutorials.

2.4. THEORETICAL PERSPECTIVES THAT INFORM VIDEOCONFERENCE TUTORIALS

In spite of the explosion of empirical research in online learning effectiveness over the last decade in terms of development, acceptance, and verification of theoretical frameworks unique to the online learning environment, the field is still relatively deficient in some respects (Garrison & Arbaugh, 2007:157). Although there are several potential emerging theoretical frameworks of online learning that are considered effective, one that has attracted a lot of attention is the Community of Inquiry (CoI) framework developed by Garrison, Anderson and Archer (2000:87).

Interactive as it is, videoconference (VC) technology incorporates the notion of social engagement of learners. One of the elements of the Community of Inquiry framework, according to Gunawardena and Zittle (1997) is described as the ability of learners to project themselves socially and emotionally, who then are regarded as real people in mediated communication.

To add to this notion, Williams, Duray, and Reddy (2006:592) maintain that recent research into the role of student group cohesiveness and interaction on team effectiveness in online learning suggests a strong relationship between social presence and learning outcomes.

Higher education has consistently viewed community as essential to support collaborative learning and discourse associated with higher levels of learning (Garrison & Arbaugh, 2007:158).

Notwithstanding the potential for disconnectedness in online learning communities, there is evidence that a sense of community can be created online (Thompson & McDonald, 2005). Equally so, a sense of community can also be created through VC technology. Based on these facts, I argue that the pedagogy behind technology-based discussion forums assumes that students will work together, and socially

engage one another, not independently as in traditional distance education (Swan & Ice, 2010:1), and therefore a theory that supports this argument could be Community of inquiry (CoI), as it is social constructivist in nature.

2.4.1. Community of inquiry theoretical framework (CoI)

In applying a community of inquiry framework in this study, my argument is that the quality of teaching and learning should be informed by a proper application of relevant instructional methodologies during the VC tutorial offerings, and for this reason, interactivity should be central to this process.

I see interactivity as an extension of the community of inquiry (CoI) which, from an educational context, could be modelled by a group of students who collaboratively engage in purposeful critical discourse and reflection to construct personal meaning and confirm mutual understanding (www.wikipedia.org).

The CoI framework is social constructivist in nature and grounded in John Dewey's (1938) notion of practical inquiry (Swan & Ice, 2010:1). It is a dynamic process model designed to define, describe and measure elements supporting the development of online learning communities.

According to Garrison (2011:46), CoI is a generic theoretical framework that must be viewed as a means to study collaborative constructivist educational transactions, be they in online, blended, or face-to-face environments. For this reason, a VC venue should portray a type of community of inquiry, which can lead to "questioning, reasoning, connecting, deliberating, challenging, and developing problem-solving techniques". This can eventually culminate in effective interactivity (Lipman, 2003).

In the same way, in the context of this study, VC technology should be able to convey visual and auditory cues in order to consolidate the depth of interactivity during tutorials. Otherwise, this might result in a sense of loss among learners (Palloff & Pratt, 2007). One way to minimise this loss and improve learners' sense of community is to increase participants' social presence (Carr & Fulmar, 2000).

Although audio can contain verbal cues that are absent in text, both text and audio lack visual communication cues that can help to establish social presence (Borup,

West & Graham, 2012:79). Consequently, the lack of visual and vocal cues can make establishing social presence difficult (Garrison *et al.,* 2000).

It has been suggested that this sense of isolation has contributed to online learning's high attrition rate, estimated to be higher than that of face-to-face learning (Song, Singleton, Hill & Koh*,* 2004:64). The CoI framework represents a process of creating a deep and meaningful collaborative-constructivist learning experience through the development of three interdependent elements: social presence; cognitive presence; and teaching presence (see Figure 2.3 below). This framework postulates that deep and meaningful learning takes place when there are sufficient levels of three inter-related "presences" in a virtual learning environment (Cormier & Siemens, 2010).

Community of Inquiry
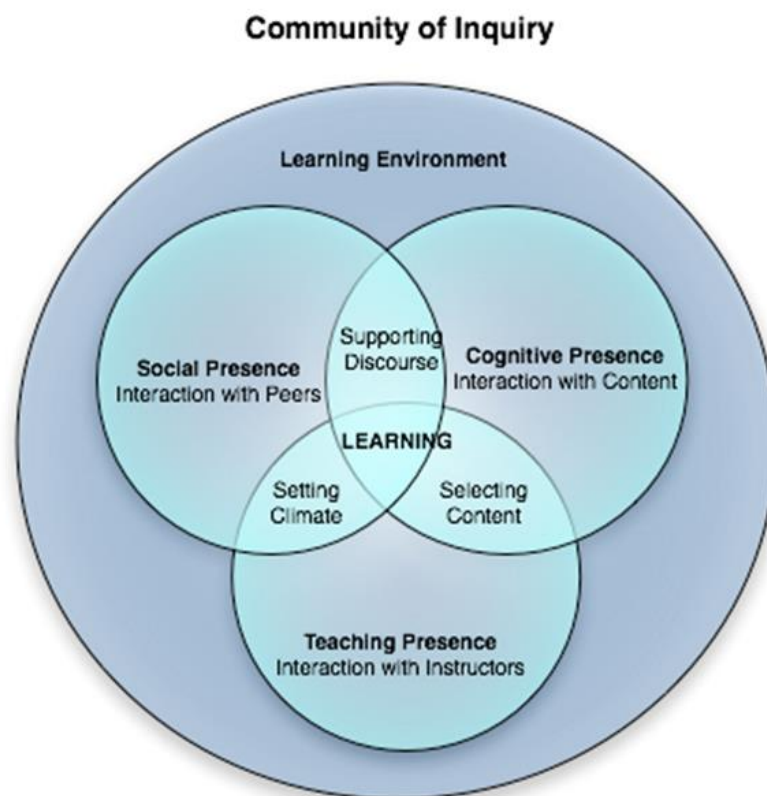
Figure adapted from R. Garrison, T. Anderson, L. Rourke et al Community of Inquiry Model [2007]

Figure 2.3: Community of Inquiry model

2.4.1.1. Social presence

According to Garrison (2011:63), social presence is described as the ability to project oneself and establish personal and purposeful relationships. It asks learners to establish personal and purposeful relationships to foster effective communication and group cohesion (Garrison, 2011:63) by projecting their persona characteristics into the community of inquiry. Participants view one another as "real people" (Garrison & Archer, 2007). Swan and Ice (2010:1) views social presence as the degree to which participants in an information communication and technology (ICT) environment feel affectively connected to one another.

Garrison *et al.* (2000) proposed that social presence is established through emotional expression, open communication and group cohesion, whereby participants create a supportive environment where critical thinking and inquiry are fostered. Since visual cues are not possible, emotional expression can be developed using emotions.

Open communication develops from an initial stage of students and teacher getting to know one another, where understanding of expectations in the online community is established and a level of comfort in communicating openly online follows (Garrison & Arbaugh, 2007). Group cohesion develops around common goals based on collaborative activity in the community of inquiry (Garrison, 2011).

While social presence does not guarantee that critical discourse will develop in an online environment, it is difficult for such discourse to develop without the establishment of social presence (Garrison & Cleveland-Innes, 2005:4). In addition, Hwang and Arbaugh (2006) show a strong relationship between social presence and learning outcomes. Social presence intersects with cognitive presence in an educational context through collaborative activity with a common intellectual focus when students recognise that they are not there merely for social reasons (Garrison, 2011).

2.4.1.2.   Cognitive presence

Cognitive presence is defined within the framework of a community of inquiry, but is grounded in the critical-thinking literature and is operationalised by the practical inquiry model described in Figure 2.3 above (Garrison, Anderson & Archer*,* 2001:8).

A tool to assess cognitive presence depends on the use of the model of critical thinking (i.e. practical inquiry) and its ability to reflect educational practice.

Garrison and Arbaugh (2007:23) describe cognitive presence as the distinguishing characteristic of higher education based upon foundational ideas of John Dewey's (1933) construction of practical inquiry. According to Garrison *et al.* (2001:334), the cognitive presence leads to a four-phased process in terms of a practical model of inquiry. The phases are a triggered event, exploration, integration and resolution.

Triggering (state of dissonance) – This is a first phase of the practical inquiry model, which is considered as the starting point of critical inquiry (Maness-Gilliland, 2010). Tolu (2010) maintains that it is in this phase where the students recognise a problem and develop a sense of puzzlement in the learning environment.

Here an issue, dilemma, or problem that emerges from experience is identified or recognised. In an educational context, especially in the VC environment, the tutor often explicitly communicates learning challenges or tasks that become triggering events (Garrison *et al.,* 2001). However, in an application of a medium such as VC technology, any group member may purposively or indirectly add a triggering event to the discourse. In this instance, a critical role of a VC tutor (actualising teacher presence) would be to initiate, shape, and, in some cases, discard potentially distracting triggering events so that the focus remains on the attainment of intended educational outcomes (Garrison *et al.,* 2001:8).

The second phase of the process is *exploration* – This phase involves searching for information that gives greater understanding of the problem. To put it clearly, in this phase students are required to perceive or grasp the nature of the problem, and then move to a fuller exploration of relevant information (Garrison *et al.,* 2001:8).

Akyol and Garrison (2011:188) postulate that students put forward suggestions for consideration and brainstorm about the problem. Shin (2008:77) further indicates that students in this phase explore problems by asking each other brainstorming ideas, sharing experiences and information, and adding to the knowledge established or expressed. At the end of this phase, students begin to be selective with regard to what is relevant to the issue or problem (Garrison *et al.,* 2001:9).

The third phase, *integration*, is characterised by constructing meaning from the ideas generated in the exploratory phase. This is where students focus on making connections between ideas and developing possible solutions to construct meaning from the ideas developed in the exploration phase (Garrison & Arbaugh, 2007:334).

This phase requires active teaching presence to diagnose misconceptions, to provide probing questions, comments, and additional information in an effort to ensure continuing cognitive development, and to model the critical thinking process. Briefly, this phase involves combining or rejecting the ideas generated by the information searched in the exploration phase, until a coherent concept is formed (Garrison & Arbaugh, 2007:162).

Resolution – This is the fourth phase; it is a resolution of the dilemma or problem by means of direct or vicarious action (Garrison *et al.,* 2001:11). This means that the resolution of the problem signifies formulation of a solution or application of an idea, and if this resolution is not successful, the process of inquiry continues. According to Tolu (2010), in this phase students describe ways to test and apply knowledge created, and also apply the idea or knowledge to new situations. Vaughan and Garrison (2005:8) posit that students have great difficulty in progressing from the exploratory phase to integration and resolution, although the triggering phase becomes easy for them to comprehend.

However, the topic being discussed and questions being posed have an impact on the level of cognitive activity (Arnold & Ducate, 2006:43). Making students aware of the phases of inquiry and how they relate to the prescribed task are ways of moving the discussion to higher levels of response (Garrison & Arbaugh, 2007). This is clearly indicated in Figure 2.4 below, which depicts a practical inquiry model (Garrison *et al.,* 2000).
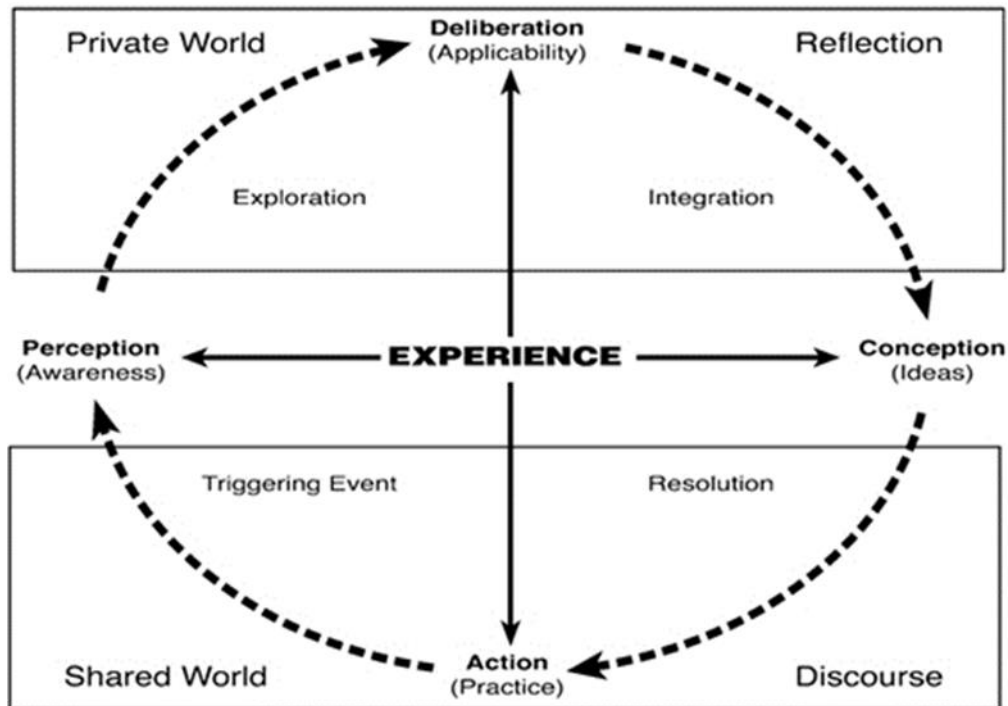
Figure 2.4: Practical Inquiry model

Source: Garrison *et al.*, 2000.

In this study, to ensure that students move through the phases of the practical inquiry model efficiently, teaching presence, to which I will now turn my attention, provides the necessary guidance (Shea & Bidjerano, 2009).

2.4.1.3. Teaching presence

Garrison *et al.* (2000:454) contend that although both social and content-related interactions among participants are necessary in virtual learning environments, interactions by themselves are not sufficient to ensure effective online learning. These interactions, according to Garrison and Arbaugh (2007:163), need to have clearly defined parameters and be focused in a specific direction, hence the need for teaching presence.

Teaching presence is defined as the design, facilitation and direction of cognitive and social processes for the purpose of realising personal, meaningful and educationally worthwhile learning outcomes (Garrison & Anderson, 2003:29).

Both cognitive and social presence discussed above are closely tied to and supported by teaching presence, described as instructors' ability to project

themselves in online courses (Swan, Garrison & Richardson, 2009:24). Thus, teaching presence is essential in balancing cognitive and social issues consistent with intended educational outcomes (Garrison *et al.,* 2000:24).

There seems to be consensus that teaching presence is a significant contributor to student satisfaction, perceived learning and a sense of community (Garrison, 2011). To add to this notion, Ke (2010:808) suggests that teaching presence can serve as both a catalyst to the development of a community of inquiry and a shaper of student cognitive and social performance. Anderson et al. (2001) conceptualise teaching presence as having three components: instructional design and organisation, facilitating discourse, and direct instruction.

Design and organisation – this component involves setting the curriculum, defining goals and objectives, selecting suitable technology, designing methods for teaching and learning, setting time parameters, determining assessment procedures and tools, defining tutorial resources, and designing individual and collaborative activities (Garrison & Anderson, 2003:77).

Garrison *et al.* (2007:163) add that providing guidelines on how to use the medium effectively is one of the activities of the design and organisation component. This is however a more important guideline for tutors in their operation of VC equipment. Garrison and Arbaugh (2007:163) caution that tutors must be more explicit and transparent regarding these aspects of the online course because the social cues and norms of the traditional classroom are absent. Thus, this instructional management in turn leads to a greater sense of community and higher levels of learning on the part of the students (Shea *et al.,* 2006:57).

Facilitating discourse – this is a critical component for maintaining student interest, engagement and motivation during the course activities (Anderson et al 2001:7).

Therefore, the instructor (tutor) helps students identify areas of agreement and disagreement, seeks to reach an understanding, encourages, acknowledges, and reinforces student contributions, sets the climate for learning, draws in participants, prompts discussion, and assesses the efficacy of the process (Jinks, 2009:266). Thus, the instructor is responsible for keeping the balance in the discourse by encouraging students who are less active in the discussions and curbing the

contributions of overly dominant students (Anderson *et al.,* 2001:58). Interaction and discourse are crucial contributors to higher order learning but not without structure and direction (Garrison, 2011:34).

Direct instruction – This is described as instructors' provision of intellectual and scholarly leadership by sharing with students their subject matter knowledge, and scaffolding learner knowledge to reach a higher level of understanding (Garrison & Arbaugh, 2007:164).

This component looks to the instructor as a subject matter expert, providing intellectual and scholarly leadership through in-depth learning (Sahin, 2013:145). In direct instruction, the tutor presents the content and questions; focuses the discussion on specific issues; summarises the discussions; confirms understanding; diagnoses misconceptions; injects knowledge from diverse sources; and responds to technical concerns (Anderson *et al.,* 2001).

Interactivity is crucial in dealing with the social, cognitive and teaching presences as discussed above. Though they represent psychological constructs that can arise from interaction, Swan et al., (2009) draws parallels between these three presences and interaction types. She suggests that learner-content interaction might be most closely equated with cognitive presence, learner-learner interaction with social presence, and learner-instructor interaction with teaching presence.

2.5.   CONCLUSION

The invention of new technology will never cease, and finding the best practice to teach students via VC technology has yet to be achieved. VC tutors still need to find innovative ways to respond to today's educational challenges; thus, demands of educational accountability are ever increasing and therefore this requires them to look for other alternatives in order to change current teaching and learning activities which are not yielding the desired results.

This chapter presented literature on tutors' experiences in the application of instructional methodologies during VC tutorials, where various methods applicable to VC have been explored. It also touched on how interactivity during tutorials can yield positive results in the facilitation of learning, theoretical perspectives and how

distance education and technology are interdependent on one another for better pedagogical results. In the next chapter, I will outline in detail the methodology used in this research.

CHAPTER 3

RESEARCH METHOD AND DESIGN

3.1. INTRODUCTION

I will begin this chapter by describing research paradigms as inquiry that will inform and guide my research approaches. This chapter will also examine which of the three broad categories of research methodologies, namely qualitative, quantitative or mixed methods, is best suited to answering the research questions posed in this study, and the rationale behind my choice of the approach. I will then explore the research design that I used to structure my central research problem.

The chapter will also focus on the data collection techniques employed, namely individual semi-structured interviews, tutorial observations and focus group interviews. It will finally discuss procedure for data analysis and measures of trustworthiness.

3.2. RESEARCH PARADIGM

It is important to understand various paradigm perspectives for logically conducting and consuming educational research (Hart, Smith, Swars & Smith, 2009), such as epistemology (view of knowing the relationship between the knower and to be known), ontology (view of reality), methodology (view of mode of inquiry) and axiology (view of what is valuable) (Denzin & Lincoln, 2005; Licoln & Guba, 2000).

Weaver and Olson's (2006:460) definition of a paradigm reveals how research could be affected and guided by a certain paradigm. A research paradigm represents the fundamental assumptions and practices that influence how to conduct a research project from the way of shaping and understanding the phenomenon (Creswell, 2007:19).

3.2.1. Ontology

Ontology specifies the nature of reality that is to be studied (Terre Blanche & Durrheim, 1999:6). Willig (2003:13) argues that ontology asks the questions "what is there to know" and "what assumptions can be made about the world". Therefore, in this study, the interpretivist approach allowed me to inquire into the experiences of

tutors with methodologies used when tutoring though VC technology, using subjective experiences of tutors and perceptions of students.

3.2.2. Epistemology

According to Guba and Lincoln (1994:108), the epistemological question is "what is the nature of the relationship between the knower (participant) and would-be knower (inquirer) and what can be known?"

When embarking on this study, as a researcher (inquirer), I wanted to know tutors' experiences and student's perceptions of methodologies applied when tutoring by means of VC technology as well as the nature of social interactivity happening in the process. Terre Blanche and Durrheim (1999:6) refer to this process as "epistemology" because it specifies the nature of the relationship between the researcher and what can be known.

3.2.3. Methodology

There are three dimensions of the paradigm as explained by Terre Blanche and Durrheim (1999:4) which constrain one another, and they are positivist, constructionist and interpretive. Positivism refers to philosophical positions that emphasise empirical data and scientific methods. This tradition holds that the world consists of regularities, and these regularities are detectable, and thus the researcher can infer knowledge about the real world by observing it (Jonathon & Knutsen, 2012). The researcher should be more concerned with general rules than with explaining the particular (Jakobsen, 2013:1).

Constructionism is a theory of knowledge that argues that humans generate knowledge and meaning from an interaction between their experiences and their ideas (Piaget, 1967).As a learning theory, constructivism point out that learning is the process that individuals construct their cognitive structures. "Construction" is a kind of initiative, conscious, and self-organized recognition way. It is the "interaction" between the subject and the object (Jia, 2010:198).

In interpretative theory, researchers believe that reality consists of people's subjective experiences of the external world; thus, they may adopt an inter-subjective epistemology and the ontological belief that reality is socially constructed.

According to Willis (1996), interpretivists are anti-foundationalists who believe there is no single correct route or particular method to knowledge. Walsham (1993) argues that in the interpretive tradition there are no "correct" or "incorrect' theories. Instead, they should be judged according to how "interesting" they are to the researcher as well as those involved in the same areas.

In light of these, three dimensions, and since tutors' experiences and students' perceptions are important, the philosophy adopted in this study is interpretive. Thus, in support of the above notion, researchers who take this stance seek to understand the world they live and work in (Creswell, 2007:18). They develop subjective meanings of the experiences directed to certain objects (Wahyuni, 2012:70).

The understanding of the phenomenon is achieved through the direct interaction between the researcher and the participants (Wahyuni, 2012:70). Furthermore, such researchers tend to rely heavily on the participants' views of the phenomenon under investigation (Creswell, 2007:18).

In the context of this study, I see the world (teaching and learning as it happens in a VC environment) as constructed, interpreted and experienced by tutors and students in their interactions with each other and with the wider social system (Bogdan & Biklen, 2003). According to this paradigm, the nature of inquiry is interpretive and the purpose of inquiry is to understand a particular phenomenon, not to generalise to a population (Farzanfar, 2005:330).

Based on these explanations, I specifically became non-manipulative, unobtrusive and non-controlling in the process of my inquiry (Antwi & Hamza, 2015:219). Since interpretive researchers place strong emphasis on better understanding of the world through first-hand experience, truthful reporting and quotations of actual conversation from insiders perspectives (Merriam, 1998), they employ data gathering methods that are sensitive to context (Neuman, 2003:336). In the following section, the methods are explained.

3.3.   RESEARCH METHODS

Research methods are specific techniques of data collection and analysis, for instance, a qualitative standardised instrument or a qualitative theme analysis of text data (Creswell & Clark, 2007).

Broadly speaking, there are three types of research approaches in social sciences, namely qualitative, quantitative and mixed method approaches (Creswell, 2009:3).

This study employed the qualitative research approach to explore tutors' experiences in detail. In line with Williams (2007:65), who views qualitative research as a holistic approach that involves discovery, I felt this approach best suited to answering the main research question of this study as it was descriptive (Merriam, 1998:6) and explorative in nature. These descriptions are derived from participant's responses.

A qualitative approach allowed me to identify issues from the perspective of my study participants (tutors and students), and to understand the meanings and interpretations that they gave to behaviour, events or objects (Hennink, Hutter & Bailey, 2011:9).

I chose the qualitative approach because it is concerned with understanding of participants beliefs, attitudes, fears and knowledge (Haupt, 2010:13), and it seeks out the "why" and not the "how" of its topic through the analysis of unstructured information.

According to Merriam (2009:13), qualitative researchers are interested in understanding the meaning people have constructed, that is, how people make sense of their world and the experiences they have in the world. To validate the above explanations, Denzin, Lincoln and Giardina (2005:3) emphasise 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.

As a result, in my inquiry, I focused on the interaction between the tutors and students, and between students and students as well as between students and the content during VC tutorials. This assisted in making sense of their experiences from an emic perspective. In order to achieve this emic perspective, I also became

involved and immersed in the study rather than imposing my own framework, which might distort the ideas of participants (Holloway & Wheeler, 2010:8).

Streubert Speziale and Carpenter (2007:17) assert that the researcher's participation in the study adds to the uniqueness of data collection and analysis. However, in the process I "bracketed" (Cresswell, 2013:80) my own experiences in order to understand those of the participants in the study.

Actually, I set aside my own experiences on VC tutorial offerings as much as possible in order to take a fresh perspective on a phenomenon under examination. Bracketing my own knowledge and experience helped to minimise my influence throughout the research process (Chan, Fung & Chien, 2013:6). In defence of qualitative research, Merriam (1985) states that most writers suggest judgment should focus on whether the research is "credible and confirmable" rather than imposing statistical, quantitative ideas of generalisability on qualitative research.

Johnson and Turner (2003:5) and Scott and Usher (2000:3) explicitly enunciate that the choice of what type of research to carry out will depend on the purpose of research, the research questions being explored and the kind of data required. It is out of these views that I chose a qualitative approach as a method of research in this study. The following section explains the research design used in this study.

3.4. RESEARCH DESIGN

According to Kerlinger and Pedhazur (cited in Blaikie, 2010:37), research design refers to "the plan, structure, and strategy of investigation conceived so as to obtain answers to research questions and to control variance". In the same vein, Mouton (1996:175) highlights that the research design serves to "plan, structure and execute" the research to maximise the validity of the findings. The purpose of the research design is to determine the research methodology (Cohen, Manion & Morrison, 2000).

The aim is to provide credible answers to questions to the extent to which findings approximate reality and are judged to be trustworthy and reasonable (McMillan & Schumacher, 2001).

3.4.1. Phenomenological design

This study is informed by a qualitative phenomenological design and it produced a large amount of data that had to be analysed. The aim of phenomenology is an understanding of the "constructs" or ideas people use in everyday life to make sense of their world and uncovering meanings contained within conversation or text (Ritchie, Lewis, Nicholls & Ormston, 2014:18). According to Lester (1999:1), phenomenological methods are particularly effective in bringing to the fore the experiences and perceptions of individuals from their own perspectives.

My understanding of the "lived experiences" marks phenomenology as a philosophy, as well as a method and the procedure involved in studying a small number of participants through extensive and prolonged engagement to develop patterns and relationships of meaning (Moustakas, 1994:11). In the sections that follow, sampling, data collection techniques as well as data analyses employed in this study are discussed.

3.4.2. Population and sampling

In this section, the population and the sample of the study are described. Initially a brief explanation of the theory about the population and sampling is provided. This is followed by an explanation of who comprised the population of this study and how the sample was selected.

3.4.2.1. Population

As Polit and Beck (2004:233) put it clearly that research population is an entire set of individuals who share some similar characteristics, my target population, in the context of this study, was VC tutors and students who exploit the VC medium for teaching and learning. I felt this would be a target population as these participants share similar characteristics, which is that of exploiting VC for teaching and learning in specific UNISA learning centres with videoconference facilities.

3.4.2.2. Sampling

Sampling involves the selection of people and the research site that can best provide the required data (Creswell, 2003). In the selection, Creswell (2003) suggests that a sampling procedure should be in place that will help determine the number of

individuals needed to provide the data. The kind of sampling used in research is the most important feature that distinguishes between qualitative and quantitative inquiry (Sandelowski, 2000:337).

In this study, I used purposeful sampling to select participants (tutors and students) because of their exposure to or experience of the phenomenon under study (Ryan *et al.,* 2007:741). I concur with Cohen *et al.* (2000:103) that in purposive sampling researchers select the cases to be included in the sample on the basis of their judgment of their typicality. I searched for "information-rich key informants" (VC tutors and students), groups, places (VC venues) or events to study (McMillan & Schumacher, 2001:401).

Furthermore, for the purpose of this study I identified eight participants (VC tutors) from UNISA main campus and conducted individual semi-structured interviews. I also identified six to eight participants (VC students) from four UNISA learning centres (B, N, D and P) and conducted focus group interviews.

As explained by Polit and Beck (2004:67), phenomenologists often rely on small sample sizes consisting of ten or fewer informants. I selected these samples in order to obtain diverse views and/or opinions on the subject of distance education and VC tutorials. In the following section, the data collection techniques are discussed.

3.4.3. Data collection techniques

In this study, I followed data gathering procedures as described by De Vos *et al.* (1998:100). I interacted with VC tutors and students in order to listen to what they had to say and observe how they do things (Bogdan, 2006:25).

Given the qualitative nature of this study, I applied the three different data collection strategies, namely individual semi-structured interviews, tutorial observations and focus group interviews, to collect rich and descriptive data. These strategies are shown in the following data collection matrix table (Table 3.1), as a way to obtain a complete picture of every participant's interactions, and the data collection instruments used.

Table 3.1: Data collection matrix

Research question(s)	Instruments		
	Semi-Structured Interviews	Observation	Focus Group
1. What are instructional methodologies pertinent to videoconferencing tutorials?	√	√	
2. What are factors affecting tutors' ability to keep students engaged and participate in a productive dialogue during VC tutorials?	√	√	
3. What is the nature of social interaction between students and tutors and between students and peers?		√	√
4. What challenges tutors when monitoring content-based activities through VC?	√		√

3.4.3.1. Individual semi-structured interviews

I used semi-structured interviews to gather information that I could not observe directly, and to gain a detailed picture of tutors' beliefs about, or perceptions on, interactivity enforcement during VC tutorial sessions (Smith, Harre & Van Langenhowen, 1995:9). In this study, I interacted with eight VC tutors on an individual basis, as Mason (2010:62) emphasises that a common feature of qualitative interviews is the interactional exchange of dialogue.

For the purpose of this study, I used a set of predetermined questions (see Appendix F) in order to guide the interview and to allow participants (Tutors) a role in the proceedings.

All eight participants were asked the same set of questions and these questions were asked in the same sequence on each occasion. In these instances, I allowed a considerable flexibility in scope and depth in all interactions, as cautioned by Morse (1997:189), who advises that individual semi-structured interviews must be defined

as those organised around areas of particular interest, while still allowing considerable flexibility in scope and depth.

A set of basic rules was observed during interviews (Harrell & Bradley, 2009:54). As part of those rules, I avoided long explanations of the study and was careful not to deviate from its main purpose. I pleaded with all the participants to switch off their cell phones or refrain from making a noise since that could distract participants' attention.

All interviews were conducted on a one-to-one basis as this eliminated the risk that others could suggest an answer on behalf of another participant, or agree or disagree with the answers that were provided (Harrell & Bradley, 2009). Interview questions were kept simple and straightforward and I did not offer interpretations of the meaning to the questions. With the consent and permission of participants, I used an audio tape to record the interviews proceedings.

3.4.3.2. Tutorial observation

This is a second strategy that I used to collect data. This strategy was used to systematically note and record events, behaviours and objects in a VC venue chosen for study (Marshall & Rossman, 1999:107). In this study, I endeavoured to verify what tutors and students said about themselves and their actions (Cohen *et al.*, 2000:305).

With the permission of a VC manager and consent (Harrell & Bradley, 2009) from tutors, I spent a period of time with tutors (four VC tutorial sessions) at UNISA's main campus of Pretoria, where the connecting VC facility is situated, and where the VC tutors were conducting tutorials. During the process of tutorials at this venue in Pretoria, I observed tutors' and students' behaviour as they interacted with one another. This assisted me in generating ideas about why certain behaviour occurs during interactivity (Guthrie, Vallée, Frédéric & Gaëlle, 2010:1). For example, I generated the idea on why students sleep, chat on their cell phones, have irrelevant conversations or appear not interested in the subject matter during tutorial sessions.

As part of an observation tour, I made additional once-off visits to the four UNISA learning centres (Learning Centres B, D, N and P). I made these visits to the centres

in order to observe how students react towards tutors' facilitation methods and how they engage a tutor at the far end. These visits, however, assisted me in gaining first-hand experience of the phenomenon in the field. These visits at the learning centres were made concurrently with my focus group interview discussions.

Before my visits to all these centres, participants were informed that I would observe the lessons offered via VC technology. Further, I requested the Regional Academic Coordinators (RAC) of each regional learning centre to provide me with the tutorial schedule or timetable in order to see the number of sessions and time allocated for them.

I made an appointment with the tutors concerned for the lesson observation, that is, I arranged the day and time when the tutorial would take place. Furthermore, I ensured that the conditions under which data was gathered were properly identified and I took comprehensive field notes during observation of participants.

3.4.3.3. Focus group interviews

Focus group interviews were the third strategy used for collecting data in this study. I used this strategy to obtain a better understanding of a problem or an assessment of a problem, concern, or idea by interviewing a purposefully sampled group of people rather than each person individually (McMillan & Schumacher, 2001:455). Focus group interviews in this study were used to obtain large and rich amounts of information in the participants' own words, because this rich description includes their personal opinions and their collective experiences that are articulated together during a focus group (Ryan, et al., 2014:15).

Groups in this type of interview were typically six to eight students with similar learning experience, who participated in the interview for one to two hours (Patton, 2001:385). These groups were located in different areas; i.e. UNISA's learning centres (B, D, N and P). This number of students (six to eight) was adequate to stimulate discussion but small enough to capture relevant data.

I met with these students in person at their respective regional learning centres mentioned above, and conducted interviews in an unbiased manner. I introduced the topic in a way that engenders active, lively participation (Kelly, 2006:389).

As defined by Patton (2001:386) and De Vos *et al.* (2004:300), I then encouraged interaction among participants in order to enhance data quality, as participants tend to provide checks and balances on each other, which weeds out false or extreme views, unlike a series of one-on-one interviews.

In this study, I used audiotape to record responses of participants and thereafter transcribed such responses (De Vos *et al.*, 1998:321). I strived for verbatim transcription of recorded interviews as it provided me with the best database for analysis (Merriam, 1998:88). All the dynamics during interviews were captured, for example, when a student was dominating the discussion, it was recorded as such. The section that follows describes how the data was analysed.

3.4.4. Data analysis

In this section, the methods used to analyse the data from the different instruments are described. I applied thematic analysis as a method to identify and report patterns (themes) within a collected set of interview data, which I collected through individual semi-structured interviews, tutorial observation techniques and focus group interviews with students from the sampled UNISA learning centres (Braun & Clarke, 2006:101). In this study, I used six phases of data analysis as identified by Marshall and Rossman (1999:152). They are:

3.4.4.1. Managing (organising) data

For the purpose of this study, I organised each participant's responses separately and later compared them. I then organised and converted files according to various units, example, word, sentence or an entire story, as emphasised by Creswell (1992:143). I then put data gathered in different labelled files.

By so doing, I wanted to gain the opportunity to be immersed in data and this eventually generated emergent insight (Ramokgopa, 2013:58). Patton (2001:441) advises that a researcher should put one master copy away somewhere to secure for safekeeping, and I did exactly that.

3.4.4.2. Generating categories, themes and patterns

In this study, I divided the data that I had collected into various categories and groups to show similarities and differences for easy identification of patterns

(De Vos, 2006:338). I identified the salient grounded categories of meaning held by participants in the settings. I went through written notes that I took during interviews, compared them from different groups and analysed them to establish any emerging themes. I also listened to the recorded conversations and transcribed them in order to compare such recordings with the written notes. I then identified themes. Each identified pattern or theme was allocated a name and was placed into a respective sub-theme and category.

I reviewed the categorised patterns several times. After a series of reviews of these patterns, a report that enabled interpretation of the findings was generated.

In reviewing themes, I was also motivated by the view that good qualitative research needs to be able to draw interpretations and be consistent with the data collected (Alhojailan, 2012:11). This enabled me to gain an insight into tutors' experiences of instructional methodology applications during VC tutorials and students' perceptions on the use of VC technology in tutorials.

3.4.4.3. Coding the data

After compiling and processing all the information, I reduced the huge amount of data to manageable and understandable text (Welman, Kruger & Mitchell, 2010:213). I defined a code for a segment of data and labelled the segment of data with the same code (Saldana, 2013:22).

As coding may take several forms, such as the abbreviation of key words, coloured dots, numbers or any form chosen by the researcher, as such, I used abbreviation of key words as a coding form, and identified similarities and differences in the information supplied by participants for easy interpretation (Coffey & Atkinson, 1996:27).

- *Test of the emergent understanding*

In this phase, the data was evaluated for its usefulness and centrality; thus, how useful the data is in illuminating the question being explored and how central it is to the story that is unfolding about the phenomenon that is being studied. As a researcher, I constantly asked myself questions like: Did the respondent understand

the question, and did I understand the response from the participant? This helped me to identify words that were difficult to understand.

- *Searching for alternative explanations*

Some of the words or responses might not be easy to understand. In this case, I initiated alternative ways of interpreting and understanding responses.

- *Writing the report*

In this stage, I presented data, and packaged what was found in the text data analysis. Thus, after all the endeavours in trying to make sense of the recorded materials, I compiled and wrote the report on the findings and conclusions of the study. In the following section, I will focus on the measures to ensure trustworthiness as a way to support the argument that the inquiry's findings are "worth paying attention to" (Lincoln & Guba, 1985:290). In the following section, triangulation is explained.

3.4.5. Triangulation

The purpose of triangulation is to obtain complementary data on the same topic through different methods (Cresswell & Piano Clark, 2007). The aim is to ensure that the participants represent all aspects and domains of the problem being considered. (Bowden & Williams, 2013:1133). In other words, the purpose of triangulation is to ensure convergent validity or corroborate data (Sandelowski, 2000). It generally involves the concurrent, but separate, collection and analysis of data where the data sets are brought together in the interpretation (Tashakkori & Teddlie, 1998). In this study, triangulation was used to check and establish validity (Kolb, 2012:86).

I triangulated data collection strategies, namely semi-structured interviews, focus group interviews and tutorial observation in this study to strengthen my study and to ensure completeness and confirmation of the findings (Streubert & Carpenter, 1999:351). As a result, through this triangulation completeness of my findings provided breadth and depth of the research offering, and a more accurate picture of the phenomenon. The following section looks into measures of trustworthiness.

3.4.6. Measures to ensure trustworthiness

In line with Lincoln and Guba (in Johnson & Turner, 2003:78), who refer to the term "trustworthiness" as the way in which the inquirer is able to persuade the audience that the findings in the study are worth paying attention to and that the research is of high quality, I endeavoured to ensure that this study is of a high quality to all the participants. In addition, De Vos (1998:348) affirms that the verifiability of qualitative research is accurately assessed according to its trustworthiness.

In order to achieve this goal, I applied Guba's (1981) model of trustworthiness of qualitative research as explained by De Vos *et al.* (1998:348-350). This includes truth-value (using the strategy of credibility), consistency (using the strategy of dependency), and applicability (using the strategy of transferability).

3.4.6.1. Truth-value

In this model, I ensured that the data that I collected was rich, believable, and that it reflects participants' knowledge (Myburgh & Poggepoel, 2007:65). I used credibility strategy to assess truth-value in this study, as Pitney and Parker (2009:63) maintain that credibility as applied in qualitative research relates to the extent to which the research findings are believable.

In other words, in order to ensure credibility of this study there should be supportive evidence in the form of data for the accuracy of the research findings (Marishane, 2013:33). In this respect, I focused on establishing a match between the constructed realities of respondents and realities represented by me as a researcher.

It was also important for me as a researcher to check on the interpretations and test analytical categories with the participants. This is known as member checking, through which, according to Zorhabi (2013:258), the results and interpretations are taken back to the participants in order to be confirmed and validated. Therefore, I have handed over the results and interpretations of interviews to the interviewees in order to confirm the content of what they have stated during the interview encounter. In this way the plausibility and truthfulness of the information was recognized and supported (Zorhabi, 2013).

In this study, I endeavoured to share a list of bulleted findings, major themes and sub-themes with the videoconference tutors based in UNISA Pretoria and students in sampled UNISA learning centres (B, D, N and P), and this gave me an opportunity to not only validate my findings, but also elicit further clarification of the results.

3.4.6.2. Consistency

From the data collected through interviews and observation, I considered the essence of consistency, that is, whether the findings would be consistent if the inquiry were replicated with the same participants or in a similar context. In this model, I used dependability as a strategy to assess this criterion.

In order to enhance dependability, I therefore endeavoured to alter the research design as new findings emerge during data collection (Altheide & Johnson, 1994:333). Through this dependability, I ensured that the way in which a research is carried out needs to be consistent across time, researchers, and analysis techniques (www.universlteacher.com).

3.4.6.3. Applicability

From a qualitative research point of view, applicability refers to the degree to which the findings can be applied to other contexts and settings or with other groups; it is the ability to generalise from the findings to larger populations (Krefting, 1991:216).

Applicability further refers to the degree to which the findings can be applied to different contexts and groups (Sliep *et al.,* 2001:69). It is the ability to generalise from the findings to larger populations, by using the strategy of transferability (Klopper & Knobloch, 2008:8). In the present study, transferability was ensured through the process of member checks.

Transferability refers to the probability that the study findings have meaning to others in similar situations. Transferability is also called "fittingness", for it determines whether the findings fit in or are transferable to similar situations (Streubert Speziale & Carpenter, 2007:39). The potential user, not the researcher, determines whether or not the findings are transferable (Streubert Speziale & Carpenter, 2007:29). It is the extent to which the findings from the data can be transferred to other settings.

3.5. CONCLUSION

In this chapter, the study philosophy (paradigm) was described, indicating that it would be interpretive. This was followed by a description of the research methodology, explaining that a qualitative research method was used. The research methodology was followed by a comprehensive description of the research design.

In the design it was explained that a phenomenological design was chosen to bring to the fore the experiences and perceptions of tutors and students from their own perspectives. Furthermore, a number of issues were covered in the research design. For instance, the population and sample of the study were described; data collection methods including the different instruments were explained. Issues of trustworthiness were also addressed. Following the data collection, an explanation of how data was analysed was provided. Chapter 4 will present the data analysis and findings of the study.

CHAPTER 4
FINDINGS AND DISCUSIONS

4.1.   INTRODUCTION

This chapter focuses on analyses and findings based on qualitative data collected. In presenting the findings, the following sequence is followed:

Individual semi-structured interviews (with videoconference tutors, who, for ethical reasons, are identified as participant T1 through to participant T8, where the letter T represents a tutor and 1 to 8 differentiate tutors according to numbers).

Observation of tutorials (conducted at the Regional Learning Centres B, D, N, and P, where B stand for Bloemfontein, D stand for Durban, N for Nelspruit and P stand for Port Elizabeth).

Focus group discussions (with students who were identified based on the regional learning centres in which they attend VC tutorials as BS, DS, NS and PS respectively, where the first letter represents the regional learning centre and the second letter represents the student).

The next section presents the research themes as generated from the findings of individual semi-structured interviews.

4.2.   FINDINGS OF INDIVIDUAL SEMI-STRUCTURED INTERVIEWS

In this section, reports on the findings of the data collected from the individual semi-structured interviews conducted with tutors at UNISA's main campus in Pretoria, are highlighted. The individual semi-structured interviews were conducted with eight participants as discussed in Chapter 3 (see section 3.4.2.1). The purpose was to explore tutors' views concerning their application of instructional methodologies during VC tutorials and their interaction with students via the VC technology. Pre-determined questions were asked during the semi-structured interviews (see Appendix F).

These individual semi-structured interviews revealed the following six key themes: teaching and learning methods during VC presentation; monitoring of tutorial

activities; importance of tutor qualities in VC; feedback on tutorial activities; tutors' technical skills; and tutors' mixed feelings about interaction with students.

4.2.1. THEME 1: Teaching and learning methods during VC presentations

The first emerging theme was generated around the main aspect of teaching and learning methods. In this theme, the majority of participants (tutors) indicated experiencing some challenges when applying various teaching methodologies during tutorial sessions, for example, lack of technical skills in operating the technology (see section 4.2.5). Participants also indicated concerns regarding students' lack of proper learning styles that could assist them to understand concepts during VC presentations. The following sub-themes emerged from this theme: teaching methods and learning styles.

The majority of participants (tutors) cited lack of skills in applying various methods that could assist students to learn effectively during VC tutorials. It emerged from the data that participants are unable to integrate the VC technology tool effectively with relevant teaching methodologies to provide new perspectives for understanding a phenomenon. The following response illustrates lack of skills in integrating VC technology with various active teaching methodologies:

> *To me it's [more] difficult to use active teaching methods when tutoring via VC than via face-to-face. How can you do it? You are bound to sit down and face a camera. I am always faced with large groups of students from four different VC sites; as a result, I have no other choice but to resort to Lecturing Method because I cannot handle these groups all by myself. (T5)*

It was evident from various participants' responses that they chose various specific teaching methods over the VC medium presumably because of its influences, such as the nature of the technology (for example, the fact that the VC restricts tutor movement), the size of the VC venue (overcrowded), and lack of skills and training on their part as tutors.

Because of these influences, it was revealed that most participants preferred teaching methodologies such as the lecture method, question and answer methods and, to a lesser degree, group work strategies.

Adherence to inactive methods of teaching such as the lecture method by most participants featured in this study. The findings revealed that participants under study resort to this method when using VC for tutorials because they have either not been trained to apply active methods like small group discussion or they are simply unable to integrate active methods with VC technology. This means that participants were somehow frustrated by the technology. This is the reason why they stick to the lecture method throughout their lesson. The frustration became more severe due to the overcrowded classes, especially when the VC was multi-connected.

To reduce their frustration levels, participants preferred lecturing methods. For example, one of the participants (T6) put it clearly:

> *I always use Lecturing method. For me tutoring is tutoring, I always read examples from the study guide and my students understand. In anyway, it is difficult to apply active methods through this VC.*

Besides some participants' inability to apply active teaching methods in tutorial sessions, the findings further revealed that there were a few participants who showed enthusiasm in applying active methods such as question and answer (Q&A) and group work but they still experienced challenges in integrating these methods with VC technology.

Some participants confirmed that they use the Q&A method more frequently. It is believed that Q&A method gives the student an opportunity to reflect his or her inquiries and needs for further information (Malawi Institute of Education, 2004:4). At the same time, by soliciting answers to key questions the tutor gains some insight into the class's progress. One of the participants advocates this method in this way:

> *Through active involvement, all my students get an opportunity to answer the question when I ask them; as a result, I know they understand concepts, and I can see the progress in the class in a positive way. (T3).*

It was more apparent in the data that participants' questions were meant to arouse students' interest and stimulate their curiosity to learn further. This is consistent with Jacobs, Vakalisa and Gawe (2004:186), who agree that, through questions, learners' attention can be directed to what is to be presented to them.

This means that through questioning learners unlearn what is not relevant in terms of content and learn what is useful.

Moreover, Jacobs *et al.* (20004:187) corroborate that "a questioning technique is the constructive manner in which the teacher phrases a question and reacts to learner responses in order to arouse learners' curiosity". In addition to the question and answer method, another active teaching method used during VC tutorials was group work.

In this regard, positive tutoring experiences expressed by a Financial Accounting tutor (T6) was her successful application of group work as a way of motivating her students through active learning to develop key critical thinking. In the semi-structured interviews, she indicated that she always invites her students to participate in group discussions and prompts them to think that it is their (students) class rather than her (tutor) class. As a result, they feel free to express their opinions. Such identification with the teaching-learning experience may well produce additional motivation and increase the students' learning levels.

Although it is challenging to integrate this method with VC technology, the participant indicated that the group work was helpful for her in this way:

> *When I pair students from different regions as groups, I think I can hear many students' opinion, and this can bring the whole class closer to solutions, but it's difficult to do this through VC technology. (T6).*

Despite the positive findings as discussed above, other participants reported the opposite and indicated that students always show the feeling of animosity towards each other when they have to discuss issues, and this happens either because they do not know each other or they are not used to getting along in the sessions. To emphasise this notion, another participant mentioned that:

> *I prefer to group them together in small groups, but when I try to pair them into smaller groups, they normally show a feeling of antipathy towards each other, I suspect they never knew each other enough as it was my first class. (T7)*

It is assumed that when students do not know each other, they may show lack of cooperation at first. It therefore requires the skills of the tutor to develop rapport amongst his or her students by introducing them to each other in the beginning of the lesson. Only when they know each other do they dispel the feeling of antipathy, and start working together.

With regard to cooperative learning, some participants reported that their students hesitated to work together cooperatively and preferred to work in silos. For example, one participant explained the consequences of working in silos in this way:

My students reluctantly work in small groups, and this does not encourage togetherness amongst them. I think that if my students can mutually support and help each other, they will bring much more solutions to many problems. (T5)

The above response from participant T5 shows that at times tutors engage students who reluctantly work cooperatively with one another since cooperative learning requires learners to be both physically and mentally engaged; it makes them to construct knowledge (Rapudi, 2009:10). In support of the above view, another participant showed concern this way:

My students don't talk when I group them. But nevertheless, I encourage them to form small groups to work on various activities and that's how I prefer them to learn. (T2)

From the above response, it is clear that students do not engage one another during VC tutorial sessions. Therefore, tutors have the academic responsibility of probing students' understanding in their teaching by encouraging them to study in groups and talk.

This is in agreement with Isik and Tarim's (2009:471) arguments when they mention that cooperative learning groups offer "mutual academic support" among the learners, "guide them to socialize and help each other" and "increase achievement levels".

Dooley (2008:1) said that collaborative learning requires working together towards a common goal. This type of learning has been called by various names: cooperative learning, collaborative learning, collective learning, learning communities, peer teaching, or team learning. What they have in common is that they all incorporate group work.

Dooley (2008:1) further emphasises that collaborative learning should entail the whole process of learning, which may include students teaching one another, students teaching the teacher and, of course, the teacher teaching the students too.

This is in agreement with the view of Totten, Sills, Digby and Russ (1991:17), who mention that, by engaging in discussion and taking responsibility for their learning, students are encouraged to become critical thinkers. Many researchers have reported that students working in small groups tend to learn more of what is being taught. Moreover, they retain the information longer and appear more satisfied with their classes (Totten *et al.,* 1991).

In essence, using a single method in VC is not enough. Tutors should use a variety of teaching approaches and techniques in their sessions (Ruto, & Ndaloh, 2013:1). Thus, as the tutor combines teaching methods, they will naturally flow into one another, all within the same lesson, and excellent tutor will develop the skills to make the process seem less confusing to the students (Ruto & Ndaloh, 2013).

In light of the above, I argue that in the VC setting it is important for a tutor to develop group facilitation skills to manage interaction, time and process effectively, paying attention to both task and group interaction functions (Wehrli & Nyquist, 2003), and to consider combining various methods for effective learning. In addition to the challenges on group work, there were also challenges regarding learning styles.

It was discovered from the data that participants (tutors) indicated observation of various learning styles shown by students when working on activities. Participants further highlighted limited motivation skills on their part as tutors. They wanted to make sure that students discover facts and relationships for themselves. It seems that participants are limited, because of technology, in motivating students to control

their own learning process at the remote site. One participant puts it clearly and states that:

> *My students cannot take control of their own learning processes when they are at the far end, I think they need an assistance of someone to monitor and motivate them because it's difficult for me to do so while I am in this side. (T8)*

This finding would mean that student's activities would always need monitoring, so that a teacher can guide and give them instant feedback accordingly. When students are distant, as in the case of VC tutorials, the challenge is that they might concentrate on their own activities that might not be related to content under discussion, which could lead to them being unable to control their own learning.

This finding supports Moore's (1993) argument that students' inability to control their own learning hinders their 'autonomy', which leads to transactional distance. This transactional distance, according to Moore (1993), means that the students cannot discover solutions to problems on their own, nor do they work independently, but they rather have to depend on the support of a tutor who is distant from them. These students will have to rely heavily on the tutor, denoting less autonomy for the student.

It was also discovered that many students prefer note taking as their learning style. Participants further indicated that, in most sessions, students showed no understanding of what the tutor was saying, because they repeatedly asked clarification from the tutor while at the same time writing down notes. One of the participants reports on this notion and states:

> *As I am busy facilitating this side, I see students taking notes in the far ends. I could see that they do not understand what I am teaching because they keep on asking questions on one aspect of the content. I think listening skill is as important as taking notes during sessions. Therefore my students must be able to multi-task during facilitation of learning. (T2)*

This response implies that as much as notes are important for reference when students revise their work in preparation for examinations, students also need to

develop listening skills. This could help them to comprehend important facts of the content.

In corroboration with this finding, Kimberly and Crosling (2012:10) points out that taking good lecture notes depends on sharpened listening skills. Therefore, taking notes from lectures requires that the student understands what the lecturer is saying and can distinguish between important and less important information (Adamson, 1990:70). To improve note taking, Arnone (2003) suggests that students need to practice in developing the art of listening and understanding ideas. Thus, note taking can encourage students to think about the presentation material (Kimberly & Crosling 2012:10).

4.2.2. THEME 2: Monitoring of tutorial activities

Regarding monitoring of tutorial activities during VC sessions, the findings showed that there was no common and effective strategy for monitoring of tutorial activities in place during VC sessions. It was evident in this study that almost all participants found it difficult to monitor activities at a distance when using VC technology in tutorials. The challenge is that when students are working on classroom activities (example, classwork, assignments or projects), they might not know if they are on track or not, hence the need for a close monitoring by the tutor. The challenges of monitoring are illustrated in the following excerpts:

> *Although monitoring is important in teaching and learning, it is difficult to monitor classroom activities through VC technology, especially when the VC is multi-connection. (T1)*

Participant T3 added that:

> *Monitoring activities through this technology (VC) is a challenge, I wish UNISA could hire 'assistant tutors' who can monitor the activities of students in the far end site, just because one cannot see what is really happening there.*

In support of the above response, another participant said that:

> *Distance is a problem for monitoring. I can't, it's difficult to monitor activities...how do you do that when students are as far as in Cape Town? I think someone should assist in monitoring there. (T4)*

Another participant boldly showed unwillingness to monitor activities and said:

> *I don't do it; it's a difficult task in a VC setup to monitor. I can only do it in a face-to-face…that's all. (T5)*

The challenge is exacerbated when the VC is multi-connected, thus it becomes more challenging for a tutor to monitor activities effectively in all these connected sites. It is important to note that monitoring is an integral part of VC tutorials and therefore it should be integrated into teaching and learning.

This finding is in agreement with Bush, Coleman and Si (2008:191), who emphasise that monitoring should be an ongoing process, undertaken to establish whether teaching and learning are taking place in a satisfactory manner. Tan and Zhou (2011:285) add that teachers should always monitor the learning process and then discover, support, assist and guide the students who have problems. The impracticality might be due to the nature of VC technology, where a tutor might be unable to see closely what is discussed at the farthest end, and the distance within which the discussions take place.

Otherwise, assistant tutors based in connecting sites would have to be employed to assist with, among others, monitoring of activities, while a lead tutor would be tutoring at the main VC venue, although this would have monetary implications and additional workload on the part of the institution.

In support of this view, Mason and Davis (2000:07) suggest that a teaching partner is ideal in this situation. They further indicate that teaching partners play a crucial role in VC because they set the tone in the far site classroom, keep students focused and address any necessary disciplinary issues.

According to Mason and Davis (2000), teaching partners coordinate with the lead tutor to prepare materials and students for the class. Furthermore, they must also understand the lesson's goal, activities and pace and communicate with the lead

tutor when technical difficulties are experienced or when students cannot follow the lesson.

4.2.3. THEME 3: Importance of tutor qualities in videoconferencing

With regard to qualities of tutors in videoconferencing (VC), the findings showed that participants were not aware of the qualities they should possess to ensure effective teaching and learning during VC tutorial sessions.

A few participants' (T5, T6, T7 and T8) views were that: good tutors should be accommodative and should have a thorough knowledge of the subjects they teach. Thus, three sub-themes emerged from this theme: accommodating through a sense of humour, tutor dedication, and content knowledge.

As far as accommodating is concerned, one of the participants (T5) cited that a good tutor is the one who uses humour as a tool to motivate students and make a classroom an interesting environment for learning, thereby accommodating all kinds of students. This would mean that a teacher who possesses a good sense of humour makes his or her learners feel free to interact, they feel free to ask as many questions as possible, and socially engage with him or her. The above participant's (T5) response further implies that by showing a sense of humour, and by using various effective instructional methodologies, a tutor could accommodate students' diversity, which includes how they learn, their different personalities, different backgrounds and their culture.

This finding is in agreement with Cornell University's document on diversity (2014:1), which emphasises that incorporating students' diversity involves designing a course with varied course material, instructional methodologies and learning activities that will accommodate a diverse group of students with a range of learning styles, abilities, experiences and culture. When prepared properly, the course materials will accommodate different rates of learning and different learning styles (Franzoni & Assar, 2009:20). In the context of this study, accommodating would refer to adjusting to student's needs, preferred learning styles and student's views to ensure interactivity (www.yourdictionary.com/accommodate).

Dedication is another set of tutor qualities that can ensure students' success. Evidence from the data shows that most tutors are not dedicated to their academic work as VC tutors. Some participants reported that their colleagues (fellow tutors) have a tendency of absconding from VC classes and this frustrates students who come to the VC venue only to find that a tutor has not turned up. The situation becomes more severe when these students, who are without a tutor, are forced to join their already overcrowded class, which makes learning difficult to maintain.

To give a brief explanation, one participant identified devotion as an important element of a good tutor, saying:

> *I think a tutor must be communicative and dedicated in offering tutorials…eeh not money driven, I mean some of us don't pitch up for tutorials hey. (T7)*

The above participant's response indicates that tutors must be dedicated to their work and should not emphasise money. The response further implies that an undedicated tutor is characterised by frequent absence, unpreparedness and lack of content knowledge, and this should be discouraged at all costs for the sake of quality teaching and learning. The study by Todd (2015:1) shows that actively engaged and devoted teachers are those who know the scope of their jobs and constantly look for new and better ways to meet their goals. Todd (2015:1) further indicates that teachers who are not engaged may be satisfied with their jobs, but are not emotionally connected to their workplace and are unlikely to devote extra effort to the classroom.

As tutors dedicate themselves to their work, their dedication generates 'affective tutoring', which is an important element of teaching and learning. Affective tutoring is a teaching method that aims at helping students to become aware of their own and other people's feelings, to feel good about themselves, to acquire social skills, to become aware of their values and their attitudes via constructive educational activities, to learn how to express their feelings appropriately in the presence of other people, and how to respond to the feelings of others (Weeks, 2000:379). When the actual aims of affective tutoring have been met, it is expected that the overall aim, namely the enhancement of academic performance, will have been met as well (Weeks, 2000:380).

Content knowledge (CK), on the other hand, raised mixed perceptions from the participants.

While some participants indicated that they had thorough knowledge of their subjects, for example T6, some participants showed a lack of content knowledge in their subjects and therefore put blame on the lack of training when they were employed.

For example, T5 responded that tutors need to be given thorough training in the content of the module(s) they are appointed to offer. This response further suggests that if training on the subject content is conducted, tutors' content knowledge will be enhanced and thereby ensure quality teaching based on content expertise.

Another participant, who indicated that she had a thorough content knowledge in the module: English, commented as follows:

> *I am responsible for tutoring ENN103F (English for academic purposes)…I know my students always struggle with business letter writing. For example, I normally present them with a template of a letter, and they can figure out confidently how to write it. So yea… I think in my opinion, a good tutor is the one who will be able to figure out why the student is having a hard time on the subject. (T6)*

From the above response, it is apparent that participant T6 possesses thorough knowledge of her subject content. Her response further implies that demonstrating knowledge on the subject one is teaching would normally give students confidence and trust in the tutor and consequently they could achieve better results.

However, it is evident that some participants do not have a good understanding of the content that they teach and that they do not know how to explain that content in a manner that their students could understand. A participant who vehemently agreed on his lack of content knowledge put it this way:

> *I am responsible for the module, web design (ICT 1513) for the first year level. As a tutor, I think the curriculum for this module is bound to change year after year due to the fact that technology is never static. And as a result I am*

always left behind with old knowledge of the subject. Consequently, I sometimes struggle with recent terminologies in the subject. I think I need training for new knowledge. (T8)

As far as the above response is concerned, it is apparent that we are living in an ever-changing world that is characterised by rapid knowledge and technological development. Tutors who do not upgrade their qualifications will always lack new content knowledge and this will affect students' achievement.

The above response from respondent T8 also suggests the need for continuous training on the content for tutors to acquire knowledge of concepts and theories and to transfer such knowledge to students.

In the context of this study, content knowledge refers to the body of information that the tutor should have and which students are expected to learn in a given subject or content area. In line with the above findings, Shulman (1986:13) notes that someone who assumes the role of a teacher must first demonstrate knowledge of their subject matter before being able to help learners to learn with understanding.

This finding is further in agreement with Shulman's (1986:13) argument that to teach all students according to today's standards, teachers need to understand subject matter deeply and flexibly so that they can help students create useful cognitive maps, relate one idea to another, and address misconceptions. Content knowledge is the knowledge in which teachers look into 'what', about the subject matter (Shulman, 1986).

As Shulman (1986) notes, this knowledge would include knowledge of concepts, theories, ideas, organisational frameworks, knowledge of evidence and proof, as well as established practices and approaches toward developing such knowledge (Koehler & Mishra, 2009:66). Thus, the greater the grasp of the content a teacher has, the more open he/she is to innovative teaching approaches (Kriek & Grayson, 2009:3).

4.2.4. THEME 4: Feedback on activities

The findings pertaining to feedback on activities revealed the following two sub-themes: use of VC to provide feedback and risks factors when giving feedback.

With regard to the use of VC for providing feedback, data revealed that while some participants provided positive feedback regarding the use of VC, others experienced challenges due to some technical issues relating to VC connectivity and limited interaction. A participant who found the VC technology beneficial in giving meaningful and maximum feedback responded this way:

> *One thing that makes me happy about this VC is that after students have worked on their activities, I can give them feedback instantly, just like in the face-to-face set up. This helps them to interact with one another even further. (T7)*

The above comment emphasises the fact that for the feedback to be effective, it has to be timely, and the VC technology can assist in providing prompt feedback because of its interactive nature. Segoe (2012:112) agrees with this notion when he cautions that the delay in providing learner feedback diminishes its value for learning.

Another participant indicated similar response regarding feedback through VC technology and emphasised that:

> *Feedback through VC helps my students to pinpoint through dialogue with me on exactly what areas need to be corrected instantly, what is hard to understand, which areas they did well on, and which areas could be improved. (T8)*

This response implies that corrective feedback is important because it enables students to realise their shortcomings and to determine an area of improvement instantly. Students need not wait to receive comments on their activities during VC tutorials as they can pinpoint instantly, whilst in the VC connection, the area that needs correction.

In contrast, one of the participants showed that time for him to give feedback is insufficient because the VC session is only two hours, and that is too little for him to facilitate learning meaningfully. Thus, tutoring, grouping students for discussion, and giving feedback within two hours might be constraining.

He indicated that he could not maintain the right combination of instructional methodologies, emergent technology and alternative approaches in order to generate powerful feedback faster than ever. This participant mentioned his challenges to integrate feedback with emergent technology within a specified time in this manner:

> *Sometimes you want to give feedback to students, and also to get their feedback through their facial expressions, but then the VC is not working, I mean you can't, just because the moment they finish fixing it, the time slot for the session is over. (T1)*

This comment means that when technology such as VC fails in the classroom, the provision of feedback can be severely affected because time would be spent fixing the VC and consequently it would affect the time slot allocated for tutorial sessions.

During VC sessions, feedback is usually affected by the connectivity of VC. Thus, when it disconnects due to low bandwidth and a lack of network, it affects teaching and learning. These findings are supported by one participant in the individual semi-structured interviews who pointed out that:

> *In my centre where I am a tutor, network is always down, this eats on our time and as a result we normally don't finish the session, not even to give feedback. (T8)*

This response indicates that the time for offering tutorials becomes more limited due to technical failure of VC to a point where the feedback does not fit in. It is crucial that the quality of VC equipment be maintained at all the times and the network capacity be increased to avoid time consumption as it disconnects tutorial sessions.

Mbukusa (2009:140) agrees with these findings when he says "good feedback taps on the students' potential for development and helps establish a stronger dialogue between the tutors and students". In addition, students who receive prompt feedback have a clear idea of what they are doing correctly, and how they can improve their work (Li, 2013:80). However, the quality of prompt feedback in VC depends on the functionality of the technology. In this regard, Wilson (2004:3) argues that the quality

of the VC facility is crucial for saving time and providing feedback, especially when there is a multi-connection.

Wilson (2004:3) further emphasises that in a quality videoconferencing environment, tutors can receive and answer questions, and at the same time obtain feedback from the facial expressions of students, i.e. verbal and non-verbal feedback. In the same vein, Oxborrow (2012:29) maintains that by providing students with greater connectivity, classroom participation may increase and students may be more capable of gaining long-term benefits from immediate feedback.

There were also risks encountered when giving feedback to students. These include electricity outages as well as the lack of bandwidth to enable uninterrupted VC connectivity. Although the issue of electricity or power outages is a challenge beyond participants' control, one of the participants in the study showed his skills in this regard. He addressed the risk as follows:

> *I communicate feedback through the VC, but when the lights go off, I immediately run to the phone to call the connecting Centre on how I will print feedback and send them via a courier services. (T3)*

This shows that tutors need to make a plan when the VC disconnects while they are offering tutorials. It would require tutors to use other strategies in liaising with the technicians at the far end on how feedback could be distributed to students so that teaching and learning could continue to take place effectively without interruptions. In addition to the above response, another participant reacted as follows:

> *Power failure, I mean…If it happens that electricity goes off, I would have to print out solutions of activities from any nearby internet café where there is power and send them to their regional office for distribution. (T5)*

This suggests that effective teaching and learning requires collaborative intervention by all stakeholders, namely VC tutors, technicians, courier services personnel and administrators, to solve an emergent problem of a technical nature, such as power failure. If power failure were encountered, it would be crucial that the solutions of the activities are sent to the regional office, and it would be important for tutorial

administrators to make copies and distribute them to the students. In this way, feedback would be prompt if not instant.

On the other hand, another participant argued that the best thing to do is to leave the problem to the centre management to find a solution. This shows a shift of responsibilities on the part of participant. This participant justifies a shift of responsibility this way:

> *It is not our duty as tutors to fix problems like electricity outages or shortage of bandwidth at the centre, we are just independent contractors and that's it…ehh, the management of the centre should solve these problems*. (T6)

In this response, it is worth taking note of the fact that the institution's tutors are appointed as "independent contractors". Although these tutors are not accountable for fixing technical problems at the regional learning centre, in collaboration with the centre management, they are responsible for ensuring that effective feedback does take place when delivering tutorials through the VC medium.

These findings contrast with Carr and Fulmer (2004:262), who argue that school reform efforts require that management and teachers at school level should work together collaboratively to solve educational problems.

4.2.5. THEME 5: Tutors' technical skills

In this theme, data revealed tutors' lack of technical skills in operating the VC technology. It was evident that some participants do not even know where to press when the VC suddenly stops. In this situation, a tutor in charge of a lesson would either call the VC technician or just abandon the lesson totally.

Some participants expressed frustration that the lack of available training makes it difficult to take full advantage of the wide range of educational technology. This lack of technical skills was expressed by one of the participants who stated:

> *I am not a technical expert, especially because I was not trained on how to operate this VC. So if there is a problem, the technician at the learning centre must attend to it. (T4)*

The above response from participant T4 suggests the need for training intervention on VC operation from the institution as most tutors reported that they had not received the VC technology training necessary to incorporate technology in their classrooms.

In another session, one of the participants T8 attempted to use a video show technique or application sharing in Economics tutorials, but could not manage to upload a video clip in the system successfully. He explains the challenge in this way:

> *I tried Video show technique one day, but I experienced broken pictures in the far end because of low bandwidth at the Centre. Uploading the video will just slow down the data transmission rate and affect my lesson badly. But I tried hey. (T8)*

Attending to a technical problem in the classroom immediately is important for teaching and learning continuity. It would mean that the attention could be in the form of trouble-shooting or calling experts who could come and assist. The above response also means that the VC venue should be equipped with communication tools like telephone so that a tutor can call a technician or administrator in case of emergency.

Technology can be a great asset to our daily lives and teaching, but when it fails during a lesson, a tutor needs to have contingency plans for the continuity of his presentations. This suggestion is in line with Darabi, Sikorski and Harvey (2006:115), who suggest that pedagogical and logistical roles of distance education tutors are satisfactorily performed if they are technologically trained and keenly aware of the significance of interaction as the building block of distance education.

Jamsri and Bosaller (2011:3005) support Darabi *et al.'s* (2006) findings when they say that the multifunctions of teaching technology, learners' skills levels and insufficient training in technology are key frustrations that teachers are currently dealing with at schools. Jamsri and Bosaller (2011:3005) further say that informal or alternative support mechanisms such as colleagues or online search are the preferred technology support choices of teachers

4.2.6. THEME 6: Tutors' mixed feelings about interaction with students

In this theme, data revealed that students do not take part in classroom interaction. This would suggest that teaching and learning suffers. For example, one of the participants, T5, explained that when students do not participate in classroom activities, tutors feel bored as they become frustrated. Another participant added on this notion and stated:

> *They don't even make any comment, they just look at you, I feel like discouraged. (T7).*

This response would mean that when students do not actively engage during VC class, tutors do feel discouraged. A tutor needs a vibrant classroom environment to showcase his or her facilitation skills. Tutors' facilitation skills are affected, either negatively or positively, by the extent to which students participate in classroom activities.

Thus, the more students participate, the more a tutor is encouraged or motivated to apply more active facilitation skills. To consolidate this notion, Beltz and Muller-Hartman (2003:41) affirm that teachers' motivation is easily affected by how students react to what they are offering. When students are non-participative, the danger is that their performance is hampered while their teacher is grossly discouraged for self-development. This can even lead to student dropout and tutor apathy (Rumberger, 2011:143).

This finding is in line with the University of Melbourne's (2015:1) training manual, in which tutors who attended tutor training were warned that they would inevitably encounter at least one or perhaps a group of students who sit quietly, never answer or ask questions, do not participate in group discussions, and do not 'seem' to be engaged in learning at all. A method for dealing with passive students is to try to engage them in activities within a group situation (University of Melbourne, 2015:1).

Moreover, the above findings are in line with those of Thomas (2011:1), who indicates that the best teachers of students are often other students. If a tutor has shy or salient class members, it is sometimes useful to pair them with an emphatic student in the class group. Thus, a more confident student draws the other one out

and does some in-class coaching. This student will also bring concerns to the tutor's notice that the other student does not feel comfortable about mentioning. This is another form of peer tutoring, and one that has mutual benefits for both students (Thomas, 2011:1).

Supplementary to Thomas (2011:1) opinion, the training manual (University of Melbourne, 2015:2) stipulates that, if a student is called on by his or her name, it becomes harder for them to avoid participation. For students who are shy or reserved, it is imperative for a tutor to give them time to prepare their responses and return to them later or start with a low-risk question. According to University of Melbourne's (2015:1) training document, it is important to note that some 'quiet' students are not necessarily uninvolved but listening and absorbing the discussion.

4.3.   FINDINGS OF TUTORIAL OBSERVATIONS

Tutorial observation as the second strategy to collect data was used in this study. The purpose was to observe how students react towards tutors' facilitation methods and to establish the classroom interactions that transpired during the VC technology sessions. The observations were conducted at four regional learning centres of the university (see Chapter 3, section 3.3.2.2). The findings of these observations are categorised and discussed according to individual Regional Learning Centres (B, D, N and P).

4.3.1.   Regional Learning Centre B

In Regional Learning Centre B, there was evidence of lack of interactivity among students themselves (student-student interaction). Students could not communicate with each other effectively because of the terrible noise that was audible from the connecting sites. Their inability to communicate effectively further exacerbated the absence of social presence in the VC learning environment. As the noise from the connecting sites became more unbearable, students were completely engaging in activities that appeared not related to the subject under discussion. Some students were engaging themselves in social communication that appeared to be like WhatsApp or Twitter or even Facebook.

This finding would mean that noise could negatively affect social presence in the teaching and learning environment. It can influence tutors to resort to less effective facilitation techniques.

This is in line with Gifford and Lacombe (2006:144), who emphasise that noise is more bothersome in crowded classrooms; teachers in those classrooms might resort to quieter, less effective teaching methods because of the conditions. Therefore, more efforts should be made to ensure that the classroom environment is conducive to learning. In addition, UNISA might have to consider in its curricula the information students need to know about noise and how it can affect their hearing and their health (UNISA, 2010:11).

To show further lack of communication among students at Regional Learning Centre B, evidence showed that students could not brainstorm on the possible solution of the problem under discussion in the Law class. In fact, no suggestions were put forward by students for consideration, sharing of ideas and adding to the knowledge established or expressed. It was apparent that students were passively tackling problems during tutorials, and this could not lead to meaningful and active learning.

It was also apparent that when asked questions, students could not integrate the knowledge created in the Law module to work or other non-class related activities. Additionally, there was no evidence of probing questions, comments and additional information from the tutors, which led to a feeling of discouragement towards learning on the part of students.

The above findings would mean that at times students are unable to recognise the problem in the teaching and learning environment. Tutors should therefore introduce the lesson in such a way that students become aware of the problem that needs to be discussed. Only when students are aware of the problem can they figure out the solution to such a problem, and this translates to cognitive presence.

In line with these findings, Garrison *et al.* (2000) maintain that cognitive presence enables students to construct and confirm meaning through related reflection and discourse. Garrison *et al.* (2000) further emphasise that cognitive presence requires students to recognise a problem (a triggering event), explore possible solutions

(through brainstorming, communication, divergent thinking), integrate findings (convergent thinking), and resolve the problem.

Tutors' inability to use technology effectively was another shortfall observed during my visit at Regional Learning Centre B. The tutor was seen struggling to operate the VC medium, thus he was unable to switch the VC medium from 'near end' to 'far end' mode in order to zoom the picture. As the tutor struggled with these operations, he could not manage time for tutorial sessions. Consequently, students' noise, unsettlement and disruptions by some students who were seen moving out of the class, presumably because they seemed to have lost confidence in the tutor, were observed.

4.3.2. Regional Learning Centre D

In the Regional Learning Centre D, the findings of my observation revealed that there was a lack of affection among students themselves. In this regional learning centre, a tutor gave students tasks to work on but they could be seen seated individually and passively listening to what he had to say through the VC medium, indicating that interactivity was explicitly absent. Moreover, in an activity-based exercise that the tutor gave students to work on, there was no sign of open communication, which is an important element of interactivity during tutorial sessions.

With regard to group cohesion, students in this Regional Learning Centre (D) did not show a spirit of solidarity in solving academic problems and were not committed to their tasks given during sessions. It was apparent that some students were working in silos and were embarking on different activities other than those that were related to content. For example, a student was seen chatting on her cell phone, seemingly detached from the tutor's lesson as projected thorough the VC (see Picture 4.1 below).

**Picture 4.1: Picture of a VC classroom in which one student
is chatting on the cell phone**

The above evidence would mean that tutors are experiencing challenges with regard to classroom management, especially with students who are in the remote sites. Thus, if a student starts to chat on the cell phone while the tutor is busy with discussion on the far connecting site, there is nothing that the tutor could do; reprimanding one student could disturb all the connecting sites to a point where teaching and learning could be halted.

In my observation relating to cognitive presence, findings at this Regional Learning Centre (D) revealed that it was difficult for students to recognise the problem during tutorial sessions. This was evident when students could not answer questions relating to the Economics module under discussion. A tutor who was facilitating the module asked several questions, and one of the questions was related to whether they are aware of the current economic situation in South Africa. Instead of answering the question, students just stared at the tutor in puzzlement, even when the tutor was referring them to the study material.

These findings are in contrast with Garrison, Anderson & Archer's (2000) argument, which says that social presence is established through emotional expression, open communication and group cohesion, whereby participants create a supportive

environment where critical thinking and inquiry are fostered. This way, students can attempt to answer most of the questions posed by the tutor as they openly communicate with one another. However, this was not the case at Regional Learning Centre D during my observation. For example, during observations two students were making conversation that appeared not to be related to the content.

Another challenge observed at this regional learning centre was that there was an absence of teaching presence. According to Garrison, Randy and Anderson (2003:29), teaching presence refers to a design, facilitation and direction of cognitive and social processes for realising personally meaningful and educationally worthwhile learning outcomes.

The first indication of this deficiency is a lack of tutorial planning and organisation by tutors. During my visit at this Regional Learning Centre (D), it was evident that a tutor who was facilitating learning from UNISA main campus in Pretoria through to Regional Learning Centre D did not have a lesson plan that could guide her tutorials. Therefore, this contributed to students' misbehaviour, as shown in Picture 4.1 above, where for example a student could be seen initiating conversation that appears not to be related to the content, while tutorials were under way.

The above findings from Regional Learning Centre D show that when there is no teaching presence in the learning and teaching environment, students get the opportunity to misbehave. When a course is in session, students need to see "evidence of engagement" such as the tutor's ability to use technology while facilitating learning (Kelly, 2014:1) for example, tutors' ability to mute and unmute the VC system if noise interferes with the lesson.

These findings would mean that either tutors are lazy or they lack knowledge on how to divide students into small groups, which could yield effective learning.

This is in line with Stein, Wanstreet, Glazer, Engle, Harris and Johnston (2007:108), whose research reported that effective design through teaching presence kept discussions organised and helped participants stay focused on the task. As long as the goals were clearly stated, students should stay on track to work towards solutions. In the same vein, Tagg and Dickerson (1995:41) report that when there is little teaching presence, discussions cannot thrive.

4.3.3.   Regional Learning Centre N

In Regional Learning Centre N, a VC technical problem was observed. The VC suddenly switched off and showed "no signal" on both screens, but students continued to discuss issues. There was reasonable evidence of affection and closeness among students as they continued to work together on their activities, until the VC was restored. Students showed an element of caring, a spirit of working together (cooperative learning) and as a result "social presence" prevailed. Picture 4.2 below shows evidence of such "cooperative learning".

Picture 4.2: Picture showing 'cooperative learning' during a VC class

Palloff and Pratt (2001:3) consider social presence to be a critical element in online community building because the absence of face-to-face contact and visual cues, as in the picture above, may lead to feelings of isolation or lack of connection with fellow students and instructors.

Based on the above arguments of Palloff and Pratt (2001), I therefore argue that collaboration is an important feature of any successful learning activity, particularly within VC learning environments; as such, this "cooperation" was there in Regional Learning Centre N as shown in the above picture (Picture 4.2). Students could be

seen interacting with the study material, especially after their VC was disconnected (see Picture 4.2), which is a symbol of cognitive presence.

From Picture 4.2 it is evident that students were talking to their content, where one student appears to have taken over from what the tutor was teaching before the VC disconnected, and acts as a group leader to help facilitating other students' interaction with the content. The picture further depicts that all students were engaging with the topic under discussion, brainstorming and fully cognitively engaged.

These findings from Regional Learning Centre N would mean that when technology fails in a teaching and learning environment students need to take control of their own learning. They need to continue to engage with the content until the technology is fixed. Furthermore, this would enforce interactivity, which in turn would bring a sense of togetherness and shared experience among students.

Despite the VC having switched off suddenly, it was evident that a tutor had managed to pair students in groups and encourage them to talk on the issue under discussion, in the beginning of his tutorial. This is evidence that motivation and engagement of students in active learning was done by a tutor before he was cut off from the disconnected VC, thereby maintaining discourse and ensuring smooth interactivity.

These findings are in line with Bates (2005:74), who says that smooth interactivity during VC tutorials will bring a sense of togetherness and shared experience, a camaraderie that can help offset the particular danger of attrition where students study both remotely and individually.

In the same vein, Markett *et al.* (2006:281) view pedagogical interactivity as a complete message loop originating from the students and returning to the student (refer to section 2.5.4 in Chapter 2).

4.3.4. Regional Learning Centre P

In Regional Learning Centre P, my observation shows similar experiences as those in Regional Learning centre D and B. Specifically, in this regional learning centre the findings of my observations show that noise was not the only disturbing factor, but

also tutors' incompetency in terms of technology operations. For example, frustration was evident from the observations wherein a tutor was found to be struggling with a document camera to demonstrate to students how a business letter should be structured.

This finding would mean that a tutor's technical incompetency could negatively affect students' understanding of the concepts. It therefore means that, because the tutor cannot focus the VC's document camera in a proper direction in order to demonstrate how the business letter should be written, students may not be able to acquire the skill of writing a letter in an English module.

The findings of these observations are more in line with the ones that emerged in Gulbahar and Guven (2008:39), whose research concluded that even for teachers who are positive about the potential benefits of technology in the classroom, many do not feel competent in their technical knowledge or 'computer literacy', and this affects students' learning negatively, as they are generally unable to comprehend the content.

Regarding teacher presence, there was evidence of improper lesson design implementation and inactive facilitation techniques by the tutor. The tutor was unable to divide students into manageable small groups for effective discussions. Students were seated in rows facing the VC screen. This might have been caused by the fact that discussions were not well organised and that the participant (tutor) did not plan his lesson before the class started. This lack of teaching presence also led to passive learning on the part of students.

4.4.   FINDINGS OF FOCUS GROUP INTERVIEWS

A focus group interview was the third and final data collection strategy that was used in this study to collect data from UNISA students based in four regional centres as outlined in Chapter 1 (see section 1.6.2.2). For ethical reasons, VC students are represented by the letter S and regional learning centres are represented with letters D, B, N and P respectively. Therefore, the four different focus groups are coded as DS, BS, NS and PS respectively.

The following themes emerged during the focus group interviews: learner involvement; challenges experienced by students during videoconference; and students' expectations of tutors during VC sessions.

4.4.1. THEME 1: Learner Involvement

The following sub-themes emerged from this theme: active involvement and participation.

During focus group interviews, participants raised concerns that tutors do not involve them through various forms of teaching methods when facilitating VC tutorials. They indicated that their learning methods were influenced mainly by the extent to which their tutors involved them in teaching and learning. In relation to learner involvement, one participant mentioned that:

> *As long as my tutor uses an active teaching method when he is teaching, I am happy because it makes a huge difference to me in the sense that I do involve myself in discussions. (DS7)*

This would mean that the more active teaching methods the tutor applies in a given session, the more students are likely to involve themselves in discussions. Students learn actively when a tutor applies active methods such as small group techniques, brainstorming and focused discussions.

These findings are in agreement with Moore (2009:142-168), who mentions that a good and active teaching and learning method produces better results than other teaching methods. Didactically speaking, students will react best when good methods are in use (Chirinda, 2011:17). According to Wehrli and Nyquist (2003), in the VC setting it is important for a tutor to develop group facilitation skills to manage interaction, time and process effectively, paying attention to both task and group interaction functions.

However, in some cases the VC technology might handle large group discussions: different sites could be used as different groups in discussions, and that might be possible in a multipoint or bridge VC connection, where all the sites participate in one single discussion (Nematandani & Ramorola, 2013:650).

Teaching methods that are full of questioning are critical for teaching and learning. Some participants felt that exchange of questions during VC teaching and learning could assist them in achieving best marks during exams. One participant who felt this said that:

> *Tutors should involve us through questions during tutorial sessions. He must give us opportunity to ask him questions. I mean…..as he asks questions and we answer him it makes us to remember all what we have discussed as we write exams or preparing assignments. (NS6)*

This 'exchange of questions' between tutors and students can relate to the 'question and answer method" (Thompson & Mackiewicz, 2014:14). These findings further imply that, when students ask their tutor a question relating to subject content, and get answers, and a tutor in turn ask his/her students questions during the learning process, chances are that students can achieve better on their assignments, tests and examinations (Thompson & Mackiewicz, 2014:15).

In corroboration with these findings, the Malawi Institute of Education (2004:4) emphasises that through questions an attempt is made to ascertain and evaluate the knowledge of students concerning the subject. It is therefore necessary that tutors also formulate higher order questions that require students to apply, synthesise and evaluate knowledge or information (Malawi Institute of Education, 2004:4). This method ensures participation, and as such, the tutor should ask questions and the student should be encouraged to ask questions.

Similarly, when tutors ask questions during VC tutorials, students' curiosity about the topic can be stimulated; at the same time, it might help tutors to assess students' understanding of the material. Another participant agreed with the above notion in this way:

> *Yes, when my tutor asks me a question, I become curious and want to learn more about the subject through involvement. (DS3)*

This would mean that students' curiosity could be stimulated by frequent questions from the tutor. Thus, inspiring curiosity in students encourages them to involve themselves in a learning process. When students are fascinated by a new idea or a

new situation and are compelled to explore further, regardless of external rewards, they can be said to be truly motivated. Arnone (2003:1) highlights that curiosity is a heightened state of interest resulting in exploration and involvement. It is also a critical component of creativity.

This finding is in agreement with Schmitt and Lahroodi (2008), who maintain that teachers should take curiosity to be instrumental to and even essential for education. Furthermore, Schmitt and Lahroodi (2008) argue that inquiry and knowledge are confirmed by the fact that teachers often prefer techniques of instruction that excite curiosity and encourage involvement.

Conversely, some participants cited willingness to work independently on classroom activities. They said that they preferred a tutor to let them work on a problem and come up with solutions, without depending on his/her expertise. One participant from Learning Centre B said that:

> *I prefer my tutor to show me how to come up with solutions on the problem; I really don't want to depend on him or other fellow students.(BS6)*

Participant BS7 supported participant BS6 in the following manner:

> *The tutor must group us, and then we discuss issues on our own.*

The above responses would mean that for students to learn how to independently figure things out for themselves, a tutor must resist the urge to immediately satisfy their questions. Sometimes tutors' instantaneous help actually increases student dependency. In order to avoid this, tutors should become question-askers rather than question-answerers.

Both responses from BS6 and BS7 are supported by Knowles (1975:18), who remarks that it is critical that students should take the initiative, without the assistance of tutors, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating their own learning outcomes.

Participation through various learning techniques is vital for effective learning (Deslauriers, Schelew & Wieman, 2011). In this sub-theme, participants show

knowledge of different learning techniques, which could help them to learn meaningfully during VC sessions. During focus group interviews, findings revealed that if tutors could guide and motivate students to adopt more active learning methods during VC sessions, students could achieve better as they participate.

This can be possible when tutors are using active teaching methods such as small group discussion, role-playing or brainstorming. Another participant showed that he learns actively through inquiry-based learning because it encourages participation. He responded this way:

> *I learn actively as I inquire for more information from my tutor and from the group. I think this becomes simple when we learn collaboratively. (NS5)*

This means that good and active learning methods that students could use alongside active teaching methods applied by their tutors could include the following: inquiry-based learning (IBL), which is a learning process that is based on inquiry or asking questions; problem-based learning (PBL), where students engage complex, challenging problems and collaboratively work toward their resolution; and project-based learning (PbL), which is an instructional approach built upon authentic learning activities that engage student interest and motivation (Edelson *et al.,* 2011:397).

This is in line with Gokhale (1995:1), who mentioned that the active exchange of ideas within small groups not only increases interest among the participants but also promotes critical thinking. In the same vein, Johnson and Johnson (1986) maintain that there is persuasive evidence that collaborative team achieves at higher levels of thought and retain information longer than students who work quietly as individuals.

The shared learning gives students an opportunity to engage in discussion, take responsibility for their own learning, and thus become critical thinkers (Totten *et al.*, 1991:18).

The following is an indication of how students prefer to learn, as cited by participant BS4 in learning centre B.

> *I learn effectively when we discuss in groups. In group discussion we solve the problem collaboratively as we participate.*

The above response shows that students also prefer a problem-based learning (PBL) method that helps them to engage complex, challenging problems and work collaboratively towards the solution of the problem.

In addition, another participant (PS4) in Learning Centre P preferred other methods and she mentioned her preference in this way:

> *I can study quickly and participate in the group discussion when the tutor show us mind-map of something, or any picture. (PS4)*

A mind-map in this response would mean that when used in an instructional setting, students who complete a concept map collaboratively place concepts or ideas in any shape, organise the shapes in some type of logical manner that shows the relationship among them, and connect the concepts to one another with lines that might or might not be labelled (Novak & Gowin, 1984:1).

Participant NS4 in Learning Centre N preferred a different learning style, which is note-taking. He explains his preference this way:

> *I always take notes when I am studying and at the same time highlighting information, but at the same time participating in what the tutor is teaching.*

This response means that students can take notes and at the same time highlight information while the tutor is teaching, and this can help the student to remember the important concepts, even during his examination preparations.

This finding appears to be consistent with Winn and Grantham's (2005:210) research studies, which proved that all students are unique individuals merged in a common classroom, coming from various socio-economic and cultural backgrounds, possessing different learning styles that rarely correspond with their teachers' teaching styles. Hence, if tutors could guide and motivate students to adopt more active learning methods that require their participation, and which are compatible with their teaching styles in VC sessions, students could achieve better.

4.4.2. THEME 2: Challenges experienced by students during VC tutorial sessions

The following sub-themes emerged from this theme: technical problems and tutor's lack of preparedness and commitment.

4.4.2.1. Technical problems

The findings in this sub-theme indicate that the teaching and learning was negatively affected by the failure of VC technology in a number of instances, for example, time delay between pictures and sound, broken pictures, and unnecessary sound dominated by background noises. This eventually results in a poor performance on activities by the students. Another participant in Regional Learning Centre B experienced the technical problem during his classroom engagement this way:

> *Sometimes the VC equipment just gets stuck and only becomes functional after the VC technician has been called in to assist. (BS6)*

The finding further revealed that in the case where the VC becomes totally dysfunctional, tutors cannot continue with the tutorials for the day, and this affects students' performance negatively. To emphasise that the VC frequently comes on and off, another participant (NS6) in Regional Learning Centre N shared a similar feeling to that of participant BS6)from Regional Learning Centre B in this way:

> *My problem is with this VC, something should be done about it because it is on and off all the times. (NS2)*

The severity of the problem was further indicated by another participant from Regional Learning Centre P in this way:

> *There was a day where this VC was noisy; I don't know what it was. The tutor switched off and we waited like an hour before it came back, it frustrates us very much. (PS1)*

The above citations show further challenges posed by VC technical problems in that when it is out of order and the technician is not available to attend to the problem, then students become more frustrated. Evidence indicated that sometimes students

spend many weeks without tutorials because the VC facility is out of order. When there is no electricity, for example, the VC does not work at all.

All these factors contribute in some way or another to poor learning. These mishaps sometimes lead students to withdraw from the VC classroom attendance and go home, of course because of frustrations brought about by the dysfunctional VC. To supplement this finding, the following excerpt from one participant in Regional Learning Centre D was noted:

> *I think that VC is a problem as it is always out of order; we did not attend classes for three weeks, despite the schedule being there. (DS4)*

In support of participant DS4's excerpt above, participant DS6 from the same focus group had this to say about the VC dysfunctionality:

> *I support my fellow student here…Ehh …our VC has problems, it is almost three weeks when it is out of order, and we are falling behind the tutorial schedule as a result.*

Another participant from Regional Learning Centre P commented this way:

> *I think that VC is a problem all over, not our tutors; we did not attend classes for three weeks, despite the schedule being there. (PS8)*

The above responses would mean that even though the sessions are normally scheduled for two hours, it was the feeling of another participant in the focus group interviews that two hours for the session is insufficient because in most cases tutors spend the first hour of the session struggling with the operation and connectivity of the VC technology. This further frustrates students as the technician may not always be available in the VC room during the sessions, or their tutors may not even be well trained on how to troubleshoot the VC facility when it fails. Therefore, a tutor may end up not covering his or her scope of work as per planned schedule.

These findings are in line with those of Morse (2014:16), who maintains that technical failures in the classroom inevitably happen. He further cautions that it is best to expect the failures and be prepared as best as one can. Morse (2014:16) further advises that each tutor needs to have some capacity to substitute

immediately when the tutorial of the moment suddenly disappears due to lost connection, power failure, etc.

It is evident from the data that students expected some levels of knowledge and skills from their tutors. The findings revealed that participants expected their tutors to know more about VC technology than they do when they come to VC sessions (technological knowledge). One participant who was fascinated by seeing a tutor maximally using technology in teaching and learning echoed enthusiastically that:

> *I expect a tutor who knows technology. VC is a real technology and if these people [Tutors] cannot operate it, then it's a shame.* (DS3)

This finding shows that students generally become more fascinated by seeing their tutors using technology when teaching; this makes them attend lessons without absconding. In support of this finding, Benmar (2015:1) argues that if tutors want to understand better how technology can affect a student's desire to learn, they must first look inside the mind of a student, they must be exemplary in the usage of technology during tutorials because this is what the students expect them to do. This is also supplemented by another participant who said:

> *I expect to see a tutor who can operate the VC technology, actually who knows something about technology, you see.* (DS5)

The above response means that tutors should view technological knowledge as one of the ICT competencies (technical competency) that enable them to face ICT technical challenges. This in-depth technological knowledge of VC technology is emphasised by Koehler and Mishra *et al.* (2007:743), who describe it as a deeper knowledge that tutors should possess that could enable them to enhance teaching and learning.

Most participants also expected their tutors not only to have a deep knowledge of the subject, but also to have a passion for the subject he / she teaches. According to Furnham (2001:1), all great tutors have enthusiasm, even passion, for their subject. They show the thrill and pleasure of acquiring skills and knowledge in a particular area, and they are able to communicate passion to their students. In this study, one participant acknowledged the above notion by saying that:

> *I expect to see a tutor who has knowledge and passion in subject matter.* (BS1)

It means that tutors should strive to gain more knowledge by further developing themselves through attending training and they should develop the love of the module they teach.

This finding is in agreement with Mart (2013:438), who mentions that passionate teachers know that it is their role to encourage students for active learning and concern themselves with promoting students' intellectual and moral development. Teachers with passion work with enthusiasm, their dedication and commitment increase, and they believe in the importance of their job (Rowe, 2003:27).

4.4.2.2. Tutor's preparations and commitment

Unpreparedness of tutors is one other challenge that the study revealed. In this case, most participants showed concern that their tutors generally come to class unprepared. To be specific, participant PS5 in Learning Centre P mentioned that her tutor could be seen confused on what to teach at times, showing evidence of unpreparedness. This contributes to students' misbehaviour.

In a worse scenario, the evidence revealed that most tutors leave the class before it comes to an end, and are always absent from the tutorials, perhaps because they realise that they have not prepared. The evidence further indicated that tutors always avoid questions from the students. This is an indication of non-preparedness on the side of tutors. To further show an element of non-preparedness, participant PS2 from Regional Learning Centre P commented this way:

> *I think our tutor is lazy. He can leave the class before it ends.*

Another participant in the same Learning Centre (P) said that:

> *Our tutor doesn't want to answer our questions; I think he doesn't prepare.* (PS3)

Regarding the tutor's avoidance of answering students' questions, participant PS4 revealed that:

My tutor feel challenged in most time during our interaction, he always discourage us from asking questions.

All the above responses indicate that when tutors are not well prepared, they normally avoid questions from students, and this they normally use as a defence mechanism to try to discourage students from asking questions. They tend to be more arrogant in order to successfully avoid questions from their students.

The above responses corroborate the findings of Shelagh (2007:105), who mentions that ill-prepared lessons can often lead to misbehaviour on the part of students, while a well-prepared teacher is more likely to be able to take time during class to notice and be aware of behaviour disruptions, thus preventing an unnecessary waste of class time.

Additionally, this finding is also in line with National Council for Accreditation of Teacher Education (2014:1), in which it is indicated that teacher preparation/knowledge of teaching and learning, subject matter knowledge, experience, and the combined set of qualifications measured by teacher licensure are all leading factors in teacher effectiveness.

4.5. CONCLUSION

This chapter focused on what transpired during the individual semi-structured interviews with the VC tutors at UNISA Pretoria Learning Centre, and tutorial observations and focus group interviews held in several of UNISA's VC venues. The findings are discussed in line with the above data collection methods in order to explore the challenges that are experienced by UNISA tutors in applying instructional methodologies as a way of promoting interactivity during videoconference tutorials. In the next chapter (Chapter 5), a summary of the main findings, conclusions and recommendations of the study is outlined.

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1.   INTRODUCTION

In this chapter, I present the summary of the main findings, research conclusions and recommendations for action, for improvement and for further research endeavours. The conclusions are based on the review of literature and findings from the individual semi-structured interviews, tutorial observations and focus group interviews.

As discussed in Chapter 1 (section 1.3), the main aim of this study was to explore the challenges that are experienced by UNISA tutors in applying instructional methodologies as a way of encouraging interactivity during videoconference (VC) tutorials. The objectives of the study were to:

- Identify instructional methodologies that are pertinent to videoconferencing;
- Examine the nature of social interaction between tutors and students and between students and students;
- Identify factors affecting tutors' ability to keep students engaged and participate in a productive dialogue during VC tutorials; and
- Identify challenges experienced by tutors when monitoring content-based activities through VC.

This study is made up of five chapters, which are briefly explained in the next sections.

Chapter 1

In this chapter, I presented an orientation to the study and set out the background for investigation. I then highlighted the main research problems as well as the aim and objectives of the study. The methods that I used to collect data in order to achieve these objectives included a review of relevant literature on the experiences and perceptions of tutors in the application of instructional methodologies during videoconference tutorials.

The methods also included individual semi-structured interviews, tutorial observations and focus group interviews. Research questions were also clarified and they form the basis of the recommendations as highlighted in this chapter (See section 5.4).

Finally, the chapter also outlined the sample, data analysis and definition of concepts and concluded with the plan of how the study would be done.

Chapter 2

In Chapter 2, I reviewed the literature on tutors' experiences of the use of instructional methodologies during tutorial offerings in order to establish a theoretical background. In this chapter, I presented an overview of how teaching and learning could be guided and influenced by videoconference technology. This chapter further discussed teaching methodologies pertinent to videoconference technology, and how these methodologies could influence interactivity for meaningful learning. Lastly, through the theoretical framework of Community of Inquiry (CoI), the chapter highlighted the importance of the three "presences" in teaching and learning, namely social presence, cognitive presence and teaching presence.

Chapter 3

This chapter explained the methods used to collect qualitative data. This study was conducted using three instruments, namely individual semi-structured interviews, tutorial observations and focus group interviews. Furthermore, Chapter 3 discussed the data collection procedures and data analysis.

Chapter 4

This chapter presented data analysis, findings and interpretation. In this chapter, I interpreted data collected from instruments. Instruments of measurement formed part of the process in the research findings.

Chapter 5

This is the last and a current chapter, which provides a summary of the research findings, conclusions and recommendations, limitations and avenues for further research. The next section discusses the summary of the research findings.

5.2. SUMMARY OF THE RESEARCH FINDINGS

The research study was designed to achieve the four objectives that were listed in Chapter 1 (see paragraph 1.5).

5.2.1. Instructional methodologies pertinent to videoconferencing

Examining instructional methodologies pertinent to videoconferencing was the first objective in this study. With regard to this objective, evidence shows that tutors are experiencing some challenges when applying various teaching methods during tutorial sessions.

The findings indicate lack of skills and reluctance in applying various active facilitation methods by VC tutors. It emerged that tutors cannot integrate the VC technology tool with relevant teaching methodologies to provide new perspectives for the understanding of phenomena. It is apparent that tutors find it more difficult to use active teaching methods when tutoring via VC than when they teach face-to-face. For example, in a face-to-face context, tutors can easily use small-group discussion and monitor the activities at the same time, but when teaching via the VC medium, it becomes a challenge to most tutors to manage small groups. During the individual semi-structured interviews, all participants were aware of the active teaching methods like brainstorming, focused discussions and problem-based learning, even though they were found not using them. They were also aware, for example, that active methods such as brainstorming could promote peer learning and create synergy, which would help them to work collaboratively (Wehrli & Nyquist, 2003). As part of the realisation of this objective, tutors also became aware through interviews that not using these active methods they were actually denying students an opportunity for building confidence in tackling problems, self-encouragement and reinforcing their understanding (Robertson & Nicholson, 2007:35).

Evidence revealed that tutors were reluctant to use these active methods and cited challenges such as a lack of training on how to exploit the VC technology while using active teaching methods, and furthermore, that it was difficult for them to apply the methods due to the nature of the technology itself.

Some cited the challenges of time allocated to each session, which is two hours per module per session, stating that it was too little for them to cover entire lesson plan. Besides, most tutors were found not to have studied methodologies with their qualifications; for example, most tutors are lawyers by profession and do not have any knowledge of how to facilitate learning.

5.2.2. Factors affecting tutors' ability to keep students engaged and participate in a productive dialogue during VC tutorials

The second objective was to identify factors that could affect tutors' ability to encourage interactivity among students during VC tutorials. The videoconference technical problems emerged as one of the major findings in this regard. During observation in Learning Centre N, for example, it was more evident when the VC suddenly switched off and a tutor became frustrated. These mishaps contributed, in some way or another, to the poor learning and completion of classroom activities, assignments and tests.

During the focus group interviews, evidence further showed that students eventually withdraw from the VC classroom attendance and go home, of course as a result of frustrations caused by the dysfunctional VC. Other factors included risks such as electricity outages and lack of tutors' technical skills in using VC technology. Another major finding was that tutors' non-preparedness and lack of commitment to tutoring contributed largely to their inability to enforce interactivity in the class.

Shelagh (2007:105) mentions that ill-prepared lesson could often lead to misbehaviour on the part of students and could lead to deficient interactivity, which is the backbone of teaching and learning. Beauchamp and Kennewell (2010:759) add that VC technology can support the whole-class teaching and the rate of interactivity between the tutor and students tends to increase with its use.

5.2.3. The nature of social interaction between tutors and students and between students and students

The third objective was to determine the nature of social interaction between tutors and students and between students and peers.

With regard to this objective, the findings indicate that there is a general lack of social presence among tutors and students during tutorial sessions. Evidence further indicates that students hesitate to work together cooperatively and they prefer to work in silos.

Because of this lack of cooperation, more problems were left unattended during VC classroom sessions. However, as far as collaborative learning is concern, it can be concluded that even though tutors are aware of the effectiveness of collaborative learning and the impact it has in teaching and learning, they generally fail to enforce this type of learning when they facilitate VC sessions. Tutors' awareness of the importance of collaborative learning is evident when they successfully pair students from different regions or sites, which then encourages students to exchange opinions on the matter under discussion.

During observation, some Regional Learning Centres (D, B and P) showed a lack of social presence and cooperativeness, while in Regional Learning Centre N, students-students and students-tutor engagement was apparent. For example, in Learning Centre N, students could be seen continuing discussing activities while the VC has switched off due to technical problems. There is ample evidence in the literature showing that when there is social engagement among stakeholders in teaching and learning, students' learning can be enhanced and improved.

Other aspects of the nature of social interaction in the venues indicated that affection developed between the tutor and students, which contributed in some way to their commitment to attending classes regularly. Weeks (2000:379) affirms that when there is a feeling of affection between tutors and students they learn how to express their feelings to others and respond to the feelings of others, which can lead to interaction. Tutors also experienced fulfilment and affirmation, especially when students commented positively about them. This might be because at UNISA positive evaluation and comments can lead to renewal of a tutor's contract.

5.2.4. Challenges experienced by tutors when monitoring content-based activities through VC

In this fourth objective, it was evident from the findings that tutors are unable to monitor activities during VC discussions due to distant connected sites on the videoconferencing system. It was evident that there was no common and effective strategy for monitoring of tutorial activities in place during VC sessions. Difficulties in monitoring VC activities became more severe when the VC was multi-connected. This is more severe because the more sites connected to the main feeder VC, the more complex and overwhelming it becomes for one tutor to manage and monitor.

Another challenge that tutors faced when delivering content was that feedback was possibly not provided because the VC always switches off. Evidence showed that when the VC has switched off, it would take more than an hour to be fixed, and this wastes tutors' time, and prevents giving constructive feedback. Although many tutors reported that the feedback through VC is as instant as in a face-to-face situation, VC technical problems exacerbated the problem in that monitoring was not easy.

Positive remarks from tutors about feedback through VC included distribution of recorded videos for the day's lesson, which is meant for students who could not attend the VC class; projections of problems and solutions to the other sites, which is normally instant because of the document camera; and feedback that tutors receive from students from distant sites in the form of facial expressions.

5.3. RESEARCH CONCLUSIONS

This study focused on the experiences of videoconference tutors in instructional methodologies application. The objectives of the study were discussed in Chapter 1 (see paragraph 1.2). The study was conducted at four of UNISA's regional learning centres in South Africa and used eight tutors that offer tutorials via VC as its target population.

Individual semi-structured interviews, tutorial observations and focus group interviews used as data collection methods were outlined in Chapter 3 (see section 3.3.2.1).

I analysed data qualitatively, using themes and categories to describe rich data and this was supported by Community of Inquiry (CoI) theory (see Chapter 4).

From the data collected, it was found that tutors lack skills in applying various methods during VC tutorial sessions. It was further found that tutors were unable to integrate VC technology effectively with relevant teaching methodologies. Evidence from the findings also indicates that there is reluctance among students to engage socially with one another and with their tutors during VC sessions. In addition, the results revealed the lack of a monitoring system in place for effective content-based comprehension.

Furthermore, data collected revealed that tutors and students experienced VC technical problems and the absence of a monitoring system during VC discussions. As a researcher, I see it as important for UNISA to train tutors on how to exploit the VC technology and on how to integrate this technology with various suitable teaching methodologies such as brainstorming, and small-group collaboration, as discussed in Chapter 2 (see section 2.2.1).

5.4. RECOMMENDATIONS

Based on the research findings and suggestions for further research, the following recommendations were formulated to address challenges experienced by tutors in facilitating teaching and learning by videoconference (VC) technology in an open and distance learning (ODL) environment. Given the problem of the study as discussed in Chapter 1 paragraph 1.2 and the findings of the study as discussed in Chapter 4, the following recommendations are made based on the research questions as indicated in Chapter 1 section 1.2.

5.4.1. RECOMMENDATION 1: Instructional methodologies pertinent to videoconferencing

It is recommended that **UNISA** develops continuous professional development programmes in which tutors can learn new facilitation techniques that are pertinent to the videoconferencing system. Training tutors on facilitation methods pertinent to videoconferencing could be integrated in the annual Tutor Development Workshops, which takes place at the regional learning centres.

5.4.2. RECOMMENDATION 2: Factors affecting tutors' ability to keep students engaged and participate in a productive dialogue during VC tutorials

The university should consider upgrading some of the VC facilities, which appear to be outdated, and should increase bandwidth capacity at all regional learning centres in order to accelerate transmission during tutorial sessions. This would minimise frequent technical problems where the VC switches off in the middle of tutorial sessions.

It is also recommended that regional learning centres should have electrical generators with enough voltage, which will substitute electrical power in times of outages. This would minimise disruptions of sessions when the electricity supply is interrupted due to power failure or load shedding.

It is further recommended that tutors should sharpen their technical skills in using VC technology through practice. This should be done in order to keep students engaged in a productive dialogue during VC tutorial sessions.

5.4.3. RECOMMENDATION 3: Social interaction between tutors and students, and between students and students

It is recommended that **the university** should provide good quality VC facilities that would not compromise quality tutorial services while students engage each other from different sites. **Tutors** need to motivate students to cooperate and collaborate when tackling issues during tutorial sessions. This will help in the encouragement of interactivity for meaningful learning.

Students should develop different active learning styles such as problem-based learning to ensure that social interaction takes place for student-student and student-tutor engagements. This would help them to understand the content as they cooperate and collaborate in their activities.

In the **regional learning centres**, tutors should be encouraged to establish tutor-network support groups, especially on the use of technology in teaching and learning. In these support groups, tutors will have an opportunity for informal supervision, support, and an opportunity to share good practice and ideas on how they could integrate technology with various teaching methodologies. **Students**

should evaluate tutors through a summative evaluation exercise in order for them to improve on their practice.

Moreover, **the university**, through continuous professional development programmes, should capacitate tutors through short training on customer service, which may ensure that they have a sense of humour when facilitating learning. Their acquisition of these personal attributes (sense of humour) will enable them to develop a sense of affection that will in turn make students feel accommodated in teaching and learning and thereby enhance social interaction.

5.4.4. RECOMMENDATION 4: Challenges experienced by tutors when monitoring content-based activities through VC

I recommend that assistant tutors who will be based in the various remote sites should be appointed to assist the main tutors in monitoring activities.

The university should consider purchasing more up-to-date VC facilities with integrated monitoring devices, which will assist tutors to monitor content-based activities on all other sites.

5.5. LIMITATIONS OF THE STUDY

Ideally, the study should have considered students who were attending videoconference tutorials in all UNISA's learning centres throughout the country (South Africa). However, rich information data could not be obtained from all other learning centres because some of them were not equipped with videoconference facilities, especially the learning centres in the remote areas. As a result, only four (4) out of nineteen (19) UNISA learning centres were selected for conducting an in-depth and thorough study. Furthermore, I could have obtained useful information if all VC students who are currently registered at UNISA were considered to participate in this study; however, this could have led me to generalise the findings or create a representative sample.

However, because this was a qualitative study, searching for information-rich subjects rather than for a representative sample (which is the concern of quantitative research), only eight (8) respondents (Tutors) were selected to participate in the individual semi-structured interviews.

Initially I scheduled the data collection phase of this study to be completed within three months; instead, this period had to be extended to four months because videoconference schedule compilation at UNISA is based on demand, and therefore, though the VC sessions are pre-booked, some time slots are not utilised due to unavailability of students enrolled for that specific module (see Table 2.4).

5.6.   AVENUES FOR FURTHER RESEARCH

Based on the findings and in the light of the limitations identified in this study, the following issues need further investigation:

- A study concentrating on VC technology integration into pedagogical inquiry could be pursued. This study could involve stakeholders such as subject lecturers, tutors and students to get their perceptions on VC technology integration.

- Since a well-structured VC monitoring system is lacking, as revealed in the findings, UNISA's role in assisting regional learning centres with the establishment of a VC activity monitoring system could be considered for further research.

- It was one of the major findings of this study that, even if the VC medium bridges the geographic gap between the tutor and a student at a distance, students are still experiencing psychological distance due to the absence of proper communication and social interaction in the VC teaching and learning environment. Therefore, exploring the nature of social interaction in distance learning tutorials through videoconference technology could be considered for further research.

5.7.   CONCLUDING REMARKS

In conclusion, this study clearly indicates that instructional methodologies used in VC tutorials are ineffective and thus make interactivity impossible throughout VC sessions. Based on these findings, and suggestions for further research, the study therefore recommends acceleration in tutor training on exploitation of VC technology and on how to integrate this technology with various appropriate teaching methodologies.

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APPENDIX A:
PERMISSION TO CONDUCT RESEARCH (UNISA PRETORIA)

80 Caledon Drive

Norkerm Park Ext 4

Kempton Park

1620

Head Facilitation of Learning

UNISA

Regional Learning Centre (PRETORIA HUB)

PERMISSION TO CONDUCT RESEARCH AT YOUR LEARNING CENTRE WITH THE VC TUTORS

Dear Sir / Madam

I am currently studying for a Master's Degree in Education (Didactics) through UNISA and have to complete a research project.

Topic of the research: *"Experiences of videoconference tutors in instructional methodologies application".* This study seeks to explore tutor's experiences of Instructional Methodologies as applied during videoconference (VC) Tutorials. I therefore request permission to conduct interview with tutors, in your Regional Learning centre in order to collect data on the above topic. I will be conducting an interview with 5-8 VC Tutors, based at your Regional Learning centre, who offer tutorials to various Regional Learning centres through videoconference medium. After the interviews have been conducted, I will have time to give them feedback on collated data and themes to check the validity and accuracy of information I have collated.

Dates to meet these tutors will be communicated to you once permission is granted. I intend to meet these tutors the month of August when VC tutorials are taking place.

The feedback group discussion will be held in September and I will confirm with you on the exact dates in due course.

The tutors' participation in this study is entirely voluntary and they may choose not to continue once they have started. All information will be anonymous. Their responses will not be directly attributed to them or your Regional Learning centre, only themes and information about the topic will be shared.

I hope to publish the findings of my research output on the accredited journal after accomplishing the research project. The findings may also contribute to the development of videoconference tutors' facilitation skills in all UNISA Regional Learning centres in the future. Please write me a letter of approval in duplicate and keep a copy for yourself, should you grant me permission to conduct this research. Please scan the signed letter and send me through an email to:nematat@unisa.ac.za, then I will collect the original letter when I visit the centre for the individual semi-structured interviews. Upon completion of my research project, I will furnish your Learning centre with a copy of research report (electronic or hard copy).

I will contact these tutors who will be offering tutorials through videoconference and who are willing to participate in the interview. I will then send them consent forms for them to sign.

Yours sincerely

Mr Albert Tshamano Nematandani.

O79 8820829

Researcher' signature: _____

APPENDIX B:
PERMISSION TO CONDUCT RESEARCH
(UNISA Regional Learning Centres)

80 Caledon Drive

Norkerm Park Ext 4

Kempton Park

1620

Head Facilitation of Learning

UNISA

Regional Learning Centre

PERMISSION TO CONDUCT RESEARCH AT YOUR LEARNING CENTRE TO VC STUDENTS

Dear Sir / Madam

I am currently studying for a Master's Degree in Education (Didactics) through UNISA and have to complete a research project.

Topic of the research is*: "Experiences of videoconference Tutors in Instructional Methodologies Application".*

This study seeks to explore tutor's experiences of Instructional Methodologies as applied during videoconference Tutorials. I therefore request permission to conduct interview with students, in your Learning centre in order to collect data on the above topic. I will be conducting a focus group interview with 5-8 students on each group of VC students who attend classes conducted through videoconference medium. Each Regional Learning centre comprise of one focus group, so does yours.

After the interviews have been conducted, I will have time to give each Regional Learning centre feedback on collated data and themes to check the validity and accuracy of information I have collated. Each group will comprise of 5-8 students.

After I have conducted focus group interview, I will visit a Videoconference classes for conducting observation. Dates to meet these groups of students will be communicated to you once permission is granted. I intend to meet these students the month of August when VC tutorials are taking place. The feedback group discussion will be held in September and I will confirm with you on the exact dates in due course.

Students' participation in this study is entirely voluntary, and they may choose not to continue once they have started. All information `will be anonymous. Their responses will not be directly attributed to them or your Learning centre, only themes and information about the topic will be shared.

I hope to publish the findings of my research output on the accredited journal after accomplishing the research project. The findings may also contribute to the students' increased participation in the VC classes in all UNISA Regional Learning centres in the future, which may lead to better achievement. Please write me a letter of approval in duplicate and keep a copy for yourself, should you grant me permission to conduct this research. Please scan the signed letter and send me through an email to:nematat@unisa.ac.za, then I will collect the original letter when I visit the centre for focus group interviews. Upon completion of my research project, I will furnish your learning centre with a copy of research report (electronic or hard copy).

I will contact only students who attend tutorials through VC and who are willing to participate in the interview. I will then send consent forms for them to sign.

Yours sincerely

Mr Albert Tshamano Nematandani.

O79 8820829

Researcher' signature: _____

APPENDIX C:
PARTICIPANT CONCENT FORM (Tutors)

80 Caledon Drive

Norkerm Park

Kempton Park

1620

CONSENT TO PARTICIPATE IN MY RESEARCH PROJECT

Dear Participant

I am currently studying for a Master's Degree in Education (Didactics) through UNISA and have to complete a research project.

My proposed topic of the research is: *"Experiences of videoconference Tutors in Instructional Methodologies Application".* This study seeks to explore tutors' experiences of Instructional Methodologies as applied during videoconference Tutorials. I therefore request that you avail yourself as a participant in this research project. Your participation in this study is entirely voluntary and you may choose not to continue once you have started.

All information will be anonymous. Nothing you say will be attributed to you or your Learning Centre, only themes and information about the topic will be shared. No one in the other groups, outside the participating group within your Learning centre, will know what was said by any individual. The results of this research study may be published in an accredited journal. Copies of dissertation will also be issued to your Learning centre for the findings access.

Please sign this letter below should you agree to this request. Fax it back to this number: 0865550290 and make sure that you keep a copy for yourself.

I appreciate your willingness to participate in advance.

Yours Sincerely

Mr Albert Tshamano Nematandani

079 882 0829

Researcher's signature: _____

NB: If you don't understand, please ask for further explanation before you sign this consent letter.

Declaration:

I _____(Name of the participant) agree to participate in the above mentioned research project. I understand and accept the conditions of this research project.

APPENDIX D:
PARTICIPANT CONCENT FORM (Students)

80 Caledon Drive

Norkerm Park

Kempton Park

1620

CONSENT TO PARTICIPATE IN MY RESEARCH PROJECT

Dear Participant

I am currently studying for a Master's Degree in Education (Didactics) through UNISA and have to complete a research project.

My proposed topic of the research is: *"Experiences of videoconference Tutors in Instructional Methodologies Application".* This study seeks to explore tutors' experiences of Instructional Methodologies as applied during videoconference Tutorials. I therefore request that you avail yourself as a participant in this research project. Your participation in this study is entirely voluntary and you may choose not to continue once you have started.

All information will be anonymous. Nothing you say will be attributed to you or your Learning Centre, only themes and information about the topic will be shared. No one in the other groups, outside the participating group within your Learning centre, will know what was said by any individual. The results of this research study may be published in an accredited journal. Copies of dissertation will also be issued to your Learning centre for the findings access.

Please sign this letter below should you agree to this request. Fax it back to this number: 0865550290 and make sure that you keep a copy for yourself.

I appreciate your willingness to participate in advance.

Yours Sincerely

Mr Albert Tshamano Nematandani

079 882 0829

Researcher's signature: _____

NB: If you don't understand, please ask for further explanation before you sign this consent letter.

Declaration:

I _____(Name of the participant) agree to participate in the above mentioned research project. I understand and accept the conditions of this research project.

APPENDIX E:
ETHICAL CLEARANCE

UNISA | university of south africa

2014-08-13

Ref. Nr: 2014/June/30658128/MC

To the researcher:
Mr. AT Nematandani
PO Box 5296
Kempton Park
1620

This is to certify that the researcher,

Mr. AT Nematandani

declared that he has complied with the ethical requirements

stipulated by the Unisa Policy on Research Ethics during the fieldwork

of the research project stipulated below.

Mr. AT Nematendani furthermore declares that he will adhere to these ethical

requirements in the reporting of this study for degree purposes:

Experiences of Videoconference Tutors in Instructional Methodologies

Application

This compliance notification (2014/June/30658128/MC) has been considered by the chairperson of the Research Ethics Review committee of the College of Education, UNISA on 13 June 2014 and was found to be acceptable.

Prof KP Dzvimbo
Executive Dean
UNISA

Dr. Madaleen Claassens
Chairperson CEDU REC
UNISA
(012) 346 0701
mcdtc@netactive.co.za

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www.unisa.ac.za

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APPENDIX F:
INTERVIEW SCHEDULE FOR TUTORS

My name is **ALBERT TSHAMANO NEMATANDANI**. I have currently registered for the Master of Education (MEd) degree with the University of South Africa and have to complete a research project. I am investigating experiences of videoconference tutors in the application of various instructional methodologies during tutorial sessions. As part of this process, I am interviewing participants on the project and would like to gather your perceptions on the Instructional methodologies application during VC sessions. The information I am collecting may be used to provide formative feedback to Regional Learning Centres of UNISA, including you as tutors and to aid in dissemination and knowledge development activities to the entire UNISA staff. Your responses will be kept confidential and will not be shared with anyone in any way that identifies you as an individual. The information that you provide will be presented in the evaluation report as aggregated data only. Do you have any questions before we begin the interview?

- Which active instructional methodologies do you apply when tutoring through VC and how do you apply them in your tutorials?

- How do you prefer your students to learn?

- What challenges do you experience when you monitor classroom activities during VC tutorials?

- In your opinion, what are personal attributes / qualities that a tutor should possess to ensure interactivity during VC tutorials?

- How does giving feedback assist your students in understanding the content?

- What are factors that challenge you when giving feedback during VC tutorials?

- Did you receive training on how to operate the VC facility?

- What is your level of technical proficiency in operating the VC facility?

- What are your perception / feelings about interacting with Open and Distance Learning students through VC?

- How is the performance of your students during social interaction/participation in VC tutorials?

APPENDIX G

TUTORIAL OBSERVATION SCHEDULE

(Regional Learning Centre B)

Name of Regional Learning Centre	Regional Learning Centre B
Regional Learning Centre Code	B
Date of VC tutorials	09-08-2014
Number of students attending	17
Tutorial begin time	09:00
Tutorial end time	12:00

VC classroom Observation sheet

(*Key: CoI abbreviates Community of Inquiry)

*CoI Elements	Observed Aspects		YES	NO
Social Presence	*Categories*	*Indicator*		
	Open Communication	Is communication taking place between the tutor and students, and between students and students?		
	Group Cohesion	Does the tutor encourage collaboration through activities and discussions?		
		Are students comfortable with expressing their opinion and listening to others?		
		Is there any sense of trust and effective intergroup communication among tutors and students?		
	Affective/personal	Are tutors and students expressing togetherness?		
		Is there any sense of belonging to a subject/module community?		
CognitivePresence	*Categories*	*Indicator*		
	Triggering	Is there any exchange of		

		information?		
		Any brainstorming on possible solutions?		
	Exploration	Is there any use of variety of resources to explore problems posed during VC tutorials?		
		Is there any exploration of relevant information by both tutors and students?		
		Is there any collaborative exploration of content?		
		Are tutors and students appreciative of diverse perspectives?		
	Integration	Are the students using information to answer questions?		
		Are there any learning activities that assist in constructing answers or solutions?		
		Is there any sustained critical reflection within a discourse community (tutors and students?		
	Resolution	Is there any testing and application of knowledge?		
		Is there any application of solutions to practice?		
		Is there any application of knowledge creation to other contexts?		
Teaching Presence	*Categories*	*Indicator*		
	Design and organisation	Does a tutor show indication that he developed curriculum and methods?		

		Is there any indication of tutors' communication of subject goals, methods or topics?			
	Facilitation of discourse	Are there any tutors' expectations for participation by students?			
		Is there any sharing of personal meaning between tutors and students?			
		Is there any actions reinforcing development of community (tutors and students)?			
	Direct instruction	Is there any facilitation of engagement in dialogue and exploration by tutors?			
		Is there any facilitation of focus on task and relevant issues by tutors?			
		Is there any timely feedback from the tutor?			
		Does a tutor evaluate strengths and weaknesses of students during session?			

General Comments

General observation: (Students' attention, non-verbal clues, tutor audibility, tutor's interaction with the VC technology, tutors' eye contact, tutor's and students movements, etc.).

APPENDIX H:

TUTORIAL OBSERVATION SCHEDULE

(Regional Learning Centre D)

Name of regional Learning Centre	Regional Learning Centre D
Regional Learning Centre Code	D
Date of VC tutorials	09-08-2014
Number of students attending	8
Tutorial begin time	13h00
Tutorial end time	16h00

VC classroom Observation sheet

(*Key: CoI abbreviates Community of Inquiry)

*Col Elements	Observed Aspects		YES	NO
Social Presence	**Categories**	**Indicator**		
	Open Communication	Is communication taking place between the tutor and students, and between students and students?		
	Group Cohesion	Does the tutor encourage collaboration through activities and discussions?		
		Are students comfortable with expressing their opinion and listening to others?		
		Is there any sense of trust and effective intergroup communication among tutors and students?		
	Affective/personal	Are tutors and students expressing motions and togetherness?		
		Is there any sense of belonging to a subject/module community?		
Cognitive Presence	**Categories**	**Indicator**		
	Triggering	Is there any exchange of information?		
		Any brainstorming on possible		

			solutions?		
	Exploration	Is there any use of variety of resources to explore problems posed during VC tutorials?			
		Is there any exploration of relevant information by both tutors and students?			
		Is there any collaborative exploration of content?			
		Are tutors and students appreciative of diverse perspectives?			
	Integration	Are the students using information to answer questions?			
		Are there any learning activities that assist in constructing answers or solutions?			
		Is there any sustained critical reflection within a discourse community (tutors and students?			
Teaching Presence	**Categories**	**Indicator**			
	Design and organisation	Does a tutor show indication that he developed curriculum and methods?			
		Is there any indication of tutors' communication of subject goals, methods or topics?			
	Facilitation of discourse	Are there any tutors' expectations for participation by students?			
		Is there any sharing of personal meaning between tutors and students?			
		Is there any actions reinforcing development of community (tutors and students)?			
	Direct instruction	Is there any facilitation of engagement in dialogue and exploration by tutors?			
		Is there any facilitation of focus on task and relevant issues by tutors?			

		Is there any timely feedback from the tutor?		
		Does a tutor evaluate strengths and weaknesses of students during session?		
General Comments				
General observation: (Students' attention, non-verbal clues, tutor audibility, tutor's interaction with the VC technology, tutors' eye contact, tutor's and students movements, etc.).				

APPENDIX I:

TUTORIAL OBSERVATION SCHEDULE

(Regional Learning Centre N)

Name of Regional Learning Centre	Regional Learning Centre N
Regional Learning Centre Code	N
Date of VC tutorials	13-04-2013
Number of students attending	7
Tutorial begin time	08h00
Tutorial end time	16h00

VC classroom Observation sheet

(*Key: CoI abbreviates Community of Inquiry)

*CoI Elements	Observed Aspects		YES	NO
Social Presence	*Categories*	*Indicator*		
	Open Communication	Is communication taking place between the tutor and students, and between students and students?		
	Group Cohesion	Does the tutor encourage collaboration through activities and discussions?		
		Are students comfortable with expressing their opinion and listening to others?		
		Is there any sense of trust and effective intergroup communication among tutors and students?		
	Affective/personal	Are tutors and students expressing motions and togetherness?		
		Is there any sense of belonging to a subject/module community?		

		Are tutors and students expressing motions and togetherness?		
Cognitive Presence	**Categories**	**Indicator**		
	Triggering	Is there any exchange of information?		
		Any brainstorming on possible solutions?		
	Exploration	Is there any use of variety of resources to explore problems posed during VC tutorials?		
		Is there any exploration of relevant information by both tutors and students?		
		Is there any collaborative exploration of content?		
		Are tutors and students appreciative of diverse perspectives?		
	Integration	Are the students using information to answer questions?		
		Are there any learning activities that assist in constructing answers or solutions?		
		Is there any sustained critical reflection within a discourse community (tutors and students?		
		Are the students using information to answer questions?		
Teaching Presence	**Categories**	**Indicator**		
	Design and organisation	Does a tutor show indication that he developed curriculum and methods?		

		Is there any indication of tutors' communication of subject goals, methods or topics?		
		Does a tutor show indication that he developed curriculum and methods?		
	Facilitation of discourse	Are there any tutors' expectations for participation by students?		
		Is there any sharing of personal meaning between tutors and students?		
		Is there any actions reinforcing development of community (tutors and students)?		
	Direct instruction	Is there any facilitation of engagement in dialogue and exploration by tutors?		
		Is there any facilitation of focus on task and relevant issues by tutors?		
		Is there any timely feedback from the tutor?		
		Does a tutor evaluate strengths and weaknesses of students during session?		
General Comments				
General observation: (Students' attention, non-verbal clues, tutor audibility, tutor's interaction with the VC technology, tutors' eye contact, tutor's and students movements, etc):				

APPENDIX J:

TUTORIAL OBSERVATION SCHEDULE

(Regional Learning Centre P)

Name of Regional Learning Centre	Regional Learning Centre P
Regional Learning Centre Code	P
Date of VC tutorials	23-08-2014
Number of students attending	18
Tutorial begin time	11h00
Tutorial end time	14h00

VC classroom Observation sheet

(*Key: CoI abbreviates Community of Inquiry)

*CoI Elements	Observed Aspects		YES	No
	Categories	Indicator		
Social Presence	Open Communication	Is there communication taking place between the tutor and students, and between students and students?		
	Group Cohesion	Does the tutor encourage collaboration through activities and discussions?		
		Are students comfortable with expressing their opinion and listening to others?		
		Is there any sense of trust and effective intergroup communication among tutors and students?		
	Affective/personal	Are tutors and students expressing motions and togetherness?		
		Is there any sense of belonging to a subject/module community?		
Cognitive Presence	**Categories**	**Indicator**		
	Triggering	Is there any exchange of		

		information?		
		Any brainstorming on possible solutions?		
	Exploration	Is there any use of variety of resources to explore problems posed during VC tutorials?		
		Is there any exploration of relevant information by both tutors and students?		
		Is there any collaborative exploration of content?		
		Do tutors and student appreciative of diverse perspectives?		
	Integration	Are the students using information to answer questions?		
		Are there any learning activities that assist in constructing answers or solutions?		
		Is there any sustained critical reflection within a discourse community (tutors and students?		
		Are the students using information to answer questions?		
Teaching presence	**Categories**	**Indicator**		
	Design and organisation	Does a tutor show indication that he developed curriculum and methods?		
		Is there any indication of tutors' communication of subject goals, methods or topics?		
	Facilitation of discourse	Are there any tutors' expectations for participation by students?		
		Is there any sharing of personal		

		meaning between tutors and students?		
		Is there any actions reinforcing development of community (tutors and students)?		
	Direct instruction	Is there any facilitation of engagement in dialogue and exploration by tutors?		
		Is there any facilitation of focus on task and relevant issues by tutors?		
		Is there any timely feedback from the tutor?		
		Does a tutor evaluate strengths and weaknesses of students during session?		
General observation: (Students' attention, non-verbal clues, tutor audibility, tutor's interaction with the VC technology, tutors' eye contact, tutor's and students movements, etc.).				

APPENDIX K:
INTERVIEW SCHEDULE FOR STUDENTS

My name is **Albert Tshamano Nematandani**, I am currently registered for the Master of Education (MEd) degree with the University of South Africa and have to complete a research project. I am investigating tutors' experiences of instructional methodologies application during videoconference tutorials for distance education students. As part of this process, I am interviewing participants on the project and would like to gather your perceptions on the Instructional Methodologies as applied by your tutors during VC tutorials and how you interact with your tutors and with each other in the process. The information I am collecting may be used to provide formative feedback to Regional Learning Centres of UNISA, including you as students and also to aid in dissemination and knowledge development activities to the entire UNISA staff. Your responses will be kept confidential and will not be shared with anyone in any way that identifies you as an individual. The information that you provide will be presented in the evaluation report as aggregated data only. Do you have any questions before we begin the interview?

- How do you prefer your videoconference tutor(s) to facilitate learning to you?

- Do you feel comfortable when your tutor asks questions during VC tutorial sessions?

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- Which learning methods assist you to learn actively?

- What is the nature of the VC technical problems you have experienced during tutorials attendance and how did it affect your learning?

- What are your expectations from a tutor during your VC classroom attendance?

- Share with me the challenges that you experience when you interact with your tutor during VC tutorials.

- How do you see that your tutor has prepared for the class or not?

- Is there anything else you would like to add?