

# BRIDGING THE LEARNING DISTANCE: INSTRUCTIONAL METHODOLOGIES FOR THE VIDEOCONFERENCE TUTORIALS

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## ABSTRACT

The purpose of this study was to explore the challenges which are experienced by open and distance learning (ODL) tutors in facilitating teaching and learning during the videoconference (VC) tutorials. It is believed that if these challenges can be addressed, the VC technology will serve as a facilitation tool that bridges the distance in learning. Following a phenomenological research design, this study employed interviews and observations to collect data from students and tutors engaged in the VC tutorials in an ODL institution. Four to six students per focus group based in four learning centres of an ODL institution were interviewed to determine how tutors interact with them through videoconferencing. Five VC tutorial sessions at the connecting site was attended for observations. The findings to this study highlight various factors contributory to tutors' abilities in fostering interactivity during VC tutorials; as well as the facilitation methods used in VC tutorials. This study concludes that the approaches used in the VC tutorials is ineffective and thus make interactivity impossible throughout the tutorial sessions. The study therefore suggests modification in tutor training on exploiting the VC technology and on how to integrate this technology with various suitable teaching methodologies.

**Keywords:** Videoconference, tutor, tutorials, teaching and learning strategies, instructional methodologies.

## 1.1 INTRODUCTION

The use of multimedia in the institutions of higher learning has led to an increase in the use of and reliance on interactive learning which has led to a revolution in the fundamental process of education. A study conducted in the United States (US) public universities indicates that more than 100,000 students study from all 50 states and more than 100 countries are never required to come to campus for face-to-face instructions (Bowen *et al* 2012).

In the South African context, the University of South Africa (UNISA) has shown an increasing potential in teaching students online. UNISA is recently striving towards becoming a fully-fledged Open and Distance e-Learning Institution (ODEL).

Recently UNISA is the largest university on the African continent and attracts a third of all higher education students across Southern Africa. It has student headcount of over 400 000, and

this figure includes African and international students from 130 countries worldwide, making it one of the world's mega universities ([www.unisa.ac.za](http://www.unisa.ac.za)). The University has developed a conceptual framework for technology enhanced support to its students, taking into account myUnisa communication tools, podcasting, and videoconferencing (VC) technology (UNISA 2010). The institution introduced VC in 1990 as a way of bridging the time, geographical, economical, social and educational and communication distance between student and institution, student and academics, student and study material and student and peers. This means that teaching and learning may take place despite a distance between the tutor and a student (Wilson 2004). Interactive as it is, when effectively monitored and well-coordinated, VC can potentially extend the “reach” of education beyond teaching and learning environment (Haupt 2010). Given this background, interactivity is of outmost importance in teaching with VC technology.

Of major concern in this study is that tutors seem to be unable to foster interactivity when offering VC tutorials. It is assumed that even though the institution recruits highly qualified tutors, the majority of them do not have teaching methodologies with their qualifications. They tend to lecture instead of applying tutoring skills in their tutorial offering. Although these tutors do receive tutor training, their incapability to apply various instructional methodologies still remains a challenge for interactive learning.

The present study explored the challenges which are experienced by open and distance learning (ODL) tutors in facilitating teaching and learning during the VC tutorials at the University of South Africa. There is limited research conducted on the phenomenon under investigation in this study, especially in the South African context. For example, a study by Waxman et al (2000) confirm the need for more and better research, and also call for more funding to conduct this research in the area of technology and learning. In the same vein, Roblyer and Knezek (2003) indicate that the education field lacks research on both the implications of technology for teaching and learning, and on implementation methods for instructional technology. If the correct strategies for VC tutorials can be effectively implemented, the challenges experienced by the ODL tutors will be minimised.

The following section conceptualise VC according to different literature. The study focuses on the conceptual framework of VC as a teaching tool, community of inquiry model as a framework that inform it and factors that affect tutors from enforcing interactivity as a driving force of learning.

## **1.2 CONCEPTUALISING VIDEO CONFERENCE**

The use of technology as an integral part of course design in distance education (DE) has attempted to compensate in both synchronous and asynchronous settings. For delivery of synchronous content, technology such as VC is typically used (Nilles 2007). A VC is sometimes referred to as a videoteleconference (VTC) which is a means of communication where the sound (audio) is accompanied by a live picture (video) (Andberg 2008). In essence, VC is a well-

known facility, used in business and now increasingly in education, for bringing together – synchronously, visually, aurally, parties otherwise separated geographically (Gillies 2008).

When used effectively, the VC provides both the students and tutors with benefits. VC is thus considered to be of benefit for those students who have personal circumstances which would make spending time (a full academic year) away from home on campus impossible or extremely complicated (Gillies 2008). However, Knipe and Lee (2002) argue that VC need to concentrate more on its practical advantages than focusing on the quality of teaching and learning. Saunderson and De Wet (2005) contest on the significance of VC. They see VC as a communication management tool that should not only take into account the numerous application of videoconferencing, but also consider all the implications for management. Their emphasis is on how VC tutorials should be managed rather than on how teaching and learning should take place during facilitation of learning (Saunderson and De Wet 2005). The authors in particular recommend that there is a need for a strong, clear management policy on VC utilization. In the same note, Weeks and Lessing (2002) refer to VC management as webs of social interaction management which encompass self-directed teams, participative management, knowledge management and total quality management.

Contrarily, Bollom et al (1989) emphasises the importance of interaction in the process of teaching and learning during VC tutorials, rather than the management of the tool itself

Thus there seems to be limitations in the application of some methodologies in a VC setup according to these researchers.

In their research, Bollom et al (1989) found that the potential for interactions and discussion with students rarely takes place. In this case, students are reluctant in making use of VC facility to discuss issues and raise questions. Instead, the best use of the facility was in the form of a didactic lecture. Taking this notion a step further, Kozma (2003) augmented Bollom et al (1989) by stating that, the interactivity of technologies is cited as a key feature that enables students to receive feedback on their performance, test and reflect on their ideas, and revise their understanding. Both educators and researchers agree that potential of both existing and new technologies in supporting student learning is not in the technologies themselves, or its management, but the way they are used as tools for learning (Valdez and McNabb 1999).

Videoconference can be connected through a bridge or multipoint. This means that VC systems can be connected to one another directly in a Point-to-Point session, or they can be connected in groups in what are called multipoint video conference calls ([www.streetdirectory.com](http://www.streetdirectory.com)). Three way video conference, four way video conferences and more are all called "multipoint video conferences". The term "multipoint" describes each participant as a point of connection ([www.video-conference.com](http://www.video-conference.com)). Another term that is used to mean the same thing is "multisite conferencing". In this terminology, multisite describes each video conference meeting participant as a site or location, even if they are physically in the same building (Luck 2000).

According to Wilson (2004) all of these varying terms describe a connection of multiple locations of video conferencing users into three way video conference calls or four way video conference calls and even higher numbers of video conference participants in a single video conference session. As far as McKinney (2000) is concerned, when a tutor connect to multipurpose VC, and ensure interactivity in his or her lesson, through various methodologies, then his students at far-end sites will be engaged. In the following subsection, various instructional methodologies were emphasised.

### **1.2.1. VC Instructional Methodologies**

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, disadvantages, and requires some preliminary preparation (Wehrli and Nyquist 2003). Often times, 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 seamless to the students.

Kizlik (2013), further opined that the right instructional method for a particular lesson depends on many things, and among them are 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 setup:

#### *Brainstorming sessions*

This is a process for generating multiple ideas or options in which judgement is suspended until a maximum number of ideas has been generated (Wehrli and Nyquist 2003). Students can then be tasked to come up with solutions to specific problems, then develop subsequent analysis which will enhance more collaboration between all the class members (University of Malta 2007). In the end, when the best solution has been identified, a plan of action can be developed.

Given that videoconference teaching is a visual medium and a medium to encourage interaction between all sites, the better approach is more likely to be one which encourages interaction between all sites linked to the session ([www.deakin.edu.au](http://www.deakin.edu.au)), and therefore brainstorming is one of the methods which foster such interactivity.

Although brainstorming method can lead to “group thinking” it promotes peer learning and creates synergy (Wehrli and Nyquist 2003).

### *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 (University of Malta 2007).

Accordingly, discussions can be generated by splitting the class into small groups and assigning differing material to introduce. Michinov (2012) emphasised 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 *et al* 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 set up 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 VC connection, where all the sites participate in one single discussion.

### *Problem-Based Learning (PBL)*

In Problem-Based Learning (PBL), the problem comes first and learners work through the problem through progressive disclosure by making hypotheses, exploring mechanisms, developing and researching learning issues, and applying new information to the case (University of Malta 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.wikipedia.com](http://www.wikipedia.com)). Therefore, the role of the tutor according to Robertson *et al* (2005) is to facilitate learning by supporting, guiding, and monitoring the learning process.

Robertson *et al* (2005) indicate that research shows a vast enhancement of PBL environment when VC is used in teaching and learning, especially when the tutor builds students' confidence to take on the problem, and encourage the students, while also stretching their understanding (McKinney 2000).

While the above strategies are important in ensuring interactivity during VC lesson, Tiwari (2003) concludes that methods such as Laboratory, discovery and guided approaches are not necessarily compatible with the VC teaching and learning due to the nature of VC technology,

and that they can fit well in a traditional face-to-face tutorial setup. The following section discusses the theory that informs the study.

### **1.3. COMMUNITY OF INQUIRY THEORETICAL FRAMEWORK**

In applying a community of inquiry framework in this study, we argue 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. We 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](http://www.wikipedia.org)). The CoI framework is social constructivist in nature and grounded in John Dewey's (1938) notion of practical inquiry. It is a dynamic process model designed to define, describe and measure elements supporting the development of online learning communities.

According to Garrison (2011) the 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 classroom should portray a type of community of inquiry, which leads to “questioning, reasoning, connecting, deliberating, challenging, and developing problem-solving techniques, which eventually culminate into effective interactivity (Lipman 2003). 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 and Pratt 2007). One way to minimize this loss and improve learners' sense of community is to increase participants' social presence (Carr et al 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 et al 2013). Thus 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 (Song et al 2004).

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 1). 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 2010). The next section describes the methodology followed to collect and analyse data in the study.

Figure 1: Community of inquiry model

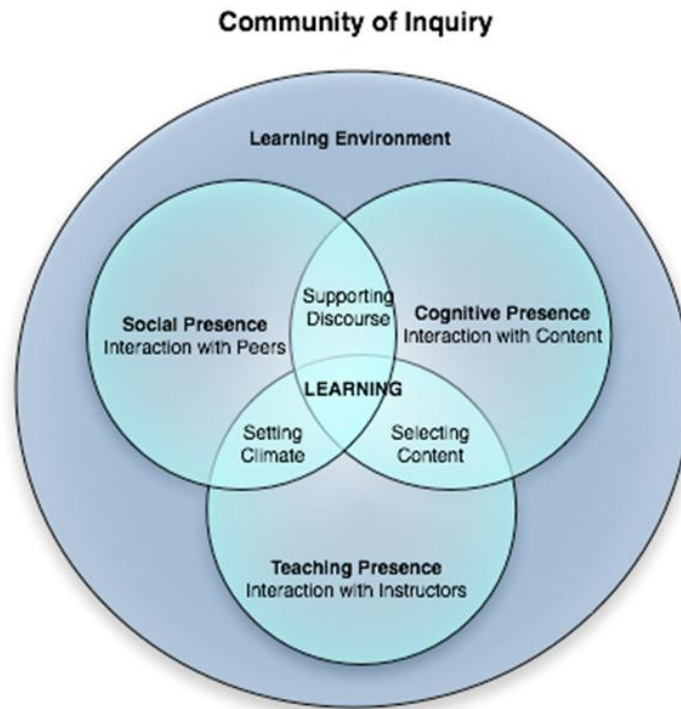


Figure adapted from R. Garrison, T. Anderson, L. Rourke et al Community of Inquiry Model [2007]

#### 1.4. AIM AND OBJECTIVES OF THE RESEARCH.

The main aim of this study was to explore the challenges which are experienced by ODL tutors in facilitating teaching and learning during the VC tutorials at the University of South Africa.

As a way to realise the objective of this study, we intended to identify the factors that can affect tutors' abilities to foster interactivity during videoconference tutorials, to analyse perceptions, feelings and personal attributes that the tutor should possess in order to ensure interactivity during videoconference tutorial sessions and to identify challenges which tutors are experiencing when offering tutorials through videoconference.

#### 1.5. METHODOLOGICAL CONSIDERATIONS

This study employed a qualitative phenomenological research design to gain a richer and deeper understanding of experiences on using VC as a mode of delivery during tutorial classes. Phenomenological methods are particularly effective at bringing to the fore the experiences and perceptions of individuals from their own perspectives (Lester 1999).



In light of the given descriptions, the perception of VC tutors regarding their facilitation strategies are explored in this study.

### **Data generation, collection and analysis**

Qualitative data was collected through the semi-structured interviews, focus group and observation of VC tutorial classes (De Vos et al 1998). Semi-structured interviews were conducted with tutors at the UNISA tutorial venue in Pretoria. In addition to the semi-structured interviews, focus group interviews were also conducted with students. Four to six students per focus group based in the learning centres of Bloemfontein, Durban, Nelspruit and Port Elizabeth were interviewed to determine how tutors interact with them through videoconferencing. A set of predetermined questions were prepared and used to guide all the interviews (semi-structured and focus group). For observations, we attended five VC tutorial sessions as per schedule, at the main campus in Pretoria. In these sessions four learning centres visited before: Bloemfontein, Durban, Nelspruit and Port Elizabeth, were connected to the main campus VC. The observations assisted in establishing how students engage with the tutor during the tutorial sessions (interactivity).

Participants to this study were purposefully selected, because our intention was to find information-rich key informants, groups, places, or events to study (McMillan et al 2001; Cresswell 1994). In other words, these samples are chosen because they are likely to be knowledgeable and informative about the phenomena the researchers are investigating. The participants' responses were recorded on an audiotape and thereafter transcribed (De Vos et al 1998). The interviews were then organised thematically before they were analysed. In the next section, the findings of the study are presented.

## **1.6 FINDINGS**

The purpose of this study was to explore the challenges experienced by tutors when facilitating the VC tutorial classes. The objectives formulated for the purpose of conducting this study were: to identify factors that affect tutors' abilities to foster interactivity during VC tutorials; and to examine the facilitation methods pertinent to videoconferencing.

For the purpose of this study the findings were discussed under the objectives of the study as highlighted in the previous sections.

### *Factors affecting tutors' abilities to foster interactivity during VC tutorials*

Effective management and class control became difficult for the tutors during the VC sessions. These may result from various factors that negatively affect the smooth running of the VC. These factors may in turn affect the smooth running of the lesson. One of the disturbing factors discovered during the VC sessions was the noise that was audible from the other sites of the connected centres. However, the tutor under observation ignored this noise and continued with



the tutorial, this undoubtedly affected the students' concentration. It is evident from the observation that due to this disturbance some of the students kept themselves busy with other activities that were not tutorial related. For an example, some students were observed chatting from their cell phones. This finding would mean that not all the students are actively involved in the tutorial sessions; some of them become passive listeners. To show the element of passiveness, some of the students went to an extent of sleeping during the tutorial session, and others engage themselves in social talks.

It shows that noise was not the only disturbing factor. There are other factors that were mentioned by participants in the study, for example technical failure. To be specific, one of the participants in the semi-structured interviews, Masindi experienced the challenge of technical failure and he responded in this way: *“mhh, technical failure I think... Ee, the electricity here sometimes go away when I am busy, it came back, but VC was difficult to connect again, you press this and that...but still it says error”*.

Rain was indicated as another factor contributory to the disruption of the smooth running of the sessions. In one of the observations conducted in this study, it was discovered that due to rain the VC became functional for thirty minutes only rather than running for the expected time; the end of the scheduled session. Due to this interruption, some of the operating systems of the VC became dysfunctional. For example, there was a communication breakdown between the tutor and the students' side. It became difficult for the tutor to hear what students were saying, what was audible was just noise from the students connected sites. It shows that students themselves were able to hear the tutor because whenever the tutor poses a question, they became quite.

These factors does not impact negatively to students' concentration only, they also affect the time scheduled for the sessions. Normally the sessions are scheduled for two hours. It is the feeling of the participants in the semi-structured interviews that two hours for a session is insufficient because in most cases participants spend the first hour of the session struggling with the operations and connectivity of the VC technology. This sometimes frustrates tutors as the technicians may not always be available in the VC room during the sessions. This would mean that the tutor concerned may end up not covering his or her scope of work as planned. To be clear, Mufunwa one of the participants in the semi-structured interviews, experienced the similar frustrations while using the VC technology. He therefore explains that: *“I travel all the way from Mamelodi, to get to the venue, struggle with VC to connect, and it connects only in the last thirty minutes, whats' the use?”*

The frustration was also 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 (English). These findings are in line with Chipps (2010) who recommends that tutors need to be orientated on using PowerPoint slides when facilitating tutorials.

*Facilitation methods used in VC tutorials*

The facilitation methods tutors apply during the VC tutorial sessions seem to be ineffective. Participants under observation show limited knowledge of selecting and using appropriate instructional methodologies that will actively engage students in the VC tutorial sessions. The tutors under observation were found to be seated, explaining the concepts from the text book in a passive and static manner; and there was no indication of non-verbal cues on the part of the tutors.

From the focus groups, participants from all the selected UNISA learning centres felt that the facilitation methods used by tutors during VC tutorial sessions are not appropriate to the learning and understanding of concepts. These participants emphasised the importance of being engaged in the lesson. They raised a concern of tutors reading directly from the text books, instead of making the lesson interactive. Participants further suggested the usage of question and answer methods during the VC sessions. They are of the opinion that if question and answer method could be used in the VC tutorial sessions, their understanding of the lesson would be enhanced.

Participants from the semi-structured interviews were able to mention the methods they use for instruction. These include methods such as peer collaboration, buzz group and text book. Participants select these methods because they believe that in VC tutorial classes, is where less movement is used, and for this reason they sit when tutoring. An example of how participants respond to their choice of facilitation methods was indicated by one of the participants in the semi-structured interviews Vele, who explains that: *“For me tutoring is tutoring, I always read examples from the study guide and my students understand”*.

Though participants in the semi-structured interviews mentioned few methods they use, there are some challenges they experience with regard to some methods used during the VC sessions. Lereko, one of the participants in this study elaborates on this aspect by stating that: *“I try to apply group work method, but I could not monitor activities I gave them to work on. I was not sure if they are working on them or they doing their own things. One student even answered the cell phone in the class but I asked him to go out – eeh so yea...”*

## **1.7 DISCUSSIONS**

From the semi-structured interviews with tutors, it is noted that tutors are experiencing some challenges in using the correct facilitation methods that will enhance students' learning. Though some tutors make efforts to use some of the facilitation methods they regard important to the VC tutorials, there were still challenges experienced with the technology itself. To overcome these challenges, tutors need to show some expertise of teaching through the technology. In support of this view is Wilson (2004) who states that the effective use of modern videoconferencing strategies depends on presentation expertise of tutors. Tutors in this study grapple with questions around effectiveness and engagement, they seem to be confused on whether learning happens by

reading texts or viewing lectures online, whether it happens through discussions with peers and facilitators, or through self-organized study groups or chat sessions.

From the focus group interviews, students felt less engaged in VC tutorial sessions which had a limited element of interaction. They were passive to an extent that they kept themselves busy with other activities such as cell phone chats, social talks and sleeping. In this notion, Abtar (2004) noted that students' participation is often minimal without an instructor's participation.

She suggested that planned, focused and guided online discussions can result in successful learning experience. At the very heart of the matter is the broadly accepted view that students learn best in the context of networks or communities of other students (Cormier 2010).

Furthermore, we see the choice of tutoring methodologies by VC tutors as important in the consolidation of interactivity. For the fact that UNISA follows a multi connection system where various centres are connected to the main centre, methods such as problem- based, discovery methods, group discussions can be employed in VC tutoring. In light of the above discussion, the CoI model fit well in this study as it looks at learning in three elements: social presence, cognitive presence, teaching presence.

The first element which is referred to as the social presence, relates to the creation of a supportive environment in which learners feel able to express their ideas and collaborate on construction of new knowledge. In the absence of social presence, learners feel unable to disagree, share viewpoints, explore differences or accept support and confirmation from peers or tutors. In the VC setup, a tutor has an academic responsibility to create a supportive environment for students to constructively argue on module content, debate, and express viewpoints and collaborate. The second element is the cognitive presence. This element is the creation of an environment that promotes critical thinking in relation to the content area at hand. In essence, it is an extent to which students are able to construct and confirm meaning through sustained reflection and discourse. In the cognitive presence, the interaction takes place between students and the course content. Students should be able to cognitively engage, communicate with and interpret the study material with the help of a tutor.

The third element, teaching presence describes the creation of an instructional relationship appropriate to the learning community and the topic at hand. Teaching presence includes the design, facilitation, and direction of cognitive and social processes for the purpose of realizing personally meaningful and educational worthwhile learning outcomes. Interaction in this element takes place between students and tutors. Subsequent to the above notion, we therefore argue that, if tutors employ CoI model in their tutorial offerings, where a tutor create an atmosphere of social presence for students to interact, facilitate cognitive presence and emphasise teaching presence through collaborative inquiry(Anderson et al 2001), then effective learning through VC technology is possible.

## 1.8. RECOMMENDATION

It is more apparent that tutors who do not have relevant qualification (e.g. in teaching) need to top-up their qualifications with teaching methodologies.

Based on the findings of this study, recommendations would allow more research to be conducted. All tutors, at UNISA, are required to undergo a one day training which is normally organised in the form of a Tutor Development Workshop (TDW) soon after appointed. But this initiative is not enough for them to have mastered the necessary skills of employing relevant methods of teaching, more especially those methods which are relevant to VC setup. These shortfalls warrant a need for training on how to operate the technology. There should also be training offered to tutors on how to integrate VC technology with various teaching methods and strategies such as problem-based and small group discussions. The use of VC in the ODL institutions of higher learning should be accelerated in order to bridge the distance between the student and tutor. To bridge this distance, attention should be given to tutor facilitation skills in order to make the VC technology not only available, but commonly used in under-resourced areas.

## 1.9. CONCLUSION

In this study, we explored the challenges experienced by the ODL tutors in facilitating lessons during the VC tutorials. The objectives of the study were to identify factors that affect tutors' abilities to foster interactivity during VC tutorials; and to examine the facilitation methods pertinent to videoconferencing. Overall, the results show that tutors rely solely on reading from prescribed materials because not all tutors employed by the institution are teachers by profession. To some of the tutors it is virtually a challenge to ask questions and to receive feedback through the VC medium. A fact to be considered in this study is that tutors are not trained in the operation of the VC technology as such they could not increase the volume of the equipment to an extent that they accidentally switched it off.

There are limitations to this study. The limitations results in the sense that only five UNISA regional centres were involved in the study, therefore the findings of this study cannot be generalised for the entire population at UNISA.

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