

Tele-Proximity: The Experienced Educator Perspective on Human to Human Connection in Distance Education

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**This thesis is submitted in partial fulfillment of the requirements for the degree
of Doctor of Philosophy.**

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Tele-Proximity: The Experienced Educator Perspective on Human to Human Connection in Distance Education

Doctor of Philosophy, August, 2013

Abstract

Distance education is an integral part of many universities worldwide, aiming to offer students opportunities for life-long learning and equitable access. Distant learners face many barriers and as a result, they drop out more frequently than on-campus students. Educators seem to be equally affected by the ‘transactional distance’ and the new digital skills needed for teaching online. The **purpose** of this study is to explore the educators’ perspective on how synchronous video communication (SVC) could offer alternative educational forms for distance learning. Specifically the study aims to fill gaps in the existing research literature: to describe synchronous teaching approaches that are used worldwide to support e-learners, to investigate the role of the educator, to discover how learning and subject content are affected by SVC, to see if it enhances the sense of togetherness (immediacy and intimacy) to specify the contextual factors influencing teaching and learning synchronously, and to formulate a theory. The **Informed Grounded Theory** (Thornberg, 2012) and the **Community of Inquiry model** (Garrison, Anderson & Archer, 2000) provided a scaffolding framework for designing interview questions and analysing findings.

The findings of the study illustrate the **empirical evidence of the value of SVC**, its **potential forms** (teaching approaches), **possibilities** (linking educational purposes to the medium) and **contextual factors** (University policy, time zones, technologies, learning objectives, educator and student identities). Specifically, audiovisual cues

have an impact on educators, the learning process and immediacy. The theory of **Tele-proximity** formulated to explain how educators and students are connected in synchronous networked environment via tele-operations. The study aims at helping educators/instructional designers, and administrators to face the difficulties of transactional distance and make informed decisions about synchronous video enhanced communication. Researchers may use Tele-proximity as a heuristic tool to continue the scientific dialogue on the potential of synchronous video-enhanced technologies in distance education.

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List of Abbreviations

CGT	Constructivist Grounded Theory
CMC	Computer Mediated Communication
CoI	Community of Inquiry Model
DE	Distance Education
EC	Embodied Cognition
GT	Grounded Theory
HE	Higher Education
ICT	Information & Communications Technologies
IGT	Informed Grounded Theory
NL	Networked Learning
NTTL	Neural Theory of Thought and Language
SVC	Synchronous Video Communication
SV	Synchronous Video
Tele-CoI	Tele-Community of Inquiry Model
TDT	Transactional Distance Theory
TCP	Tele-cognitive Presence
TSP	Tele-social Presence
TTP	Tele-teacher Presence
VC	Videoconferencing

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Chapter 1: Introduction and Background

This chapter frames the aims and the limitations of the study and discusses synchronous video communication (SVC) in the context of the networked learning and social learning theories/pedagogies. The purpose of this research is to formulate a theory of synchronous video mediated scenarios for supporting distant learners. The field in which the research took place is networked learning interdisciplinary courses for undergraduates and postgraduates, from an international perspective, since the interviewees come from four continents and ten countries (the UK, the USA, Australia, Canada, France, Greece, Cyprus, South Korea, South Africa and Spain). Following the guidelines of Informed Grounded Theory (Thornberg, 2012) and the Community of Inquiry model (Garrison, Anderson & Archer, 2000), the interview questions were designed to discover for what educational purposes and pedagogic models, educators use synchronous teaching approaches, how synchronicity in online environment affects teaching (educator's role), cognitive (learning) and social (connections among learners or between educator and learners) presence and which contextual factors influence them. The target audience could be educators, instructional designers, teacher trainers, and researchers that are interested in using or investigating synchronous video enhanced praxis for distance education courses.

1.1 Wider contextual framework: Networked learning

Distance education has taken global proportions and more and more people worldwide are studying in an 'anytime anywhere' mode (Allen & Seaman, 2008; Bedford, 2009; Power & Gould-Morven, 2011). A particular genre of such technologically assisted education has come to be called 'networked learning'

(Steeple & Jones, 2002). **Networked learning (NL)** is defined as: “learning in which information and communication technologies (ICT) are used to promote connections: between one learner and other learners; between learners and educators; between a learning community and its learning resources” (Goodyear, Jones, Asensio, Hodgson & Steeples, 2005, p.473). NL can be regarded as theory and praxis “for a pedagogy that is appropriate or suited to live in a digitally connected and networked world where sharing and collaborative ways of working are the norm rather than the exception” (Dirckinck-Holmfeld, Hodgson & McConnell, 2011, p.292). Despite the fact that most interactions so far are text based and asynchronous, the NL perspective employs a dialogic approach (Hodgson & Watland, 2004), and a democratic relational view on agency (Jones & Esnault, 2004). Agency shapes processes by intentions and actions of humans (Dirckinck-Holmfeld et al., 2011). In other words, “The use of online material is not a sufficient characteristic to define networked learning” (Hodgson, McConnell & Dirckinck-Holmfeld, 2012, p.7). “Human–human interaction is an essential part of networked learning” (Goodyear et al., 2005, p.474).

Answering the question “what constitutes a useful design for networked learning”, David McConnell suggested pedagogical concerns that need to be addressed when designing courses (Hodgson et al., 2012). Openness of the educational process, self-determined learning and real purpose in the co-operative processes were identified as factors that create a supportive learning environment in which collaborative assessment is an ongoing learning process. In the same line of thought, Hodgson and Watland (2004) agree that collaboration and interaction supported by technology is the defining feature of networked management learning as an educational approach.

Hodgson and her colleagues (2012) summarize the development of networked learning by identifying an educational philosophy that has emerged out of educational theories and approaches that can be portrayed as radical, emancipatory, and humanistic. The NL philosophy is explained as critical pedagogy, democratic approach to teaching and learning, and experiential learning. They see networked learning as an approach exploring the socio-cultural designs of learning as mediated by ICT and enacted by networked learning participants. NL theorists support the view that the global economy that is based on information and social networks, demands a transformation of higher education. Therefore, practice and pedagogy of networked learning can contribute to this transformation (Dirckinck-Holmfeld et al., 2011). Whether SVC could play a role in the potential transformation of distance education remains to be seen but the rapid technological progress and high market demand show that it is a field that needs to be studied thoroughly.

1.2 Underlining theoretical framework

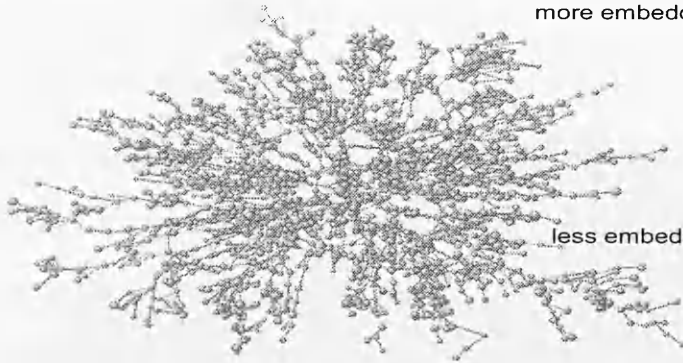
1.2.1 Connections

While connecting human to human and information, networked learning exploits the power of networks. Christakis and Fowler (2009) studied the power of networks and found out that networks have a surprising power to alter norms, behaviours and information exchange. They claim that a network is like a super organism that is greater than the sum of its part. A network is not the sum of a group of people, it includes something more, connections that can be regarded as ties. The particular pattern of ties (topology) within the network can be regarded as responsible for achieving more in educational field and everyday life. For instance, weak ties have been identified as an enabling factor in social activism and the building of ‘social

capital' (Kavanagh, Rees, Carroll & Rosson, 2003). The topology of the network can vary but what seem to be common, are connections (to whom) and the contagion which disseminates information, behaviours, feelings, and norms.

Line = a relationship between two people

more embedded = central



less embedded = periphery

Node = a person

“**embedded**”: the degree to which a person is connected within a network

Figure 1.1: Description of a network (Christakis & Fowler, 2009)

Figure 1.1 depicts the relational approach of networks and the degree to which a person is connected within a network either centrally or peripherally.

“To know who we are, we must understand how we are connected” (Christakis & Fowler, 2009, p. xiii). Under the light of this concept, educators and learners are part of a networked organism in distant learning that allows participants to see themselves in different roles, affecting others or being affected in complex ways.

At this point, Christakis and Fowler’s work overlaps, up to a point, with the social learning theories such as Wenger (Community of practice), constructivism (Honebein, 1996; Kanuka & Anderson, 1999) and connectivism (Siemens, 2004).

Knowledge is a competence with respect to valued enterprises – such as singing in tune, discovering scientific facts, fixing machines, writing poetry, being convivial, and so forth (Wenger, 1998). Wenger claims that knowing is a process of participation and active engagement in the world and meaning is based on our ability to experience engagement and interpret it mindfully (Wenger, 1998).

In a similar vein, social constructivism places an emphasis on the importance of social interactions in affecting the individual's generation of knowledge or perceptions about the world. "The whole is greater than the sum of the parts and knowledge becomes a cultural artefact, associated with groups within a specific context" (Bell, 2011, p.101). Although there are many different types of constructivism that are implemented in the field of distance education, they have common themes. New knowledge is built upon the foundation of previous learning and active engagement with language and tools could construct meaning. Meta-cognition and learners' capacity to evaluate and choose course and degree of participation, while students and educators alike appreciate multiple perspectives in social dialogue, is considered to be the core of validation and application in real world contexts (Honebein, 1996; Kanuka & Anderson, 1999).

The third generation of distance education pedagogy is considered by some theorists to be Connectivism (Anderson & Dron, 2010). Connectivism, whether it is regarded as pedagogy, learning theory or a phenomenon, highlights knowledge construction and generation through humans and non-human appliances within networks (Downes, 2007b). There are many variations but the common themes include that learning and knowledge rest in diversity of critical opinions and may reside in non-human appliances as a process of connecting specialized nodes or information sources. The

focal point of Siemens' theory is the learner's ability to see, nurture and update connections in order to make informed decisions in a fast pacing information climate (Siemens, 2004).

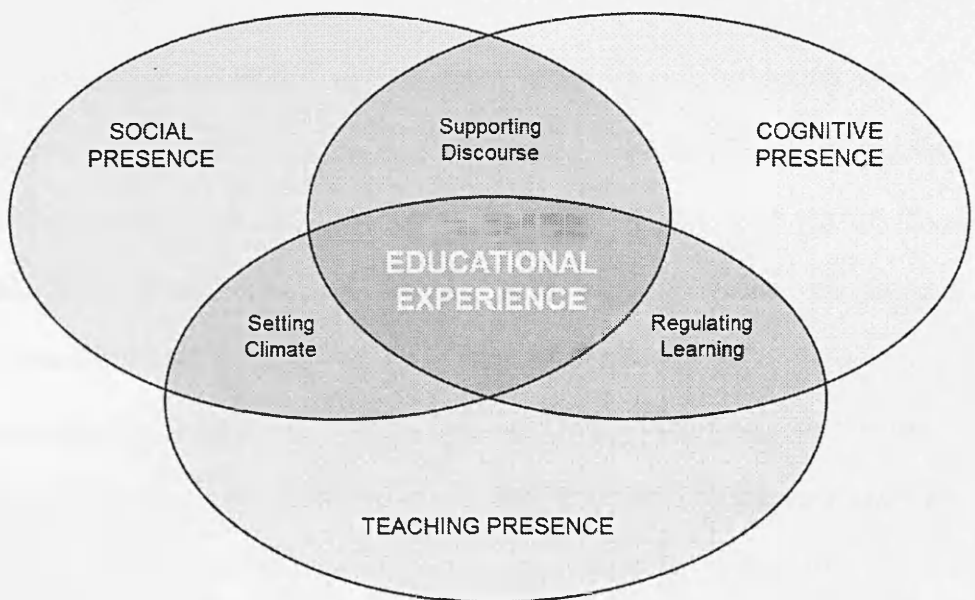
There is a big range of social theories; the ones presented are related to the democratic form of learning that focuses on building networks (relationships) with humans and information. As Greenhow, Robelia, and Hughes (2009) and others have argued, learning is located in contexts and relationships rather than merely in the minds of individuals.

The powers of the network as investigated by Christakis and Fowler, social learning theories such as community of practice constructionism and connectivism offer perspectives on the distribution of learning across networks of people -and tools as far as connectivism is concerned- and the capacity of learners to be active. Learners and educators are in a stage of rapid technological development and profound new discoveries of life and learning in connected contexts (Anderson & Dron, 2010). All the presented theories influence the way the distance education courses are designed.

The specific study within the framework of network learning focuses on synchronous human connections, whether it is between two people or among more. In other words, my role as a researcher in this study is to overview how human agents are present cognitively, socially or instructionally via synchronous, video enhanced communication and how educational purposes are served and pedagogic models are used.

1.2.2 Online presences

The presence in the network can be defined as active participation. Presence - or having a sense of active participation - in distance education has increased with the expanding use and affordances of communication technologies (McKerlich, Riis, Anderson, & Eastman, 2011). For the study of synchronous video enhanced communication the Community of Inquiry model (CoI) was utilized to formulate the interview research questions and develop categorization of concepts within the boundaries of grounded theories. Figure 1.2 depicts the Community of Inquiry model as confluence of three distinct types of presence; social, cognitive and teaching presence (Garrison, Anderson & Archer, 2000), which sets the climate, selects the content, structure and supports discourse for the educational experience.



Communication Medium

Figure 1.2: Elements of an Educational Experience (Garrison et al., 2000, p.88)

In figure 1.2 Garrison, Anderson and Archer (2000) argue that three aspects of computer-mediated communication are needed for any educational transaction: **cognitive presence, social presence and teaching presence**. To illustrate, **cognitive presence** can be defined as the learning process through which learners negotiate meaning and construct new knowledge. Synchronous communication is characterized by different discourse features and may serve specific pedagogical purposes (Romiszowski & Mason, 2004). Harasim (1992) maintains that in order to help individuals' effective knowledge building through computer-mediated interaction, adequate tools in computer conferencing systems need to be deployed, which support not only divergent idea-generating, but also convergent idea-linking and restructuring activities.

Social presence can be defined as “the ability of participants to identify with the community (e.g. course of study), communicate purposefully in a trusting environment, and develop inter-personal relationships by way of projecting their individual personalities” (Garrison, 2009, p. 352). Short, Williams, and Christie (1976) describe social presence as the ability of a medium to allow people to experience the actual presence of a communicator. Gillies (2008) suggests that social presence is the element that could be maximized during videoconference sessions. Gunawardena and Zittle (1997) related *intimacy* and *immediacy* to social presence, claiming that feelings associated with social presence are a predictor of learner satisfaction in online environments. Social presence is affected by the media: “the degree of online social presence is based on the characteristics of the medium and the user’s perception” (Sung & Mayer, 2012, p.1739). Intimacy, introduced by Argyle and Dean (1965), entails nonverbal factors such as physical distance, eye contact,

physical proximity, smiling, facial expression and personal topic of conversation (Gunawardena & Zittle, 1997; Tu & McIssac, 2002). Immediacy, as described by Wiener and Mehrabian (1968), is the psychological distance between a communicator and the recipient of the communication. Immediacy relies on verbal as well as nonverbal cues (Tu & McIssac, 2002).

Teaching presence is “the design, facilitation, and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes” (Anderson, Rourke, Garrison, & Archer, 2001, p.8). The authors of CoI underline the importance of face-to face experiences: “when designing an educational experience supported by computer conferencing, consideration should be given to an initial face-to-face meeting where relationships and a comfort level can be established” (Garrison et al., 2000, p. 97).

Table: 1.1

Community of Inquiry Coding Template

Elements	Categories	Indicators (examples only)
Cognitive Presence	Triggering Event	Sense of puzzlement
	Exploration	Information exchange
	Integration	Connecting ideas
	Resolution	Apply new ideas
Social Presence	Emotional Expression	Emoticons
	Open Communication	Risk-free expression
	Group Cohesion	Encouraging collaboration
Teaching Presence	Instructional Management	Defining & initiating discussion topics
	Building Understanding	Sharing personal meaning
	Direct Instruction	Focusing discussion

(Garrison, Anderson, & Archer, 2000, p. 4)

Table 1.1 gives an example of categorization for online presences and relates indicators for research purposes.

The following research questions were inspired by networked learning connection, Transactional Distance Theory - the closeness of the connections between participants in an online NL environment, and the degree to which this enables them or hampers their ability to construct knowledge and facilitate understanding (Moore, 1980)- and the Community of Inquiry model, to formulate a theory of SVC potentials based on the empirical support of educators.

1.3 Research purposes & questions

The need to study the specific research question is to find video enhanced teaching approaches, forms and possibilities for supporting distant learners that are to enter higher education or vocational training and are well-experienced with video (video-literate). The gaps that need to be filled are: to explore teaching approaches that are used to support e-learners, to gain insight from investigating the role of educator (teacher presence) from an educator perspective, to discover how learning and the subject content (cognitive presence) are affected by SVC, to see if the sense of togetherness (immediacy and intimacy) is affected, to specify the contextual factors influencing teaching and learning synchronously, to formulate a theory of praxis that could be used for future research and vocational training of networked learning educators or students.

1.3.1 Originality and possible contributions of the research

Though distance education is expanding in all continents, SVC has not been an option thoroughly investigated (Saw et al., 2008; Hrastinski, Keller & Carlsson, 2010; Smyth, 2011). Hrastinski heightens the need for more research attention to synchronous e-learning because practitioners, who use and design synchronous learning scenarios, are in urgent need of guidance (Hrastinski et al., 2010) and they do not use them as widely as they could to enhance communication (Smyth, Andrews, Bordujenko & Caladine, 2011; Bower et al., 2012). In the same line of thought, Tomadaki and her colleagues indicate that greater integration of videoconferencing with open learning environments and other social media tools needs to be studied to make better sense to learners (Tomadaki, Quick & Scott, 2008) and Gillies (2008) deems that transferring face-to-face approaches to the videoconferencing suite is inadequate. Furthermore, the literature in the field of video enhanced synchronicity is, to a large degree, uncharted and unorganized (Bower et al., 2012). In short, while video *is* everywhere, the mandate for educators could be expanded to include creative and critical attention to its emergent new roles, forms, and possibilities (Willis, 2009).

1.3.2 Research questions

Njenga, Fourie (2008) and Parchoma (2011) suggest shifting our attention from actual educational technology as it advances to technology's educational functions and the effects it has on the functions of teaching and learning. Therefore, the study does not focus on specific tools such as desktop videoconferencing or web conferencing, but on the way synchronous video enhanced communication functions for distance education. Thus, the informants of my study needed to have significant experience

with online video communication because the degree of experience with online education breaks down barriers to education (Lloyd, Byrne & McCoy, 2012). Therefore, the experienced research sample could focus on teaching and learning without taking into account the difficulties novice educators face with tools. With the above background in mind, the overall research questions being addressed are:

- For what educational purposes and pedagogic models do educators use online synchronous (via tele-operations) teaching approaches?
- How does online synchronicity (via tele-operations) affect teaching, cognitive and social presence?
- What contextual factors do educators identify as influencing their use of online synchronous (via tele-operations) teaching approaches?

The research questions focus on the educational purposes, emergent forms and possibilities that educators perceive as important to support distant learners and reduce isolation. It is worth repeating that the study is human-centred. Human to Human interaction in educational environment is also underlined in Garrison, Anderson and Archer's (2000) instructional model for computer mediated communication. The findings aim to be descriptive and explanatory as well. The educators' responses could shed a new light in the field of synchronicity (via tele-operations); and when compared with literature review, an explanatory theory of synchronous pedagogic praxis, emergent forms and possibilities could be originated.

1.4 Scope and limitation of the research

An interdisciplinary approach was adopted based on Informed Grounded Theory to investigate the multiple forms of synchronous video communication. It was imperative to elicit information from the lived experiences of the limited number of educators that use synchronous video communication (SVC) to serve various educational purposes in different academic settings. The findings of the study cannot be used as a ‘best practices guide’ due to the fact that it is in conflict with the epistemology and ontology of the study as explained in the following methodology Chapter 3. The subjective perceptions and the diverse nature of NL communities make it unrealistic to focus on a singularity paradigm and proposing very specific guidelines for potential problems. On the contrary, by depicting diverse and potential alternatives, the investigation gives the readers relevant information to choose what is needed for different contexts and educational purposes.

Another reason that the formation of theory cannot be considered as best practice is the fact that the rapid pace of technology and science has accelerated the process of information decay; which means that if educational framework and instructional designs are locked in the room of best practice, they will inevitably lose the race of innovation and creativity in a world that moves towards greater diversity. Therefore, the specific study does not have the goal of consistency worldwide but of diversity by showing alternative forms and possibilities of SVC. Otherwise, excluding philosophically informed pedagogical debates on “theories and models, modes of delivery, instructional roles, instructional designs, and learning processes and outcomes” (Harasim, 2006, p. 59) in order to homogenize e-learning into a singularity

paradigm could create more problems than the ones it was designed to solve (Parchoma, 2011).

Parchoma (2011, p.63) draws on the work of scholars and maintains that “e-learning singularity paradigm evades philosophically informed, discipline-aware, research-based innovation and practice”. She takes it further, claiming that privileging the goal of consistency in student e-learning experiences involves all forms of information and communications technology -mediated teaching, learning, and learning communities should, over time, converge into a limited set of identifiable, manageable best practices which have been associated with a series of e-learning adoptions gone wrong in higher education (Greener & Perriton, 2005; Laurillard, 2008, Parchoma, 2011).

As Parchoma hopes the continued exploration will lead to “a future where the persistence of e-learning communities in higher education is not a fate one must choose for or against, but as a site for political, social, technological, pedagogical, and philosophical creativity directed toward ongoing understanding of dynamic, networked teaching and learning experiences” (Parchoma, 2011, p.81). Thus, an explorative map is to be constructed based on the insight of the research participants, explaining their storylines and lived experiences without being prescriptive as best practices assume nor merely descriptive as some critiques of grounded theory suggest but formulating an explanatory theory of emergent forms and possibilities for SCV relating teaching approaches, pedagogy, learning theories, online presences (teacher, cognitive and social) and real life praxis.

1.5 Research approach

The Grounded Theory (GT) was explored, in order to answer the researcher's questions and interpret data. The frame is a mixture of grounded theory as presented by Glaser (1978, 1998, and 2005), Strauss and Corbin (1990; 1998), Corbin and Strauss (2008), Charmaz (2000, 2006, 2008), Thornberg and Charmaz (2012), Thornberg (2012) and Dunne (2011). Therefore, the methodology could be defined as Informed Grounded Theory. Methodology is identified and described through the lens of the researcher's epistemology and ontology (Annells, 1996). Informed Grounded Theory has provided a set of methods for novice researchers to map the substantive area and to formulate a theory, step by step. Semi-structured interviews via Skype were processes I have chosen to approach research participants, the early adopters of synchronous video enhanced tools. The structure of Chapters reflects the development of the research process to make clear to my audience what I have done and how I have reached the theory formation. My role as a researcher was seen through Aristotelian rhetorical appeals that promote ethos (trustworthiness or credibility of the speaker/researcher), logos (logic of its reasons) and pathos (the power with which the investigator's questions stimulate memories of best and worst instructional experiences) without assuming exact parallelism but moving towards the 'telos' of research (the end of a destination).

1.6 Target audience

Educators, instructional designers, administrators, e-developers may find the research useful in understanding SVC and the relevant teaching approaches, pedagogies and its influence on cognitive, social and teaching presences. Moreover, e-learning trainers may be interested in aspects relating to the educators' role in synchronous online

learning communities and to their competence development. Policymakers may also be interested in the implications and contextual factors affecting educators' performance in synchronous environments. Researchers may work on the analysis of indicators for the three online presences as embodied (video-enhanced) learning experiences and resulting Tele-Community of Inquiry model as a heuristic tool.

1.7 Summary of chapter 1

The introductory chapter describes Networked Learning as the wider contextual framework. Networked Learning in distance education attempts to reduce the spatial gap by human to human connections. The underlined theories related to connecting people – Connectivism, Community of Practice, Community of Inquiry, Constructivism- explore the powers of networks in affecting learning, norms and behaviours and propose active participation and engagement in collaborative tasks. Having to face distance, learners and educators could communicate synchronously and thus, the research questions explore the educational purposes and synchronous teaching approaches, online presences and the contextual factors that influence them. Research outcomes could help educators/instructional designers and policy makers make more informed choices on how to use synchronous video communication and researchers study the field of synchronicity more intensively.

1.8 Overview of the thesis

- ❖ Chapter 2: Discusses literature on concepts related to the research questions to better understand findings.

- ❖ Chapter 3: Discusses methodology and methods, the research design, data collection and analysis. It looks at the role of the researcher and explains the ethics of the study.
- ❖ Chapter 4: Presents the findings, based on the framework of open coding/grounded theory.
- ❖ Chapter 5: Re-arranges data in the framework of the CoI model and makes connections between categories.
- ❖ Chapter 6: Formulates a theory of praxis for synchronous teaching approaches called Tele-proximity
- ❖ Chapter 7: Concludes by providing answers to the research questions, and considers implications for practice and direction for future research.
- ❖ References

Chapter 2: Literature Review

The research questions identified in the previous chapter (section: 1.3.2) underline the need for both educators and students to cope with the difficulties of communicating at a distance. Therefore, my literature review focuses on concepts and studies related to distance education and synchronous approaches for teaching and learning. The literature review functions as a ‘contextualization process’ to explore the geography of the field which is uncharted and unorganized (Bower et al., 2012).

I begin by introducing the concept of **transactional distance** and reviewing the relevant literature. I discuss the notion of ‘place’ in the SVC environment in contrast to the concept of ‘being there’ and talk about the new ‘stage’ upon which synchronous transactional interactions are built. Transactional distance is seen as a key dimension of the context of networked learning (NL) upon which different factors could have an impact.

The second part introduces the **Community of Inquiry (CoI)** theoretical framework (Garrison et al., 2000) which was used as the scaffolding mechanism for building a theory of synchronous praxis in my analysis Chapters 5 and 6. I discuss critically, the CoI framework in terms of its applicability to synchronous video enhanced environments and review the existing literature on CoI in order to identify gaps in the evidence related to synchronicity.

The third part discusses the **gaps identified in SVC studies** which have led to my research questions.

The fourth part enlists technologies and **synchronous teaching approaches** that educators can implement in distance education. The **practical pros and cons of video-mediated communication** are regarded as potential factors that could influence networked learning.

2.1 Transactional distance

Transactional distance theory (TDT) refers to the closeness of the connections between participants in an online NL environment, and the degree to which this enables them or hampers their ability to construct knowledge and facilitate understanding (Moore, 1980). Jacquinot (1993) expressed the view that “distance can be managed” and “absence can be eliminated” in the field of distance education. Moore’s theory conceptualizes transactional distance as “a psychological and communications space to be crossed, a space of potential misunderstanding between the inputs of educator and those of the learner” (Moore, 1993, p. 22). The psychological aspect of distance is described by Wiener and Mehrabian (1968), as immediacy, an indicator of social presence (chapter 1.2.2). It could influence synchronous and asynchronous means of communication. The Transactional Distance Theory (TDT) argues that the distance in distance education is transactional and not solely spatial or temporal (Gorsky & Caspi, 2005). Peters (1998) defined it as communication of mental distance. Moore (1993, 2002) analysed transactional distance in relation to the interactions that exist within an instructional design. The core elements of transactional distance are dialogue, structure and learner’s autonomy. The content of the course, the nature of the medium of delivery, the philosophy and emotional characteristics of teachers, and the learners’ personalities

have a direct effect on the quality of the dialogue, and the gap of transactional distance (Moore & Kearsley, 1996; Orapin, Gray & Williams, 2007; Aluko, Hendrikz & Fraser, 2011). What seems to be clear is that the interactive nature of the medium is a determinant of dialogue in the teaching-learning environment, and by manipulating the communication media, dialogue can be increased and thus transactional distance may be reduced (Mueller, 1997). Consequently, synchronous media have an influential role in reducing the gap - along with other contextual factors.

Many researchers, including the authors of the CoI model (Anderson & Garrison, 1995), deem it to be a basic analytic framework for understanding DE (Gorsky & Caspi, 2005) and build hypotheses related to it (Jung, 2001). As a result, many research projects attempted, and others are still working on bridging transactional distance between educators and learners and learners with the learning community.

Critique of the TDT theory is important but it does not fully explain the popularity of the theory. According to Stein, Wanstreet, Calvin, Overtoom and Wheaton (2005), few studies have explored the Transactional Distance Theory (TDT). "While this theory has existed for some time and has face validity, it has not received empirical support" (Goel, Zhang & Templeton, 2012, p.1122). Gorsky and Caspi (2005, 2009) criticize the theory of transactional distance because it has not constructed validity and propose a tautology. They maintained that the theory can be revised as the more the understanding (dialogue), the less the misunderstanding (transactional). Another criticism is that dialogue is the main determinant of transactional distance, with the

other two variables – structure and learner’s autonomy- affecting dialogue. In other words, the quality of course structure is related to the dialogue facilitation, and the level of learner autonomy is related to the level of dialogue. In response to the critique, Wheeler (2007) suggests that the examination of two sub-variables of dialogue, social presence and immediacy, provides construct validity.

Advances in communication technology, which made synchronous interaction more accessible, enabled video mediated communication to be available to distance education systems. Moore (1993, p.27) wrote that “When a program is highly structured and teacher-learner dialogue is non-existent the transactional distance between learners and teachers is high. At the other extreme, there is low transactional distance in those teleconference programs that have much dialogue and little predetermined structure”. By placing transaction and dialogue at the core of distance education, Moore offered new insights and pointed towards new and important research directions (Gorsky & Caspi, 2005).

2.2 Tele-presence: A sense of ‘being there’ or sense of ‘place’

Transactional distance theory describes distance as emotional and cognitive. Another concept that explores the distance among participants in online environments is tele-presence. There have been many definitions of tele-presence (Kim & Biocca, 1997; Lee, 2004; Lombard & Ditton, 2000). The term is defined as an experience of ‘being there’ in a mediated environment (Minsky, 1980). It has been used many times in virtual spaces for the use of avatars but also for real time human to human communication. What tele-presence seems to assume about distance is that with

effective technology, vividness, transparency and interactivity, it is possible to create a 'feeling of being there' (Haans & Ijsselsteijn, 2012).

Innovative technologies that may use multiple camera views, moveable camera freeing the user from sitting in front of a computer, face and eye movement tracking devices (Yang, Wu, Hsiao, Tsai & Hung, 2008), hand gesture recognition (Hurienne et al., 2010) or 3D holographic representation called *TeleHumans* (Blanche, 2012; Blanche Bablumian, Voorakaranam & Christenson, 2010) promise to enhance the feeling of 'being there', even in the case of larger groups (Chang & Trelease, 2001).

Another term that first appeared in the writings of Barbatsis (1999) is 'Hypermediated tele-presence' which refers to the sense making aesthetics of the newest communication art'. 'Hypermediated tele-presence' entails sensory rich online communication and interaction. In his paper, he created a contextual framework synthesizing a set of aesthetic principles relevant to hypermedia which addresses what communication scholars recognize as the "sensory world" of mediated communication. In other words, hypermedia involves its participants in a particular kind of "sensory world" (Shapiro & McDonald, 1995; Barbatsis, 1999). What seem to be of importance are the contextual media aesthetic characteristics of a medium, working uncritically and automatically, and relatively independently of literal content, to establish a framework for the cognitive and affective perception of a mediated event (Zettl, 1999; Barbatsis, 1999):

Developed from the branch of aesthetics that deals with sense perceptions and how to influence them, it is concerned with such fundamental image elements as light, space, time-motion, and sound for the ways in which they structure

perceptual or sensory experiences in a system of aesthetic fields. (Barbatsis, 1999, p.283)

On the contrary, Fayard (2006) questions the assumption that face-to-face is 'a natural and perfect state - being there' and when online participants are not co-located, they are in an imperfect state, and expect technology to reconstruct a perfect state. She deploys the theatrical metaphor theory with which Goffman (1959, 1974) analyses human behaviour in social situations. "He uses the notions of stage, performance, and roles to describe social interactions and presentation of self, both at a macro and a micro level" (Fayard, 2006, pp.153-154).

The outcome of Fayard's research has shown that what is of utmost importance is the 'stage' of the social interaction where identities and processes perform. Moreover, the findings show that people in video-mediated contexts adjust and evolve the well-established routines as they have developed for interacting in everyday communication in order to build a 'stage' for interaction. The stage does not only refer to a spatial frame of reference, but it also refers to a shared social context, a "place" that participants collaboratively construct. The duality of the stage is emphasized in video-mediated settings. Being onstage, you are acting, talking or playing a role. Being backstage when you are 'onstage' (on camera) means that you are not an actor, but part of the audience (Fayard, 2006). Therefore, educators supporting communication in video-mediated settings should be aware of the affordances of the medium and the construction of a shared social context that gives a 'sense of place' to participants (McGrath, 1991).

On the same wavelength, Fernandez-Dols and Carrera (2011) consider SVC as a new genre:

Genres are certainly a theoretical way of classifying complex messages, but they are also conceptual categories: when categories of genres are shared by author and audience, they help to constitute a shared way of understanding a message and its representational and affective features. (Fernandez-Dols & Carrera, 2011, p.43)

They maintain that cameras and other visual digital devices bring about new ways of managing one's facial expression 'on the stage' – ways that do not consist of mere amplifications of face-to-face interaction, but rather of sophisticated constructions around different kinds of genre. The stage as context is based on social interactions and verbal and nonverbal cues as social signals shared or not by sender and receiver. Videoconferencing as a genre consists of two main dimensions referred to above: the kind of representation of the world, included in the message, and senders' social motives with respect to their audience (Fernandez-Dols & Carrera, 2011; Pentland, 2010).

Barbatsis talks about Joseph Squire and his 'manifesto' of hypermedia installation in which the 'place' contributes in the experience the speaker intends:

In the place there are no objects, spaces or bodies. Remember, these things are not sacred in themselves. The place explores the boundary between tool and myth, instrument and concept (to see the ways in which they mutually constitute each other). The place requires new constructions of bodily reality. Never fail to recognize the difference between self and other. Avoid any

confusion of boundaries. The place will not be appreciated by all. But it presents its own seductions. The place is inhabited by random memories, dream-addicted mercenaries, and second-hand scraps of excitement. The place is governed by assembly, disassembly, investment, and exchange. (Barbatsis, 1999, p. 289)

In contextual media aesthetics emphasis is placed on the concept of synaesthesia on 'stage', conceptualized as a cultural metaphor. According to Gottner-Abendroth (1986), synaesthesia is the simultaneousness of the experience that involves at once intellect, emotion and action; a welding together of thinking, feeling, and doing; an incorporation of identification, theoretical reflection, and symbolic order. Similarly, Turkle sees the opportunity to explore and express different aspects of identity through interactions played out simultaneously in several different contexts which are quite different from a physical space (Turkle, 1995). Moreover, she argues that "these characteristics of hypermedia interaction provide opportunities in an increasingly no private world for working out important developmental issues through role-play" (Turkle, 1995, Barbatsis, 1999, p.297). Whether online participants feel like 'being there' or feel the need to create a sense of 'place', new roles and contextual background are important.

In this chapter, the key concepts are related to the research questions that aim at improving distance education while investigating the educational purposes and teaching approaches of SVC. Transactional distance is the core of networked learning and online presences aim to reduce students' and educators' psychological and cognitive isolation. The perspective of 'being there' advocated that participants with

the effective tools, interactivity and transparency could have a sense of co-location. Other theorists consider online synchronicity as a new genre of social interactions that creates a virtual meeting place staging roles and performances.

In the next section, the **Community of Inquiry model** is presented to better explain the role it has to play for the following steps of my investigation.

2.3 Evaluating the Community of Inquiry (CoI) model:

2.3.1 Espousal of the Community of Inquiry model

An attempt to create presence from a distance that is spatial, social and cognitive was the theory of the Community of Inquiry (CoI). The CoI framework, introduced in section 1.2.2, was created to explore mainly asynchronous computer-mediated communication (CMC) in higher education (Xin, 2012). It is social constructivism in nature and grounded in John Dewey's (1938) notion of practical Inquiry. It has been 13 years since Randy Garrison, Terry Anderson and Walter Archer (2000) first introduced the Community of Inquiry (CoI) model and the framework has "been adopted and adapted by hundreds of scholars working throughout the world" (Garrison et al., 2010a, p.5), cited in more than 1300 scholarly papers (Google Scholar as of April 2013) . The journal *Internet and Higher Education* has recently produced a special issue: *The Community of Inquiry Framework: Ten Years Later* (Swan & Ice, 2010). In an opening article (Garrison, Anderson, & Archer, 2010a) the three original authors reflect on the conception and evolution of CoI, followed by seven additional articles that report current research on the CoI (Xin, 2012). A growing body of conceptual and empirical literature exists which has attempted to articulate and develop the Community of Inquiry perspective. Attempts to outline

(Garrison, 2007; Garrison & Arbaugh, 2007) and validate particular aspects of the model are numerous (Arbaugh & Hwang, 2006; Garrison & Cleveland-Innes, 2005; Shea, Li & Pickett, 2006; Shea, Fredericksen, Pickett & Pelz, 2005).

The CoI model of presence in e-learning supports the principle that transactional interactions among learners—but also between the trainer and the learners—can create connections and presences in the digital space. Presences could foster the emergence and the development of an online Community of Inquiry (Jézégou, 2012). The model articulates the behaviours and processes required to nurture knowledge construction and cultivate various forms of ‘presence’, among which are teaching, social, and cognitive presences. “The Community of Inquiry framework (CoI) focuses on the intentional development of an online learning community with an emphasis on the processes of instructional conversations that are likely to lead to epistemic engagement” (Shea & Bidjerano, 2009, p.545). Epistemic engagement can be defined as dialogue that negotiates meaning and constructs knowledge (Larroeamendy-Jerns & Leinhardt, 2006). According to the CoI authors, it is through the marshalling of these forms of presence that online educators and students, develop a productive online learning environment through which knowledge is constructed (Shea & Bidjerano, 2009). Creating and maintaining a Community of Inquiry will require understanding and orchestration of the dynamics between and among these presences (Akyol & Garrison, 2008). Jézégou outlined that one of the model’s main strengths is that it provides a way to heuristically stimulate research on e-learning (Jézégou, 2010).

2.3.2 A critique of the Community of Inquiry model

The primary weakness of CoI model relates to the hypothesis that presence promotes deep and **meaningful learning outcomes**. Rourke and Kanuka's (2009) review of the empirical research over the last decade suggests this hypothesis has not been verified yet. In response to this argument, Garrison (2011) said that CoI has mistakenly got caught in the middle of a higher order philosophical and methodological conflict. This critique seems to be more of an argument for independent study (an objectivist paradigm) and against a collaborative, cohort based approach (constructivist paradigm) than it is a valid critique of the CoI theoretical framework. After all, constructivism epistemology puts emphasis on the process of knowledge construction and supports the multiple views of reality as the nature of knowledge rather than clarifying as objectivism what is right and wrong as a learning objective.

In a review of the CoI literature, Rourke and Kanuka (2009) raise concerns about the lack of focus on deep and meaningful learning, suggesting that many issues examined are peripheral to the CoI framework, such as student satisfaction. They note that most studies report that cognitive presence remains at the lower levels of cognition. In a subsequent response, Akyol, Vaughan, and Garrison (2011) reiterate that the CoI framework focuses on the process of learning and not the outcomes, per se. They explain that the lack of cognitive achievement identified in some studies reflects a weakness in the educational experience, such as a lack of teaching presence, rather than a failure of the CoI framework itself. In a more recent review of the framework, Jézégou (2010) responds to the critique of Rourke and Kanuka and she adds that **refinement of the indicators** used in the three coding schemes is necessary in order to avoid overlap in their use in studies that consider all three presences in parallel.

She admits though that Garrison and Anderson (2003) do not sufficiently make the conceptual foundation of the model very clear in order to enhance construct validity.

Xin (2012, para.1) argues that “CoI underestimates the complex multi-functionality of communicative acts which often combine instruction, knowledge construction, and social interaction in a single utterance”. She deems **as confusing the relation of cause and effect in the CoI framework** and specifies the leadership functions of teaching presence and how they are intertwined with the social and cognitive functions. It argues that social presence goes beyond a mere aspect or component of online discussion; it is the backdrop of everything that goes on. She also disagrees with the unstructured nature of the model: “The relatively unstructured nature of intellectual engagement is contrasted with the four-stage cognitive development assumed by the CoI framework” (Xin, 2012, para. 1.).

The gaps in the CoI model served as a powerful guide for the SVC study .The popular Community of Inquiry framework (CoI) is widely used for studying text-based asynchronous online discussion (Garrison, Anderson, & Archer, 2000; Xin, 2012). This model evolved over the years to include verbal interactions supported by synchronous and asynchronous tools of communication without, of course, **the body language being perceived** (Jézégou, 2012). In short, the explanatory value of a CoI approach depends on the educational purpose, processes and context that create a learning community. As it is defined so far there is no reference to the ‘place’ of interaction as synchronous context and the educational purposes, the contextual influence and impacts of synchronous video-mediated interactions.

Another gap identified is that CoI focus is on **problem based pedagogy** based on the indicators for cognitive presence, while SVC can be associated with diverse

educational purposes and teaching approaches. The table below depicts the interaction categories and indicators for cognitive presence but cognitive presence in synchronous environment may be based on different indicators that remain to be investigated.

Table 2.1:

Categories of cognitive presence and indicators

Cognitive Presence	
Interaction Categories	Indicators
Triggering Event	Emergence of a problem to solve; voicing of convergences/divergences regarding the problem
Exploration	Exchanges of information and knowledge; suggestions; brainstorming; confrontation of points of view
Integration	Mutual adjustments; convergence of points of view; summary of the solutions
Resolution	Application and real testing of the solution; discussion of the solutions

The CoI is a generic theoretical framework that must be viewed as a means to study collaborative constructivist educational transactions; therefore, it was used in the SVC investigation.

To summarize the argument in this section, the Community of Inquiry (CoI) framework, was created to explore mainly asynchronous computer-mediated communication (CMC) in higher education (Xin, 2012). The CoI model of presence in e-learning supports the principle that transactional interactions among learners—but also between the trainer and the learners—can create presence in the digital space, when the learners are engaged in distance collaboration. This presence could foster the emergence and the development of an online Community of Inquiry (Jézégou, 2012). The model articulates the behaviours and processes required to nurture knowledge construction and cultivate various forms of ‘presence’ among which are teaching, social, and cognitive presence. Critiques of the CoI model focus on the two hypotheses: i) presence promotes deep and meaningful learning outcomes (which are not verified yet); ii) communicative acts have a great impact on the learning process. The limitations identified in the CoI model are the lack of incorporating synchronous video enhanced approaches and educational objectives other than dialogue and problem solving.

This review of the CoI framework was designed to identify the aspects of it which need further development if it is to be able to explain synchronous approaches to online learning. Recent studies on SVC are reviewed in the following section to serve the same purpose.

2.4 Recent studies of synchronicity reflecting on the gaps in the literature

Real time, video mediated communication has been adopted in many university e-learning platforms, social networks and schools. Lawson, Comber, Gage and Cullum-Hanshaw (2010) review the literature in the field and maintain that there is a substantial amount of videoconferencing going on in schools (JANET Videoconferencing Service, 2009), and the research community needs to explore the innovative aspects of videoconferencing, if educators are to meet the diverse needs of a student population who are increasingly video-literate. Between 2004 and May 2009, 30,000 videoconferences for schools were facilitated by the Janet Videoconferencing Service (2009), a UK provider of secure videoconference connections (Lawson et al., 2010). In the US, 31% of the courses use synchronous internet-based technologies (Parsad & Lewis, 2008; Bower et al., 2012). In Norway, Adobe Connect web conferencing platform has been available to all educational institutions and a survey in Australian and New Zealand universities revealed that SVC technologies display an upward trend (Bower et al., 2012).

The literature review on synchronicity is mainly about student experiences: performance, satisfaction, collaboration competencies (Gillies, 2008; Regan et al., 2011; Saw et al., 2008; Bower, 2011; Stewart, Harlow & De Bacco, 2011; Doggett, 2008) in terms of participation, interaction and engagement in online discussion (Hrastinski, 2008; Bates 2005; Smyth, 2005; Martin, Parker, & Deale, 2012), diversification of classroom electronically (Journell & Dressman, 2011), effectiveness of videoconference education (Chipps, Brysiewicz & Mars, 2012) video conferencing software (Scott, Tomadaki, & Quick, 2007; Groen, Ursu,

Michalakopoulos, Falelakis, & Gasparis, 2012) or theoretical papers related to instructional model or as a baseline for future research (Oncu & Cakir, 2010; Lawson et al., 2010; De Freitas & Newmann 2009; Smyth, 2004, 2011; Bower, 2011). In all these studies, the common denominator is the urgent need to research networked learning to identify the contributing factors and to train educators for the challenges of synchronicity by providing pedagogies and new technological and non-technological strategies that are current praxis and help educators do their work better. “Although a considerable body of literature exists that describes the student experience of videoconferencing using traditional pedagogies, much less has been published on the **contextual factors** that leads to effective learning outcomes and innovative uses of videoconferencing” (Lawson et al., 2010, p.295).

Despite the fact that some studies from student perspective have shown (Saw et al., 2008; Martin et al., 2012) that the teacher’s **visual presence** plays a crucial role in facilitating and maintaining a Community of Inquiry and orchestrating communication in synchronous environments, the educator perspective and the pedagogy educators have adopted in praxis to support students and educational purposes with synchronous video enhanced communication have not been studied enough, so far (Hrastinski, 2010) .

One more challenge of synchronous communication is the difficulty education practitioners face while **combining media to serve learning objectives**. Existing practitioner guides do not provide high level support for the inter-relations of multiple media used synchronously for educational purposes, or a consideration of the current models being used to support practice (Schullo et al., 2005). Much of the studies

associated with synchronous tools, has placed greater emphasis upon technical problems and solutions. Hence, they lack guidance on how to link synchronicity with learning aims and integration into larger teaching scenarios, so the learners' needs are not always served (De Freitas & Neumann, 2009). In other words, educators need to have more experience with the medium and videoconferencing has to be carefully planned, adequately supported, and called forth by genuine need (Koeber & Wright, 2008). Therefore, **educators' voices** could give an insight in how to use SVC more effectively and findings could be compared with students' perceptions and theorists' analysis to find similarities and differences and formulate a theory of praxis, emergent forms and possibilities.

So far, however, there has been little discussion about the impact of visual presence, contextual factors, media serving learning objectives and educator perspective. The next section focuses on technology and teaching approaches as contextual factors influencing directly or indirectly SVC.

2.5 Technology & teaching approaches as context

Technology undergoes a rapid pace trying to provide more and more efficient tools and services at a lower cost and future research (2.5.1). The instructional choice of what and how to use synchronous software changes dramatically the context of learning (2.5.2), therefore, teaching approaches and technologies could be defined as contextual factors.

2.5.1 Synchronous video communication technologies

Synchronous video communication (SVC) - synonymous with video conferencing or interactive video conferencing - is defined as real-time, video-enhanced conversation, an immediate give and take, between at least two participants in different locations (Alexander, Higgison & Moge, 1999; Chandler & Hanrahan, 2000; Gibson & Cohen, 2003; Suthers, 2001). The prominent characteristic feature of SVC is the immediate exchange of information and sharing of facilities among distant users (Anastasiades, 2007). The introduction of tele-operations was most promising. "The introduction of the videoconference facility to the education system some 20-years-ago was quickly recognized as having the potential to resolve difficulties facing distance education" (Gillies, 2008, p.108). Since then, more and more people are using videoconferencing to communicate, teach, learn, ask medical assistance or even appear in court and telecommunication technologies are steadily progressing (Burton & Kitchen, 2010; Tierney, 2010). Synchronicity is widely used in the fields of language learning, (Blake, 2005; Hampel & Baber, 2003; Hampel & Hauck, 2004) medicine (Chippis et al., 2012) and a big range of online courses available.

Far more than 100 products are available commercially for a range of platforms. For this study, although there is a significant difference between desktop videoconferencing which allows for audio-visual feeds to be transmitted between sites, and web conferencing which allows groups of users to enter an online meeting space and use features such as whiteboards, screen sharing, chat, voting etc., the focus is on video and communication not on tools. Some of the common virtual classrooms available in the market today are Elluminate, Adobe Connect, Webex, Flashmeetings, DimDim, Vyew, TokBox, VCS, Blackboard collaborate and Horizon Wimba.

Moreover, “a survey of the AACE EdITLib database by the author found that 22 of the 24 papers focusing on web conferencing in learning and teaching were written since 2007” (Bower, 2011, p.63). Synchronous interactions can be used for interviews, project meetings with multiple participants, chaired by a leader or for webcasts of physical lectures, virtual seminars and video lectures connecting participants and institutions. In addition, during SVC, other communication channels are available such as public group text chat, a voting system and emoticon mood indicators to support synchronicity. URLs can also be shared for collaborative web browsing. Furthermore, some software allows for automatic recording and can monitor participation. For example, Flash Meeting – software developed in Open university- uses dominance charts. “The FlashMeeting™ broadcast dominance chart is a form of polar area diagram in which the circumference of the chart is divided according to each user's percentage of the total event audio-visual talk time” (Scott et al., 2007, p.4); so active participation can be monitored at least quantitatively. As far as the recordings of SVC sessions are concerned, educators and learners could reflect on what they have said and done (Martinell, 2010; Martin et al., 2012).

The potential of synchronous video mediated classroom depend heavily on software/devices, costs and future research. Generally speaking, there are many forms and potentials to enhance educator and student interactions, using text, audio and video to express themselves. Users can use break out rooms and participate in group activities and educators can poll students instantly, while experiencing a feeling similar to face-to-face. The cost and the bandwidth availability seem to steadily decrease and facilitate the adoption of the medium (Burton & Kitchen, 2010). More and more technological advancements are entering the market. The 3D teleconference

promises to improve the communication experience, freeing the user from sitting in front of a computer and maintaining appropriate eye contact with multiple speakers (Jones et al., 2008). Moreover, there is ongoing research on human to human interactions on screen (Kappas & Krämer, 2011), and visual cognition (Summerfield & Egner, 2009).

At this point, it is important to explain that the focus of my study is not the tools but the holistic synchronous video communications praxis of online educators. My decision was inspired by Njenga, Fourie (2008) and Parchoma (2011) who suggest shifting our attention from actual educational technology as it advances to technology's educational functions and the effects it has on the functions of teaching and learning. Another reason for underlining the experience and praxis rather than the software is that different platforms are deployed in Australia and different ones in Africa. What they have all in common is synchronous video enhanced dialogue and collaboration. Therefore, I did not ascribe too much power to perceived inert affordances of particular synchronous technologies, but I focused on how the technologies are enacted or taken into use by practitioners (Jones et al. 2006 ; Suthers 2006).

2.5.2 Teaching approaches as contextual factors.

The synchronous video-mediated communication is referred to by terms such as web conference, webinar, web meeting, desktop video conference, or teleconference, virtual class, or webcast (Hyder, Kwinn, Miazga & Murray, 2007). Hyder and his colleagues (Hyder et al., 2007) maintain that there is some confusion regarding the

terminology of synchronous e-learning technologies due to the rapid growth in the field. Hence, he indicated some categories of teaching approaches that seem to be helpful for my study:

- **Teleconferencing** (comprising audio and video conferencing) has expanded due to the use of cell phones and the uses of podcasts. Video conferences comprise full screen video and audio, using 'high speed' telephone lines (such as ISDN) or over the internet using TCP/IP protocols. It allows for **interaction and dialogues**.
- Another form is **webcasting**, which is dominated by **lectures in situ** (Hyder et al., 2007).

“The main advantage of the ‘lecture-at-a-distance’ format is often cited as being the ability to include larger numbers of students in important content dissemination activity to avoid duplication of effort and therefore time and cost savings” (Lawson et al., 2010, p. 299). Bates (2005) demonstrated how videoconferencing has the potential to offer a cost-effective way of teaching remotely located students in the United States and expose them to educational experiences such as clinical procedures that would be otherwise difficult to deliver. Dyke, Harding, and Liddon (2008) found that remote observation of teacher trainees’ lessons could be as effective in terms of consistent assessment, as long as the observer had remote control of the in-class camera, so that both teacher and learners could be observed. On the downside, videoconferencing lectures could reduce ‘social presence’; the feelings of connection between participants in the experience (Beldarrain, 2006) because the educator could not experience the presence of the audience. In cases where on campus lectures were

delivered online to distant learners, the students (Gillies, 2008) felt that there was little interaction between different sites, which militated against any sense of common purpose between them and could lead to disengagement when students at another site were giving feedback to the educator. Under certain circumstances, webcast could be useful for specific populations that need to learn from an academic expert (Laurillard, 1993; 2012), despite the lack of active participation.

- **Assignment feedback** discussed and checked by educator via videoconference

Feedback has been defined as “information about how the student’s present state (of learning and performance) relates to goals and standards” (Nicol & Macfarlane-Dick 2006, p.199). Audio-visual feedback was perceived by students as more ‘real’ and ‘personal’ (Mathieson, 2012). Mathieson (2012) reviewed the literature on the process of providing feedback and identified the factors characteristic of the feedback process—questions, responses, building, redirecting, and examples—are also dialogic moves associated with dialogue towards understanding (Shearer, 2009). To improve understanding, feedback must be timely, and educator could communicate to their students what they have done well and what areas need improvement (Denton, Madden, Roberts, & Rowe, 2008). Furthermore, timely feedback is more consistent and personalized, provides clearer guidance on how to improve, and allows students the opportunity to discuss feedback (Rae & Cochrane, 2008). Effective feedback involves not only verification regarding the correctness of the response but also elaboration, in which the educator provides information to the student on “how to improve the learning process” (Espasa & Meneses, 2010, p.281). High-quality feedback techniques can increase students’ self-reflection and self-regulation of

learning (Espasa & Meneses 2010; Quinton & Smallbone, 2010), improve student motivation and satisfaction (Orrell, 2006), and ultimately enhance understanding (Fluckiger, Tixiery, Pasco, & Danielson, 2010). As a key component in the education process, feedback has been instrumental in all major learning theories (Kartal, 2010). Therefore, identifying feedback approaches that are both content effective and time efficient is beneficial for both students and educators (Dorow & Boyle, 1998).

- **Student collaborative tasks** via videoconferencing

Laurillard (2012) claims that ‘learning through collaboration’ is differentiated from learning through acquisition (educator as storyteller), inquiry and discussion (students ‘story line’ is extended by the opportunity to have discussions with teachers, other students, experts in the field) by the point that in learning through collaboration, the learner contributes to the process of creating knowledge. Learning tasks include ‘peer modelling’, ‘cognitive elaboration’ and ‘practice with one another’. Teachers’ roles are detailed. Digital technologies of use for collaborative learning include wikis, collaborative discussion, collaborative ‘construction environments. Building on the work of Roschelle and Teasley (1995), McConnell (2002) distinguishes between distributed *collaborative* and *cooperative* learning. Roughly speaking, this refers to whether the work on the task or problem and the outcome is shared (collaborative) or whether individuals engage in discussions with others about their reflections on individual assignments (cooperation). Student collaborative tasks emphasise learning as knowledge construction, collaboration in groups and problem-orientation (Dirckinck-Holmfeld 2002).

Smyth (2005) claimed that, with broadband transmission, videoconferencing was effective for more learner-centred pedagogies, such as role playing, group work and simulations. Ertl, Fischer, and Mandl (2006) argued that collaborative learning with synchronous video mediated tools was most efficient when there was additional support included, such as shared applications across the conference members or through the use of documents and facilities which structured the activities carried out in the videoconference. In a similar fashion, discussions among teacher trainees during their dispersed practice periods were found to promote reflective thinking as they shared problems and generated solutions amongst themselves (Hu et al., 2000; Palloff & Pratt, 2007). Collaborative events were particularly important where videoconferencing was used to promote collaboration across different cultural backgrounds or globally through links to groups of students or organizations in other countries (Abbott, Grosbois, & Klein, 2005). Yamada's (2009) work suggested that videoconferencing developed participants' practical skills in speaking other languages, such as when to laugh or nod, as well as increasing the motivation of learners.

- **Archiving of online meetings** for reflection purposes or other online courses

On one hand, archiving of online meetings could provide good feedback for evaluation processes and improvements of interactional patterns (Martinell, 2010). On the other, it cannot be ignored that an increasing number of universities choose to support student learning by providing online recordings of lectures (Leoni & Lichti, 2009). Recordings could offer a more learner-centred approach for lectures (Baecker, Moore, & Zijdemans, 2003; Traphagan, Kucsera & Kishi, 2010). Findings (Woo et al., 2008) show that most students prefer courses accompanied by online recordings of the lectures. This is not only the case for traditional distant students, but also for

on-campus students as well (Woo et al., 2008). Chang (2007) examined teacher and student perception towards lecture recordings and results show they favour recorded lectures as well.

The potential of the synchronous video mediated classroom depend heavily on software/devices, cost and research. Teaching approaches and educational purposes are categorized in possible technological formats and potential educational use. Thus, technologies and teaching approaches were seen as contextual factors affecting the quality of synchronous video communication. The general categories used in this study are **Teleconferencing** which allows for interaction and dialogues and **webcasting**, which is dominated by lectures in situ, **assignment feedback** discussed and checked by educator via videoconference, **student collaborative tasks** and **archiving of online meetings** for reflection purposes or other uses. The categorization, although it may be broad, could be used as a holistic framework to link teaching approaches to learning objectives in interdisciplinary contexts in Chapter 6 and research design in Chapter 3. Potential benefits of synchronous video are enlisted below.

2.6 Benefits of synchronous teaching approaches as contextual factors

Research in the field of synchronous video-enhanced communication has found out some beneficial factors for networked learning.

2.6.1 Cognitive scaffolding

Synchronicity in distance education could facilitate **meaningful interactions, clearer communication, actual work and psychological arousal/motivation**. Seeing who is paying attention, and who is saying what, may be a very satisfying feature of videoconferencing, avoiding the pitfall of all participants talking at the same time, as it sometimes happens with audio conferencing. Knowing who is who could help participants to associate ideas and utterances with their respective contributors over the course of a conversation. Thus, video may clarify the ‘scaffolding’ on which cognitively to hang the utterances and arguments of the individuals in the process of dialogues. The obvious facts are usually unmentioned in the literature on the benefits of videoconferencing over voice and text (Karvis & Krammer, 2011). Karvis and Krammer (2011) draw examples from cognition research and maintain that cognitive schemata providing scaffolding for encoding and evaluating incoming information are useful and enhance information processing and recall. On the contrary, Hrastinski (2007a) found SVC useful to exchange information with a lower degree of complexity to avoid overloading the working memory of the participants.

The cognitive model of media choice postulates that receivers are more committed to read and respond to messages when communicating synchronously (Robert & Dennis, 2005). Carr and collaborators note that synchronous communication can accelerate information flows within a team (Carr, Cox, Eden & Hanslo, 2004). Studies indicated that during SVC dialogues were more meaningful. “The content analyses from the studies indicated that the synchronous discussions were characterized by higher relative degrees of task support exchanges, compared to asynchronous discussions” (Hrastinski et al., 2010, p.657). Scott and his colleagues though, maintain that “Video can be used for actual work, whilst text can be used for

emotional support and social interaction” during live online meetings (Scott et al., 2007, p.1). Moreover, adding synchronous learning episodes to online courses can enrich meaningful interactions (Repman, Zinskie & Carlson, 2005) with the help of visual signals that enhance interaction and meaning (Fullwood & Doherty-Sneddon, 2006; Bower et al., 2012). Although there is evidence that SVC bears the potential to enhance cognitive presence, some research presented conflicting evidence that would be discussed in the limitation section of this chapter.

The dark side of synchronous video enhanced communication posing challenges should be taken into account but it is not a well-researched area. Kock’s media naturalness hypothesis suggests that synchronous communication increases psychological arousal (Kock, 2005; Hrastinski, 2008). Similarly, Robert and Dennis’ (2005) cognitive model of media choice predicts that synchronous communication increases motivation. Kock argues that each element that characterizes ‘natural’ media (for example, the ability to convey and observe facial expressions and body language) contributes to psychological arousal. If these elements are suppressed by technological implications or other reasons, Hrastinski predicts that decrease in psychological arousal can be expected (Kock, 2005; Hrastinski, 2008).

2.6.2 Immediate feedback, interactivity & interaction

Synchronous video communication can provide **immediate feedback** (Martin et al., 2012; Park & Bonk, 2007). It has been acknowledged that feedback is less effective if it is delayed (Tuovinen, 2000a). Moreover, students perceived audiovisual feedback as more effective than text-based feedback because of the interaction with the educator. It has the potential to build the sense of community and facilitate learning

with a more 'real' and personal touch (Mathieson, 2012, Martin et al., 2012). The more sensory-rich the communication is, the more unlikely it is to make communication mistakes (Adams, 2011).

Interactivity and interaction have been differentiated in the field of technology enhanced learning. Wagner (1994, p.6) suggests that "interaction functions as an attribute of effective instruction while interactivity functions as an attribute of instructional delivery systems". She further defines instructional interaction as "an event that takes place between a learner and learner's environment and its purpose is to respond to the learner in a way intended to change his or her behaviour towards an educational goal" (Wagner, 1994, p. 9). Interactivity focuses on sensory information and modifications (Steuer, 1995), that function as features on instructional design systems (Wagner, 1994), and embrace the reciprocal exchange between the technology and the learner (Gilbert & Moore, 1998). Yamada's (2009; Lawson et al., 2010) research has found that videoconferencing developed participants' practical skills in speaking languages, such as when to laugh or nod, as well as increasing the motivation of learners. On the contrary, there was little evidence of 'spontaneous, free flowing verbal exchanges' (Garrison & Vaughan, 2008, p. 163).

Interaction was initially defined as human to human contact but later on in the field of distance education, Thurmond and Wambach (2004, p.4) defined the term as "the learner's engagement with the course content, other learners, the educator, and the technological medium used in the course". Moreover, Schullo and her colleagues (2005) focused upon distance education, and argued that there are two main challenges: ensuring the maximum interaction with groups and a lack of confirmed pedagogic strategy for supporting work in synchronous environments (Schullo et al.,

2005). His study found that learners, who were left behind, were not helped enough by the use of asynchronous methods as lack of immediacy still makes it difficult for students to connect quickly with each other or their educator (Schullo et al., 2005). Also, passive modes of delivering content and a lack of active student participation or effective interaction cause more difficulties in distance education cohorts such as high dropout rates, because of lack of face-to-face contact between students and educators (De Freitas & Roberts, 2004). Hrastinski reports that students and educators experience synchronous e-learning as more social and avoid transactional distance by asking and answering questions in real time (Hrastinski, 2008). The issue of interaction has been seen as the key component of a constructivist use of videoconferencing to promote effective learning through the medium (Bates, 2005; Smyth, 2005; Martin et al., 2012).

2.6.3 Interactive contexts without borders

Videoconferencing is a technology that facilitates people in different locations to have real time connections. Gouzouasis (1994) asserts that video-conferencing is a powerful communications medium, and may be used in creative interactive contexts such as performing arts. Gouzouasis concluded that video conferencing enables educators to explore the interactive aspects of audio (i.e. music) in an audio-video context. To that end, “researchers are encouraged to explore the efficacy of the potent technology with a variety of teaching techniques and in a variety of music and non-music contexts (1994). Videoconferencing provides the possibility for students to take “electronic field trips” (Farrell & McGrath, 2002) and move across geographic and cultural boundaries (Ware & Kramsch, 2005) thus expanding their cross-cultural competence. Daley, Spalla, Arndt and Warnes (2008) posited that videoconferencing

expands the walls of local communities and promotes the development of partnerships which exchange ideas and perspectives to gain a better understanding of education. That is to say that synchronicity has the potential to encourage the exchange of multiple perspectives and enhances dynamic interactions among participants (Park & Bonk, 2007).

2.6.4 Collaboration & social presence

Beers (2009) reviews the literature that connects social presence and media. She concentrates on the social presence theory that has been associated with media richness theory (Daft & Lengel, 1984), on the argument that presence varies directly with the richness of a medium (Delfino & Manca, 2007; Hauber, Regenbrecht, Hills, Cockburn & Billingham, 2005; Rice, 1992; Straub, 1994; Straub & Karahanna, 1998) and on the evaluation of social co-presence that includes the aspect of the social richness of a medium and its ability to “connect interactants socially” (Kang, Watt & Ala, 2008) and develops a sense of community particularly with off campus students to give them a more inclusive and intimate experience (Bower et al., 2012). Beers’ research findings prove that multimodal video conferencing has the potential to ground participants in a shared communicative environment thereby establishing social connectedness, and it allows for iconic or paralinguistic support of the discursive expression of emotional stance (Beers, 2009).

Synchronous communication may thus enhance computer-supported and group-based participation, which is a part of contemporary education, based on ‘cooperative’ and ‘collaborative’ learning, influenced by collaborative environments similar to original working processes – real life interactions in professional or educational context

(Strijbos, Martens & Jochems, 2003; Hrastinski et al., 2010, Hrastinski, 2008; Martin et al., 2012). With the introduction of high-quality videoconferencing, collaboration through the medium of videoconferences has been found to be no less effective for collaboration among participants than face-to-face interaction (Weinberger et al., 2005; Chipps et al., 2012). Several studies suggest that combining asynchronous and synchronous means of communication is preferable since different types of communication promote different types of participation (Haythornthwaite, 2000; 2001; Hrastinski, 2007a). The combination of means of communication supports several ways for e-learners to get to know each other and collaborate on work (Haythornthwaite & Kazmer, 2002; De Freitas & Neumann, 2009). “ Without the regular face-to-face contact of educators and other students it is easy for learners not to give the maximum effort required or worse still to abandon learning altogether” (De Freitas & Neumann, 2009, p.980). Moreover, Smyth (2011, p.121) maintains that “learners can be empowered in communities of critical enquiry dialoguing in synchronous video communications where they collaboratively create new personal knowledge derived from both –learner-content and learner–learner interactions”. In other words, real time online meetings are increasingly used to build and transform communities of practice (Hoadley & Kilner, 2005; Quan-Haase, 2005; Hu et al., 2002). As seen with e-learning and m-learning technology (Prensky, 2005) more frequent contact between learners reduces their isolation when they are disparately located. In addition, the variety of forms is increasingly enabling individual personalities and learning styles to be accommodated. Increasing student participation in online environments is a direct means of improving learning outcomes (Britain, 2007) and fosters the exchange of emotional supports, and supply verbal elements (Park & Bonk, 2007).

An important concept that Sung and Mayer (2012) have explored in relation to social interaction in online learning environments is social presence. They have reviewed the literature to find several definitions of Social Presence. Social Presence is the degree to which a person is perceived as “real” in mediated communication (Gunawardena & Zittle, 1997; Tu, 2002; Sung & Mayer, 2012). In other words, social presence relates to whether participants feel they are interacting with real people when they are online. Previous studies have shown that social presence in online learning impacts online learners’ interaction and learning (De Bruyn, 2004; Gunawardena & Zittle, 1997; Sung & Mayer, 2012), learners’ achievement (Mayer, 2005; Russo & Benson, 2005; Sung & Mayer, 2012), learners’ satisfaction (Gunawardena & Zittle, 1997; Richardson & Swan, 2003; Sung and Mayer, 2012), and the development of a sense of community (McInnerney & Roberts, 2004; Rourke, Anderson, Garrison, & Archer, 2001; Rovai, 2002; Sung & Mayer, 2012). These authors recognize social presence as one of the most important aspects of online learning and a key to understanding person-to-person telecommunication. Meanwhile, a lack of social presence may lead to a high level of frustration, a negative attitude towards the teacher’s effectiveness and a lower level of affective learning (Hughes, Ventura, & Dando, 2007; Song, Singleton, Hill, & Koh, 2004; Sung & Mayer, 2012). Therefore, the authors (Sung & Mayer, 2012) concluded that online learners may be particularly susceptible to experiencing a lack of social presence because online learning is text-based and occurs in temporal and spatial isolation. Educators with a high degree of online social presence are evaluated by online learners as being more positive and effective. Chou (2002) found that there were more socio-emotional interactions in the synchronous communication mode, which enhanced interpersonal

connections. Moreover, Chou (2002) found that there was more one-way communication in the asynchronous mode as students seemed to be more interested in expressing opinions than challenging each other's views; whereas, in synchronous mode, there were more questions and answers. Students were more engaged in the synchronous discussions. Finally, they claimed that intimacy and immediacy are likely to be directly related to cognitive learning as well as to affective aspects of learning (Sung & Mayer, 2012).

In the framework of contextual factors, Sung and Mayer (2012, p. 1738) “revealed five factors representing facets of social presence in online learning environments: social respect (e.g. receiving timely responses), social sharing (e.g., sharing information or expressing beliefs), open mind (e.g. expressing agreement or receiving positive feedback), social identity (e.g. being called by name), and intimacy (e.g. sharing personal experiences)”. Based on research findings, theorists give some practical recommendations that affect the social presence. Firstly, they suggest that educators and students need to acknowledge and respect the time and effort invested in participating in online activities. Secondly, online educators and learners need to share personal information as a way to build social relationships between the educator and learners. As a result, sharing beliefs, values, motivation, and professional interests seem to improve the sense of community (Yoon, 2003). Sharing personal stories and experiences allows students to see each other as humans (Aragon, 2003; Yoon, 2003; Sung & Mayer, 2012). Especially, learners feel more comfortable around an educator when they believe the educator shares a kinship (Schimke, Stoeger, & Ziegler, 2007; Sung & Mayer, 2012; Pentland, 2010). Thirdly, online educators need to make an open and hospitable atmosphere (contextual aesthetics) in which learners can state their feedback and constructive opinion (Barbatsis, 1999). Hence, educators and students need to display an open mind. Open mildness is a baseline to build up intimacy and trust among online learners (Kehrwald, 2010; Sung & Mayer, 2012). Schimke and his colleagues (2007) recommend that when feedback is personalized and addressed to the individual learner rather than given as mass feedback to the entire class could help the student feel that the educator cares for her/him (Vonderwell, 2003; Sung & Mayer, 2012). Fourthly, the educator and fellow learners need to be aware of each learner's identity as represented by their name or the name of their team or group (Baxter, 2011; 2012).

2.6.5 Equity & cost

It is likely that Internet videoconferencing will become more available as technological improvements increase its viability, decrease its cost, as colleges and universities seek innovative ways to cope with increasing enrolments and decreasing classroom space. Equity is a major advantage in that all students, living remotely or near the university, are taught by the same lecturers, assuring the same quality of information for all (Carville & Mitchell, 2000). One more issue that needs to be taken into account is the obvious cost to distant learners and teachers. The loss of freedom associated with time zones cannot be ignored either. Time constraint are important to distant students, most of whom are juggling employment, family concerns and formal course work (Anderson & Dron, 2010). In general, distance education, as a field, was founded for creating and promoting greater social justice and equity (Burge, 2008).

2.6.6 Teacher presence

Teaching presence is defined as educators' work to guide inspiration and motivation in order to support learners' experiences (Garrison, Anderson & Archer, 2000). "When designing an educational experience supported by computer conferencing, consideration should be given to an initial face-to-face meeting where relationships and a comfort level can be established" (Garrison et al., 2000, p. 97). Martin and her colleagues (2012) note that the educator's teaching style and visual presence in live meetings are instrumental in engaging students with the content. Furthermore, they have concluded that students need to learn a bit more about their educators, who they are, how they look like, what their research interests are. "This makes synchronous communication especially useful in the beginning of a course" (Hrastinski et al.,

2010, p.659). Steward and his colleagues (2011) maintain that when the distant learners were able to receive real-time attention from the educator and were able to share differing perspectives, they were more satisfied in the course. Koenig (2010) claims that charismatic educators in face-to-face class could be equally charismatic in virtual environment.

2.7 Practical limitations as contextual factors

2.7.1 Technical issues

Despite the fact that technology is progressing fast, technical issues hinder the smooth function of SVC in Higher Education (Gillies, 2008; Martin, 2005). Serious problems could be posed by fluctuations and **limitations of Internet bandwidth** and the heightened demands placed upon the Internet connection by the videoconferencing technology; large quantities of audio and video that are transmitted during an Internet video conference can create problems that one does not typically experience during more ordinary use of the Internet. Often users experienced a delay in the transmission of audio and video, which results in difficulty for the educator to see and hear students, and vice versa. Gage (2003) argued that sound and picture quality had managerial and pedagogical implications because of causing loss of continuity. Interaction disruptions in mediation serve to threaten co-presence by isolating interlocutors (Beers, 2009). More importantly, when participants are located in different countries, bandwidth differences are not always predictable and learning technologists have to resolve the obstacles in real-time which are not always possible or delays the learning episodes for the other team members.

The **quality of devices** available may influence the learning experience. The size of screen/monitor is another technological consideration (Fullwood & Fin, 2010). Users prefer a large screen because of their desire for social co-presence and intuitive feeling that participants are physically present in the same location (Angiolillo, Blanchard, Israelski & Mané, 1997; De Greef & Ijsselsteijn, 2000). The studies that have explored screen size and tele-presence have come up with consistent results that larger screen size results in participants reporting higher levels of tele-presence dimensions. Some examples include higher levels of enjoyment (Lombard & Ditton, 2000), immersion (Bracken & Botta, 2002), and perceived and social realism (Bracken, 2005).

Internet videoconferencing can enhance electronic exchanges and expand accessibility worldwide, if **technical assistance** is provided. “The improvement in generalized connectivity (broadband, 3G, etc.) to support video communications makes this possible” (Smyth, 2011, p.115). As is the case with most developing technologies, glitches remain, although recent breakthroughs in data compression may resolve the most serious problems (Hrastinski, 2008). As Palloff and Pratt (2007) put it, the use of synchronous media should be judicious because their synchronous nature imposes some inflexibility and difficulties in the course delivery. The technical difficulties and disadvantages can be minimized by a) training the students ahead of time to use the applications, b) asking students to use the setup wizard before each class session, c) having students login ahead of time to help troubleshoot any potential technical difficulties, and d) providing a reference guide to address technical difficulties (Martin et al., 2012). In other words, if technical support is available, there are means and tools to ameliorate technical difficulties.

2.7.2 Organizational constraints

Many universities offer some form or forms of online courses that support SVC to limited populations of students—often based on **individual faculty interest**. There is a lack of specific training and guidance for teachers (Martin, 2005). These programs or courses are typically managed by the individual faculties, teaching faculty or adjuncts, and require little administrative policy (Garrison & Kanuka, 2004; Power & Morven-Gould, 2011). There is no strategic planning to identify needs, goals, objectives, cost, human and technical resources and operational plans to implement distance education projects that support synchronous video mediated communication. Despite the e-learning effectiveness, distance education is often associated with high rates of student dissatisfaction and isolation, withdrawal, and attrition (Power, & Morven-Gould, 2011; Baxter, 2011). Learning technologies have the potential to enhance educational innovation, but the e-learning adoption rate of faculty in universities has been disappointing so far. The motivation and capability of educators to use information and communication technologies (ICT) in teaching and learning is influenced by competence development measures and wider institutional incentives than what universities offer (Schneckenberg, 2010, p.979). As a result, the field of videoconferencing in education is under-funded in practice and under-researched by the academic community (Lawson et al., 2010). Training may not be enough to motivate faculty to acquire e-competences and to engage in e-learning? “Universities have to create innovative portfolios for faculty development which extend both the scope and breadth of formal training with non-formal measures like communities of practice, peer groups and networks. Beyond these competence development measures, **institutional incentives like eLearning rewards and career**

opportunities for eLearning champions increase the motivation of faculty to sustainably use learning technologies for their courses” (Schneckenberg, 2010, p. 979).

2.7.3 Educators' resistance discourse

Bower (2011) maintains that videoconferencing approaches to facilitate learning and teaching is **more complex than for asynchronous online learning**. He justifies his arguments on the basis that, there are several tools to master. Bower believes that misunderstanding of one subtle feature of a tool or its use can have a crippling impact on the learning episode, amplifying the importance that users have developed technical and collaborative competencies in synchronous learning environments (Bower, 2011, p.63).

Faculty attitudes towards e-learning are discussed by Power (2009) in a series of case studies, revealing that faculty view e-learning in its asynchronous form as being unsustainable and time consuming. Others emphasize the futility of investing in high-level, upfront course design because frequent redesign is required (Twigg, 2003). Yet, faculty in dual-mode universities will likely have to become major online providers in light of a widening gap between supply and demand in higher education (Daniel, Kanwar & Uvalic-Trumbic, 2009). Despite its potential, distance education is often developing at the university level, without the full involvement of regular core faculty (Sammons & Ruth, 2007; Bedford, 2009), highlighted by the tendency to use contract faculty to deliver courses online. As full-time faculty have been unable to fulfil these roles due to workload or resistance, organizations are turning to adjuncts to meet the needs of their online learners (Bedford, 2009).

Stakeholders in the learning process, such as faculty, students, and administrators, appear to have **different reasons for adopting or resisting distance education**. For example, the huge increase in interest in online learning has not always been synonymous with wide-scale adoption by HE institutions because of various hurdles and obstacles (Orr, Williams & Pennington, 2009). Core faculty are often hesitant about participating because they fear it will add to their workload, diminish quality, or compromise intellectual property (Blin & Munro, 2008). Dreyfus (2001) refers to feelings of “disembodiment” and “alienation” on the part of faculty; whereas, Shea, Fredericksen, Pickett, & Pelz (2005) explain the teaching styles of many educators are incompatible with e-learning. Sammons & Ruth (2007) add that the 24/7 professor who is dragged from a traditional classroom into cyberspace may not be able to adjust. Educators have always had a profoundly ambiguous relationship with technology (Anderson & Dron, 2010; Power & Gould, 2011). Some educators find technology too complicated to use or others claim “technology is just (or only) a tool” that could not affect the pedagogy or the teacher presence (Anderson & Dron, 2010). Teachers are strongly inclined to ignore innovative perspectives to learning when they threaten to disturb this established status (Demetriadis et al., 2003) and the fact that they may be making use of technology cannot be interpreted as evidence that their attitudes about its usefulness or their teaching approaches are changing (Balanskat, Blamire & Kefala, 2006). Therefore, for optimal performances, the pedagogy and the technology must create an engaging and compelling dance (Anderson, 2009) and educators have to be able to see and experience it.

As Smyth (2011) put it, **learner- centred approaches** challenge teaching in distance and online environments where active learning is often assumed through planned interaction with content rather than planned learner–learner interaction. Thus, an online learning environment can pose challenges for educators, frequently requiring them to modify their teaching style, develop new skills and strategies, and adapt to new educator roles (Heuer & King, 2004; Bawane & Spector, 2009). Staff may require support to initiate and sustain new learning designs because embedding synchronicity has implications likely to challenge conventional beliefs about teaching and require deep thinking about appropriate practice within institutions (Smyth, 2004). If online educators do not have the experiences and adequate instructional design, while using synchronous media may be tempted to emulate their “traditional habits of face-to-face instructions”, such as lecturing, instead of looking for opportunities to improve the quality of online communication (Kinshuk & Chen, 2006).

All in all, synchronous e-learning is more demanding and careful instructional design is needed. The faculty attitude towards e-learning and technology, lack of experiences/e-learning pedagogy and institutional support make educators be defensive and reluctant to participate in e-learning courses.

2.7.4 Asynchronicity or synchronicity for reflection

Some theorists maintain that complex ideas and critical reflection flourish in the asynchronous models. Written forms of communications in the asynchronous mode have some attributes that facilitate critical reflections and collaborative learning (Garrison & Anderson, 2003). Moreover, ‘complex’ ideas need time to be fully

understood and asynchronous discussions are more efficient (Hrastinski, 2008). In synchronous e-learning, learners respond quickly because they do not want to disrupt the conversation or catch up with the course of dialogue. As a result, the focus is often on quantity rather than quality (Hrastinski, 2008). It is important to note that these studies are focusing on synchronicity of dialogue without any reference to the impact of video or audio features.

Niedenthal, Barsalou, Winkielman, Krauth-Gruber & Ric (2005, p.184) maintain that findings in the social psychology literatures on attitudes, social perception, and emotion demonstrate that social information processing involves embodiment, where embodiment refers both to actual bodily states and to simulations of experience in the brain's modality-specific systems for perception, action, and introspection. In other words, when a social interaction is perceived as real life experience (online cognition) and when it is reflected (off line cognition). They have shown that “embodiment underlies social information processing when the perceiver interacts with actual social objects (online cognition) and when the perceiver represents social objects in their absence (offline cognition)” (Niedenthal et al., 2005, p. 184). In the same line of thought Lakoff (2008; Lakoff & Johnson, 2003) and Iacoboni (2009) describe learning and reflection as an embodied state of mind. Other research on video – enriched learning (Martinell & Sime, 2010) maintain that personalized learning enriched by video has the potential to facilitate critical reflection in relation to performance, foster students' will to learn and boost their confidence as art performers. Thus, synchronicity, asynchronicity, and video production may be creatively used for different reflective purposes.

2.7.5 Artificial flow of Synchronous video enhanced dialogues

As Fetterman (1996) maintains, communication is not completely fluid; because of small lags in time, conversational protocols are needed to signal when each person is finished speaking. Such signals can be as simple as 'what are your thoughts' or even 'over', and are particularly useful during multiple-user videoconferences, yet who talks first needs to be somehow clarified. Another drawback is that videoconferencing is more invasive than simple electronic exchanges. He also notes that users tend to forget, as they work on their computer in the privacy of their home or office, that they are on display, often for long periods of time. Users learn the hard way to be attentive to any unconscious mannerisms, habits, or behaviours - twirling hair, playing with pens and so on. "This level of interaction is not comfortable at all times and for all people" (Fetterman, 1996, p.25). Yet, Smyth (2011) maintains that as time goes by, an increasing number will use synchronous video tools because the sophistication of the affordances and network capacity enables greater freedom in choice of communication mode and more and more people are video-literate.

2.7.6 Students' cognitive load

The most commonly cited issues in this respect are the difficulty of sustaining the interest and engagement of the remote learners in front of the camera (Martin, 2005). "Cognitive load is the amount of mental work imposed on working (short-term) memory. Working memory is the conscious information-processing centre. It can only handle a limited amount of data at a time" (Hyder et al., 2007, p.36). During complex learning activities the amount of information and interactions that must be processed simultaneously can either **under-load, or overload the finite amount of working memory** one possesses. All elements must be processed before meaningful learning can continue (Paas, Renkl & Sweller, 2004). Learners can remember

different amounts of information without practice or memory aids such as documentation. All of the students are at the same pace in the synchronous setting and they cannot all process information, at the same time efficiently. Therefore, preparation for learning activities before and after the online synchronous meeting may be useful for some learners.

Social roles and tools are different in synchronous communication process. The intensity of the use of different communication channels results in the formulation of different roles that participants may play. It may be that some act as the meeting ‘leaders’ (Simoff & Sudweek, 2007), making more extensive use of some or all communication channels available. That is to say that during live online meetings the leaders but also participants can poll, screen share, chats or send e-mails to groups or individuals. Media abuse could also overload learner’s processing capacities (Clark & Mayer, 2008). Martin (2005) suggests that successfully fostering interaction in online courses requires incorporating both instructional and social types of interactions to keep the students engaged.

In order for online meetings to be successful, educators need to take into account ways to sustain the student’s interest by avoiding cognitive overload caused by difficult activities, media abuse and demanding roles. Smyth stated that, “As visual connectivity improves, an opportunity to enrich and rethink the place of learning design in online and distance education is presenting itself.” (Smyth, 2011, p.113).

2.7.7 Summary of potential benefits and limitations

The above review shows that the **practical advantages of synchronous teaching approaches** have been highlighted in many research projects. Cognitive presence in SCV context has to do with the organization, online dialogue and cognitive scaffolding of the activities and feedback in real time. It facilitates discourse, meaning making and motivation. Research on social presence demonstrates that multimodal video conferencing has the potential to ground participants in a shared communicative environment thereby establishing social connectedness, and it allows for iconic or paralinguistic support of the discursive expression of emotional stance. In addition, the educator's teaching style and visual presence in live meetings are instrumental in engaging students with the content. The presences are interconnected and affect one another. The visual presence of the educators, the social cohesion of the group of learners, the immediacy and intimacy seem to be linked to better cognitive schemata.

The benefits of using SVC can be summarised as access for more students, less costs and more creative interactive contexts. It is likely that Internet videoconferencing will become more available as technological improvements increase its viability, decrease its cost, as colleges and universities seek innovative ways to cope with increasing enrolments and decreasing classroom space. Equity is a major advantage in that all students, remote or close, are taught by the same lecturers, assuring the same quality of information for all. Furthermore, videoconferencing provides the means for 'electronic field trips' to move across geographic and cultural boundaries; thus expanding students' cross-cultural competence and exchanging ideas and perspectives to gain a better understanding of education.

Studies of the limitations of SVC focus on technical implications or devices, organization constraints, educators' resistance discourse (difficulties with technologies and bias towards e-learning), the artificial flow of dialogue and the cognitive load imposed on both educators and students. People, especially core faculty, are finding technology complicated to use and technical obstacles due to device failure or bandwidth limitations are still blocking the smooth operation of online meeting. Institutions have not invested sufficient resources to provide technical support, training sessions and motives for faculty to dedicate more time and effort to master the technology and experiment with new media and its affordances. Video-mediated synchronicity is under-funded and under-researched in distance education. Moreover, educators need to understand the human learning process so as not to abuse the use of media or to overload working memory with very demanding task and roles online. Dialogue mediated by video may be affected by the artificial nature of technology which may cause delays or need protocols for effective interaction. As far as learning and reflection are concerned, some studies indicated that asynchronous modes are more productive while others emphasized the embodied cognition as a form of learning and recalling information.

In my study, all these potential pros and cons of SVC have framed the contextualization of the research and indicated factors influencing synchronous communication positively or negatively, either directly or indirectly.

2.8 Summary of chapter 2

My research questions, the wider contextual and theoretical framing of online networked learning that I presented in Chapter 1, have guided the literature review

Chapter. In this Chapter I have explained the relationships between Transactional Distance theory, the Community of Inquiry perspective and a range of contextual factors (potential benefits and limitations) that may impact on teaching and learning. Transactional distance theory is the context of networked learning within which CoI is used to create presences. For the purposes of my study, CoI is a foundational architectural design that has the potential for building a theory of synchronous teaching approaches. The gaps in the literature on the CoI and SVC studies along with the categorization of teaching approaches help the design of my study by guiding me to study them more closely and offer some explanation where none exists at present. The practical cons and pros seem to indicate potential factors affecting the CoI presences both directly and indirectly in synchronous learning environments. The information provided in Chapter 2 feeds into the research design in the methodology Chapter 3, and the following Chapters.

Chapter 3: Methodology & Methods

Chapter 3 reviews the author's research philosophy and methods used, in order to explore and explain, through the participants and researcher's lens, how SVC could support distant learners. The intent of the chapter is to illuminate the epistemology and ontology of Informed Grounded Theory and to illustrate in detail the research design, sampling, data collection and analysis, limitations of the methodology and ethical precautions. It also addresses the criticism against GT and articulates the issues of the literature review both in the research process and the structure of the following Chapters (Chapters 5 & 6).

3.1 Methodology & philosophical background

Grounded Theory (GT) is a process of finding and analysing data in relation to theory and praxis. The methodology of Grounded Theory was developed by Glaser and Strauss in 1967 to describe the qualitative research method they used in their sociological research *Awareness of Dying* in 1965. They adopted an investigative research method with no preconceived hypothesis and used comparative analysis to formulate a theory grounded in the data. Therefore, they named the methodology “grounded theory” (Glaser & Strauss, 1967). During the course of time, many definitions, revised versions and conflicting perspectives came up. Mjøset (2005, p. 379) defines it as “a case of the explanation-based type of theory reflecting a pragmatist attitude”. Creswell (2009, p.13) frames grounded theory as: “a qualitative strategy of Inquiry in which the researcher derives a general, abstract theory of process, action, or interaction grounded in the views of participants in a study”. While a variety of definitions for GT have been suggested, my study uses the definition of Thornberg and Charmaz (2012) who saw GT as a systematic yet flexible method that emphasizes data analysis, involves simultaneous data collection and analysis, uses comparative methods, and provides tools for constructing theories. Additionally, Thornberg (2012) named it **Informed Grounded Theory** because it is informed by existing literature and theories.

The GT methodology serves various research purposes in different disciplines (Dunne, 2011). At first, it came up as a revolution against the dominance and “dictatorship” of the quantitative perspective in social science (Denzin & Lincoln, 1994; Glaser and Strauss, 1967). It was also considered as a response to the criticism that the qualitative research is ‘impressionistic, anecdotal, unsystematic and biased’ (Charmaz 2006, p.5). Over time, many qualitative researchers legitimated their studies

with GT but many theorists have also attacked it or identified some variations. Even the authors who had originated GT, Glaser and Strauss, changed their positions. All in all, “Grounded Theory can be seen as a methodological spiral that begins with Glaser and Strauss’ original text and continues today. The variety of epistemological positions that grounded theorists adopt are located at various points on this spiral and are reflective of their underlying ontologies” (Mills, Bonner & Francis, 2006b, p.25).

Birks and Mills (2011) summarize the philosophical underpinnings of GT, saying that both authors (Strauss and Corbin) are in agreement with the pragmatism and symbolic interactions. Glaser, despite the fact that he has never really entered the conversation about the philosophical background of his methods, is characterized as a critical realist, researching within the post positivist paradigm (Annells, 1996). Actually, Glaser (2005) has an anti-philosophical stance, claiming that epistemology cannot offer potential help to the research process.

The SVC study is an amalgamation of GT approaches. From the original work of Glaser and Strauss, the concepts of no preconceived hypothesis (1967) and Glaser’s theoretical sensitivity (1978) were adopted. Strauss named three basic elements every GT approach should include (Legewie/Schervier-Legewie & Anselm, 2004):

- *Theoretical sensitive coding*, that is generating theoretical strong concepts from the data to explain the phenomenon researched.
- *Theoretical sampling* is used to choose new participants, to modify interview guides and add data resources. I was very careful about whom to interview or what to observe next according to the state of theory generation. That implies

starting data analysis with the first interview, and writing down memos and hypotheses early. In fact, I did not make any attempt to balance the characteristics and mix of respondents. What I have done is to choose participants with more experience in distance education and synchronous tools as I have seen from their profiles and research interests on the universities web sites. Moreover, an ongoing literature review helped me to compare my findings with existing knowledge and to elaborate constructed themes (Thornberg, 2012).

- The need to *compare* between phenomena and contexts to make the theory strong. Contextualization of the field was the role of literature review. The contextual factors affecting the phenomena were an integral part of the interviews.

From Constructivist GT, the concept of *theoretical playfulness* was embraced. Charmaz (2006, p.36) argues that constructing theory is not a mechanical process. “Whimsy and wonder can lead you to see the novel in the mundane. Openness to the unexpected expands your view of studied life and subsequently of theoretical possibilities”.

The philosophical background is more in accordance with Charmaz’s constructivism approach too and it is reviewed below.

3.2 Epistemology & ontology of research

Philosophically, **ontology** entails people making claims about what knowledge is, **epistemology** is how people know it, **axiology** is what values go into it, **rhetoric** is

how people write about it, and **methodology** is the process for studying it (Creswell, 2003, p.6). Mills states that, “To ensure a strong research design, researchers must choose a research paradigm that is congruent with their beliefs about the nature of reality. Consciously subjecting such beliefs to an ontological interrogation in the first instance will illuminate the epistemological and methodological possibilities that are available” (Mills et al., 2006b, p.26). According to Crotty (1998, p.3), epistemology is “the theory of knowledge embedded in the theoretical perspective and thereby in the methodology”. A constructivist grounded theory (CGT) recognizes that data do not open a window to reality; rather the ‘discovered’ subjective truths arise from the interaction with its temporal, cultural and structural contexts (Charmaz, 2000). Thus, a snapshot of what is going on at the specific time, at the specific place from the gaze of specific viewers is taken by the researcher. She, like an eagle flying above, tries to compare what she sees with other perspectives to create a mosaic of concepts that can be conditionally related to purposes or grouped to form generic concept-categories. Findings of this study are either constructs of participants and analyst’s perceptions (Charmaz, 2006) or data emerging during the investigation process (Glaser, 2005). Both concepts are not mutually exclusive in my mind as a researcher, but they can be used to provide a more holistic explanation of phenomena. Furthermore, causality is suggestive because it remains open to refinement. Outcomes are not seen as real or not but as useful or not. In other words, the CGT analysts try to “interpret how subjects construct their realities” (Charmaz, 2000). Mills states that, “Ontologically relativist and epistemologically subjectivist, constructivist grounded theory reshapes the interaction between researcher and participants in the research process and in doing so, brings to the fore the notion of the researcher as author” (Mills et al., 2006b, p.31). Thus, art and science harmoniously co-exist in the process of re-constructing

the ‘subjective realities’ of the participants (Strauss & Corbin, 1998). In the context of SVC, the participants’ stories are filtered by the skilfulness of the researcher and the social interaction of the interview process; meaning that subjective interpretations are socially constructed or data emerging to form a perception of a specific phenomenon (SVC forms and possibilities). The art as creativity or inspiration, and science as a meticulous research process and literature review, work hand in hand to formulate a theory, while explaining SVC praxis.

3.3 Criteria for evaluating the research findings

Research should be evaluated by the very constructs that were used to generate it (axiology).

i) External validity versus Transferability/Practicality

One constraint of this study is related to the nature of grounded theory research regarding the concept of **generalizability or external validity**. Grounded theory is appropriate for ‘theory building’, but it is not appropriate for “theory testing” (Woolley, Butler & Wampler, 2000, p. 318). The inability to generalize to larger populations is the primary limitation of grounded theory (Gall, Gall & Borg, 2003). Denzin and Lincoln believe that, “All research is interpretive; it is guided by the researcher’s set of beliefs and feelings about the world and how it should be understood and studied. Some beliefs may be taken for granted, invisible, only assumed, whereas others are highly problematic and controversial” (Denzin & Lincoln, 2005, p.22). Thus, it is important that constructivist grounded theory esteems every human as a unique being and values all views even when they are contradictory. A specific instructional design may be effective for a group of people but it cannot be considered ‘best practice’ for another. Therefore, the term

generalizability is considered inappropriate epistemologically for this SVC study and it is not the primary goal of grounded theory. However, educators or policy makers, instructional designers could make informed decisions based on the research findings.

It would be a realistic goal of grounded theory to use the term **practicality** or transferability (Anfara, Brown & Mangione, 2002); pointing to the fact that theories constructed are a part of a never ending research refinement, facilitating future research. In other words, research findings aim at explaining some educational forms and possibilities of SVC and the corresponding contextual factors, so that educators can decide what may be practical for them to implement at different times with different student groups. By providing a theory of the form and rationales of SVC from educators' perspectives, educators may have a variety of options and rationale to choose from. However, **transferability** has nothing to do with the notion of "best practice" that can fit all models. It is more like a 'collage' of concepts that the researcher could examine in the future and educators may adopt in specific circumstances in accordance with their personal teaching method or learning objectives for specific learners. **Practicality** of GT concerns itself with social good and usefulness and therefore, it should be practically useful for professionals and laypersons (Selden, 2005; Glaser & Strauss, 1967). Both concepts of practicality and transferability aim at describing better research purposes.

ii) Reliability versus Internal Validity

A constructivist, contextual perspective holds that human behaviours and the roles of the researcher are dynamic and therefore cannot be replicated by other academics.

Therefore, the concept of reliability in terms of replication is tied to quantitative and positivist reasoning and out of the frame of SVC study. The question that remains is “How can an inquirer persuade his or her audiences that the research findings of an Inquiry are worth paying attention to?” (Lincoln & Guba, 1985, p.290). What is in agreement with the SVC epistemology and ontology is the concept of internal validity conceptualized as “dependability” or “consistency”, which can be a realistic goal of grounded theory (Anfara et al., 2002, p. 29). As a consequence, in order to establish internal validity, this study utilized the following procedures: member checking (Lincoln & Guba, 1985), researcher reflexivity and transparency (Charmaz, 2006), rich and thick descriptions (Creswell & Miller, 2000; Fernández, Martin, Gregor, Stern & Vitale, 2006; Goulding, 2001), and thorough literature review that bases on categories of the analysis and contextual factors. Charmaz (2006, p. 132) agrees with Glaser that grounded theory is not a verification method and offers the term “plausible accounts” in contrast to ‘verified knowledge’.

3.4 Methods & research design

In which ways and for what educational purposes do educators use synchronous video-enhanced communication SVC (this could include tele-conferencing, webinars or Skype video) to support distant learners? Distant learners have special needs and educators have to find creative ways to transfer knowledge and facilitate the learning process. They have special needs because they cannot attend classes on campus, most of the time are mature students working, come from diverse socio-economic backgrounds and rely heavily on technology to communicate with educators and other students. Thus, the theorist investigates the role of synchronous video communication with the purpose to find out how educators could use synchronous

tools to promote learning objectives and motivate, inspire and enhance learning from a distance.

3.4.1 Sampling

Participants for this study are recruited from NL conferences and a Facebook group entitled 'technology enhanced learning' that to-date consists of 188 educators from many countries who share an interest in technology enhanced learning (TEL). As a first step, an e-mail was sent to each one personally, explaining the research questions, processes, aims, methodology and the ethical considerations taken into account (see Appendix three). Only people who used SVC and had at least one year's experience of e-learning tutoring were chosen to provide research information from the group. Experience was the basis on which the informants were selected to ensure better data collection. The more experienced the educator is with online education, the fewer barriers they perceive (Lloyd, Byrne & McCoy, 2012). After written responses were received, semi-structured interviews were arranged with 18 educators (see interview schedule in Appendix two). These interviews were recorded and analysed.

Facebook can be regarded as a scale-free network that does not necessarily privilege any particular types of relationships, either among people or between people and resources. An order of this type may affect learning (Buchanan, 2003) and facilitate the sampling process. Mark Granovetter (1973, p.1371) explained: how weak ties transmit information more quickly and more diffusely than strong ties do. Those to "whom we are weakly tied are more likely to move in different circles from our own and thus will have access to information different from that which we receive." Weak

ties connect small groups of friends, linking people together to form an elaborate network of social relationships. Brickman states that, “Facebook offers researchers a way to capitalize on the strength of these weak ties” (Brickman, 2012, p.24).

For research purposes, the Internet appears to be a very promising medium because it provides access to participants from all over the world. Benfield and Szlemko state that “As a vehicle for data collection, it promises increased sample size, greater sample diversity, easier access and convenience, lower costs and time investment, and many other appealing features” (Benfield & Szlemko, 2006, para.3). Moreover, university educators have their curriculum vitae and blogs online which makes it easier to find out what they have done, what their research interests and publications are. Hence, the researcher could easily access enough information to decide whether specific people have sufficient experience to provide feedback.

The 18 respondents, emanating from a variety of backgrounds, come from five continents and from a wide spectrum of disciplines. Their university pages are rich with research projects and publications. Interviews were conducted from September 2012 up to November 2012 via Skype audio conference. As university academics, they were all well-informed about research procedures and ethics.

3.4.2 Instruments

Despite the fact that some analysts consider qualitative research and interviews as unreliable (Roulston, 2010), it is a valued approach of data collection in various disciplines because it gives researchers the opportunity to deepen their understanding of the phenomenon under investigation because of the dialogue between the

informant and the interviewer (Silverman, 2006). The interview approach echoes more or less the research question and keeps a balance between what the interviewer believes and what the interviewees maintain, in order to socially construct data or let data emerge from participants' narrations. Any research procedure or instrument carries with it a sense of 'telos'; "that is, it embodies the researcher's sense of an appropriate developmental path for people to follow, and produces data that identifies people's progress or achievement according to the direction of that path" (Smagorinsky, 1995, p.200). To elaborate, as the Greek etymology of the word 'telos' is concerned, it is the end of a journey that contributes to the degree to which the researcher and participants grasp and build on one another's sense of telos, and value the meditational means that enable people to achieve that sense of telos (Smagorinsky, 1995). The meditational means were a flexible qualitative perspective based on semi-structured channels of communication via online meetings.

Being at the phase of data collection, I realized that the questions used in the semi-structured interviews were also emerging categories that could be used later in the first phase for open coding. The process of using open ended questions would help the research process to categorize data according to what the researcher has identified as potential categorization but without constraining the participants to create more categories during the course of interviews. The questions asked are focused on opinions/values (what educators think about the topic), on behaviours (what educators do to reach specific learning objectives) and on feelings (how educators enhance motivation and togetherness when they teach in real time networked learning framework).

Table 3.1: Categories based on interview questions

DOMAIN	CATEGORIES
Educators' perceptions of SVC:	A: Value and merit of SVC
	B: Strengths of SVC
	C: Weakness of SVC
	D:Teaching Approaches/ Educational Purposes
	E: Educator's Role (Teacher presence)
	F:Learning Process (Cognitive presence)
	G:Presentation of the content (Cognitive presence)
	H: Immediacy & Intimacy (Social presence)
	I:Contextual factors & Pedagogies

Table 3.1 describes the general categories according which the questions were built.

Semi-Structured Interview Content

A. General questions

1. What is your general impression of the value and merit of videoconferencing?
2. What would you say are the main strengths of videoconferencing?
3. What would you say are the main weaknesses of videoconferencing?

In the first section, the three questions are broad enough to allow for different responses while monitoring educators' perceptions/opinions of synchronous video communication.

B. Educational Purposes

Could you comment on the **educational purposes** of the following teaching approaches 1-5?

1. Educator-led presentation - Tele-conferencing (with opportunities for questioning and dialogue)
2. Educator lectures in real time - Webcast (with limited questions and strong teacher presence)
3. Assignment feedback discussed and checked by educator via videoconference
4. Student collaborative tasks via videoconferencing
5. Archiving of online meetings for reflection purposes (for example, to analyze one's teaching style or interactional patterns)
6. Which synchronous teaching approaches 1-5 do you use most often and why?
7. Which synchronous teaching approaches 1-5 do you use least and why?

The purpose of using the above list of questions is to find out for what reasons and learning objectives educators use different forms of synchronous video enabled communication to support distant learners. The emphasis was not placed on tools but on methodology and pedagogy. To add, two questions are written to determine which of the synchronous communication approaches were most or least used and why. The rationale underlying these questions is to correlate current praxis with educational purposes served so far.

C. Teacher presence, cognitive presence and social presence

1. To what extent and how does the role of the educators change, when they use synchronous video communication in comparison to asynchronous communication?

2. How could educators inspire, motivate and support students with synchronous video communication?
3. How does synchronous video communication affect the learning process?
4. How does synchronous video affect the presentation of subject content?
5. How does synchronous video communication affect a sense of togetherness (*intimacy* and *immediacy*)?
6. What contextual factors could influence student participation during online meetings?
8. Are you aware of any pedagogic model or learning theory supporting video mediated synchronicity in a networked learning environment?
9. Is there anything else you would like to add or clarify?

Then, the interview focuses on cognitive, social and teaching presence in the networked learning context to discover if synchronous video mediated communication affects connections between learners and educators, learners and the online community and if it facilitates the learning process and context presentation. In the next stage, informants had to reflect on the role of the educator during synchronous meeting and to reveal if the changes related to medium should be taken into account. To shed more light on synchronous processes, the contextual factors that could influence SVC needed to be made more explicit. Experienced educators might be able to spot some aspect of synchronicity that affects synchronous interactions negatively or positively. Feelings of togetherness, immediacy and intimacy related to social presence may influence teaching performance and active learning; thus somehow they have to be identified as part of the investigation. Furthermore,

contextual factors and pedagogic approaches would be explored to link current praxis with the art, philosophy and praxis of teaching synchronously.

Demographic questions

1. What is your area of instruction/discipline?
2. How long have you been teaching e-learning courses/seminars?
3. How long have you deployed synchronous teaching approaches to support distant learners?
4. Are there enough institutional support structures to assist educators to use synchronous video enhanced tools?
5. Where is the physical location of the university/organization in which you work?
6. What are the general characteristics of your student groups?

In the last part of the interviews, the demographic questions aim to find out some crucial information about the research sample that would add value to their credibility. The experience in teaching distant courses and using synchronous approaches is considered a key factor in providing empirical and theoretical data for the study. The range of disciplines represented in the backgrounds of the participants' study, could provide additional information to the exploratory nature of GT. The data could better explain teacher, cognitive and social presence via tele-operations. The physical location of the university is a determinant of how culturally diversified the research sample is. The majority of students come from different cultures such as African, European, American and Australian. The diversification of the informants is considered an advantage in the frame of IGT.

3.4.3 Data analysis

A common word that Glaser and Strauss (1967) use is “emerge” meaning that data should not be forced into categories from a pre-existing theory but should emerge (Allen, 2010) or be constructed based on the researcher and informants’ interactions (Charmaz, 2006). As a researcher, I perceive the idea of emergence and social construction of data as complementary for this research. Some categories were somehow pre-determined based on the questions asked; others emerged during the interviews that were totally unexpected. The basic idea of GT approach is to interpret a textual database (such as a corpus of field notes) and explore codes (categories, concepts, and properties) and their interrelationships. According to Muller (2010): “A code sets up a relationship with your data, and with your respondents.... a matter of both attachment and separation....Codes allow us to know about the field we study, and yet carry the abstraction of the new”. Glaser (1978) defines as ‘theoretical sensitivity’ the ability to perceive codes and relationships affected by one's reading of the literature and one's use of techniques designed to enhance sensitivity. Glaser (1978) discusses the role of theory and its importance in sensitizing the researcher to the conceptual significance of emerging concepts and categories. Pre-existing knowledge and theory are used, as if they were another source of information. Without grounding on an updated body of literature, pattern recognition would be limited to the obvious, depriving the researcher of the conceptual leverage from which to develop analysis (Glaser, 1978).

Interpretive approaches rely heavily on naturalistic methods (interviewing and observation and analysis of existing texts in a heuristic framework). A map of concepts is used to creatively approach the process to make participants and analyst’s way of

thinking visible. Moreover, an adequate dialogue between the researchers and those with whom they interact in order to collaboratively construct a meaningful reality emerges from the research process. Falloon (2010, p.114) claims the following:

The goals of interpretive research can be loosely defined as the revealing of participants' views of reality (Lather, 1992), and was selected as a suitable framework for this study as it enabled the researchers to work within a world of multiple realities, and study the manner in which people operate, interact, and make decisions, based on the way they view and attempt to make sense of the world. (Falloon, 2005, p. 82)

3.4.4 Open, axial & selective coding

For the purposes of the specific research, I conducted 18 semi-structures interviews, which were recorded and analysed, beginning with an **open coding process**. Like other qualitative researchers, grounded theorists code to summarize, synthesize, and sort out data; they also use codes as conceptual tools (1) to fragment the data and thus take them apart; (2) to define processes in the data; and (3) to make comparisons between data (Thornberg & Charmaz, 2012). In a Microsoft word document, the interview recordings were transcribed to be read again and again. At first, I formulated categories based on each question. In the axial coding phase I realized that all the documents needed to be read again because critical information was in different parts of the document. Then, I rearranged the categories in accordance with the Community of Inquiry model (Garrison et al., 2000), which provided a scaffolding to link data to categories. Strauss and Corbin (1990, 1998) wrote about the axial coding and defined it in 1990 as “a set of procedures whereby data is put

back together in new ways after open coding, by making connections between categories”. In this study, the coding techniques are procedures that are designed to be used flexibly and creatively. The third level, selective coding, searches for a core category, or ‘story line’ (Creswell, 1998, p. 57) that could be developed into a theory. Strauss and Corbin (1990) emphasize that data analysis techniques and procedures, however necessary, are only a means to an end. Strauss and Corbin state that, “They are not meant to be used rigidly, in a step by step fashion” (Strauss & Corbin, 1990, p.14). In the final stage of analysis that is selective coding, I related the core category and the contextual factors with the literature review to generate a theory.

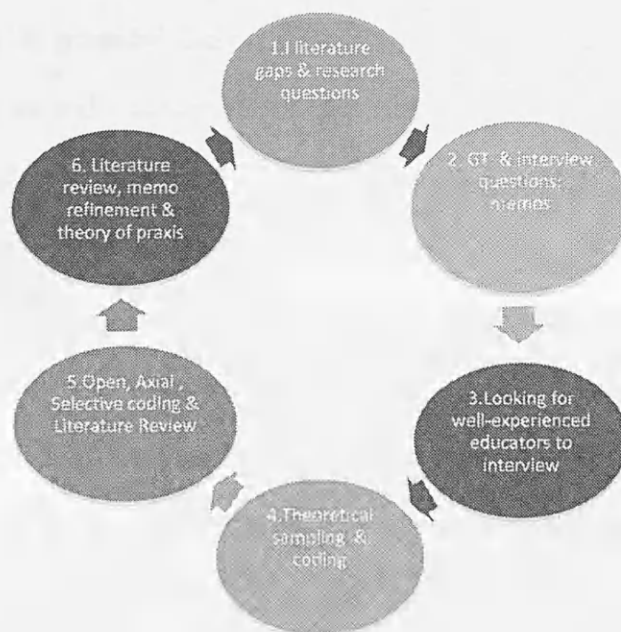


Figure 3.1: SVC Research phases

Figure 3.1 starts with literature review. To identify gaps and current praxis, I came up with a research question that is the basis for theory formulation. The next important step was to find well-experienced educators who were willing to contribute. When 18 educators had participated, then I categorized data based on the rationale of open,

axial and selective coding. The final stage was to present the core category, teaching approaches and the contextual factors that influence the theory of SVC praxis and fill in the gaps I had already identified in my literature review. Literature exploration was part of the axial and selective coding process. Glaser and Strauss explain frequently in *Discovery* (1967) that “the process of grounded theory is circular and that analysts need to return back and forth between coding, memoing, and hypothesizing” (Allen, 2010, p.1617).

3.4.5 Memos

In the background of grounded theory, memos are very important (Glaser 1998). Strauss and Corbin are really concerned with describing and coding everything that is dynamic -- changing, moving, or occurring over time -- in the research setting (Mills, Bonner & Francis, 2006a, p.11). Reflective memo writing makes clear the multiplicity of influences in the reconstruction of theory. By consciously and consistently reflecting on my history, values and beliefs while writing, the researcher will contribute to a theory that escapes being “the [subconscious] container into which the data must be poured”. Through the use of memoing and comparative analysis the researcher is able to check if the memos fit into the emerging theory and as Streubert-Speziale and Carpenter (2003) suggest, memos that do not fit are set aside. This means that in grounded theory, memoing has a dual purpose of being part of data analysis and countering subjectivity thus ultimately enhancing the likelihood of producing accurate research findings.

3.4.6 The structure of chapters

Researchers engaging with GT, often use the ‘traditional’ report structure: ‘literature review- findings –discussion’. For my study, this outline could not work effectively because I wanted the natural development of the research to be mirrored in the writing of my thesis. Therefore, I was inspired by Dunne (2011) who reviewed the literature at an early stage to ‘contextualize’ the study. In this way, readers can better understand the field of synchronicity in distance education and follow my steps in the research path. In this sense, I was able to explore the ‘geography of the subject’ (McMenamin, 2006, p.134) as described in Chapter 1 (network learning and pedagogies and learning theories) and 2 (contextualizing the subject). Then, I identified areas that have been largely overlooked. In terms of engaging with existing theoretical concepts, the fact that I have completed a postgraduate degree in the field of Networked Learning meant that I already had some existing theoretical knowledge. Therefore, I began to consider how theories with which I was already familiar could perhaps be used in the process and analysis. I came up with the Community of Inquiry model which was used in many studies as it provides a way to heuristically stimulate research on networked learning. During the axial and the selective coding phases (Chapter 5 & 6), I also sought to identify other research and theories which could explain or contradict the ideas expressed by the research participants. However, during the application of comparative methods, which involved seeking out theoretical ideas from diverse fields, I became familiar with numerous theories that explicate my findings. Lempert (2007) argues in favour of:

On-going researcher familiarity with the literature of the substantive area of study and its applicable theories. Engaging the literature provides the researcher with knowledge of the substantive area in sufficient depth to

understand the parameters of the discourse and to enter into the current theoretical conversation. (Lempert, 2007, p. 261)

In this sense, I have written Chapter 5 and 6, imitating the research process and analysis as it happened. This, however, was done while reflecting on how ideas might be impacting upon the research and I would regularly force myself to justify propounding specific arguments.

Due to the fact that the structure of the following Chapters (5 & 6) do not follow the 'traditional template' of GT reports, it is imperative that I clearly articulate this issue from the outset in order to defend my preferred option and minimize potential misunderstandings between the reader and the author. As Dunne (2011, p.120) maintains, "given that the grounded theory research process is non-linear, it is understandable that attempts to present it in a linear format should prove problematic".

3.5 The role of the researcher

The role of the researcher is that of a co-worker trying to reconstruct the experiences of educators, in their use of synchronous communication to serve specific educational purposes. The major concern of the theorist is to surpass the language barriers and to find the appropriate way to ask straight forward questions that facilitate scientific dialogue and reflection.

The logos of language escapes our control, and yet we are the ones, the subjects capable of speech and action, who reach an understanding with one

another in this medium. It remains 'our' language. The unconditionedness of truth and freedom is a necessary presupposition of our practices, but beyond the constituents of 'our' form of life they lack any ontological guarantee. Similarly, the 'right' ethical self-understanding is neither revealed nor 'given' in some other way. It can only be won in common endeavour. (Habermas, 2003, pp. 10-11)

What this quote is underlining is that verbal or written expression sometimes depicts unconscious drives or tendencies and only when findings are socially constructed, researchers could enhance understanding and improve rhetoric- how people write about something. With the help of informants and the supervisor I could make claims about what knowledge is and formulate a theory of praxis.

Kemmis (2005, p.391) argues that 'changing practice', is a "task of changing such things as discourse in which practices are constructed and the social relationships which constitute practice". In the same line of thought, Aristotle, stated that the way language is deployed could stir different emotions that could distort judgment (Rapp, 2010). Special attention is given to rhetorical appeals (logos, ethos, pathos) as described by Aristotle but adapted to the interview questions and research perspective without implying an exact parallel (see below Table 3.1).

Logos refers to the internal consistency of the message-the clarity of the claim, the logic of its reasons, and the effectiveness of its supporting evidence. The impact of logos -asking the right question at the right time- on an audience could facilitate inspiration, analysis and reflection.

Ethos could be described as the trustworthiness or credibility of the speaker/researcher to respect the rights of participants and treat data scientifically. Ethos is often conveyed through tone and style of the message and through the way the writer or speaker refers to differing views.

The third rhetorical appeal that frames the scope of this study is *pathos*. Pathos portrays both the emotional and the imaginative impact of the message on an audience, the power with which the investigator's questions stimulate memories of best and worst instructional experiences regarding synchronous video communication (Ramage & Bean, 1998). Moreover, pathos could be considered as the effort of the researcher to analyze the topic with empathy and approach research participants with appreciative intelligence. "Appreciative Intelligence is the ability to perceive the positive inherent generative potential in a given situation and to act purposively to transform the potential to outcomes" (Thatchenkery & Metzker, 2006). Thatchenkery and Metzker (2006) suggested that appreciative intelligence is composed of three characteristics: the ability to appreciate the positive contributions, reframe it and see how the future evolves. It is not only a theoretical approach, it also involves social actions –"the necessary actions to positively engage with others so that valued outcomes unfolds from the generative aspects of the current situation" (Ghaye et al., 2008, p. 366). Table 3.2 lists the rhetorical appeals that form the theoretical framework. Logos, ethos and pathos have an impact on how I behave, act and organize my work as a researcher. Logos is about asking questions, reframing concepts and generating ideas through interaction and dialogue. Ethos defines the democratic process of credibility assurance and pathos focuses on the behaviours that enhance empathy and appreciative intelligence.

Table 3.2: Rhetorical appeals and research praxis

Theoretical Framework	Praxis
Logos	Asking questions, providing or receiving feedback
	Reframing/diagramming concepts
	Generating new ideas through interaction/dialogue
Ethos	Ensuring credibility of information exchange, responsible participation
	Negotiating of objectives and democratic processes
Pathos	Empathy, authentic understanding
	Appreciating different perspectives, appreciative intelligence

The researcher plays a critical role in generating a conceptually dense theory, consisting of a set of plausible relationships proposed among concepts and sets of concepts (Selden, 2005). In other words as a theorist, I had to find my way through the labyrinth of data and creatively come up with the map of the territory.

3.6 Ethics

In the pursuit of an academically correct stance, I deployed Aristotle's rhetoric appeal to be in accordance with the ethical framework underpinned by the British Educational Research Association (BERA, 2012) in which respect for the person, knowledge, democratic values, the quality of educational research and academic freedom is required. Providing ethical logos for this low-risk research, I respect all the people involved regardless of age, gender, race, religion political beliefs, lifestyle or any other significant difference among such people. The ethical logos and pathos of the researcher empathizes with the way participants think and feel, and avoids situations in the research studies in which perceptions of advantage to individuals over others are fostered.

When the number of participants is small (18) and the informed GT methodology requires thick and rich descriptions, care must be taken to preserve confidentiality and privacy (Denzin & Lincoln, 2005; Richards & Morse, 2007). The code of research with the participants consisted of not causing any emotional discomfort or psychological pressure. No personal information is disclosed either verbally, or electronically, written or by any visual means without the written permission of the participants. Participation was voluntary and participants were entitled to withdraw at

any stage of the research. To add, informants are themselves researchers and educators and are well-aware of ethical issues.

The transcriptions and the written notes derived from the interviews were sent to the interviewees for examination and further reflection so that they could change or add any information they considered important before the data analysis. Compliant with what BERA regards good practice (BERA, 2004, p. 10), “participants that requested, prior, during or after the research, to be informed about the research outcomes and publications”.

3.7 Importance & limitations

The importance of the methodology and methods lies in my assumption that collaborating with well experienced NL educators and literature review could be a way to shed light on the potential of SVC. Few studies have examined shared perspectives of distance education in different contexts or from around the world (Hsieh, 2010). The variety of international perspectives and the flexibility of the methods could lead to a telos –direction of a path- as described by Smagorinsky (1995). The limitations of the SVC research lies in the nature of methodology which focuses on theory formulating and not theory testing. Findings can be seen as a new knowledge that could be transferred only in cases where the educators themselves find it practical or useful to promote further research and praxis.

3.8 Criticisms of Grounded Theory

One criticism of GT was the positions imbued with positivism and objectivism. Postmodernists and post-structuralists dispute the subtle positivistic premises as described by the proponents of GT (Charmaz, 2000). Barnet (2005, p. 778) supports that 'in a postmodern world, no doctrine, no value and no principle can be upheld with absolute assurance'. Whereas, Strauss & Corbin's (1990, 1998) claims assume an objective external reality that can be observed by the analysts critically through systematic and scientific data collection. They are moving towards positivism, arguing that respondents and investigators can have conflicting views but both conflicting ideas can be objectively presented in a prescriptive way at the end of the research (Mills, Bonner & Francis, 2006).

The gap between postmodernists and 'traditional' grounded theorists could be filled for the progress of scientific dialogue. From my point of view, both claims deserve equal attention in different framework. For example, an educator who chooses to use synchronous tools to serve specific learning objectives needs to take a firmer stance (positivists) to build her curriculum; whereas the researcher of this study could adopt a more flexible and relativistic stance to face scientific skepticism. Sudday states that, "A simple way to seize this middle ground is to pay attention to extant theory but constantly remind yourself that you are only human and that what you observe is a function of both who you are and what you hope to see" (Sudday, 2006, p.365). Sudday (2006, p.641) maintains that researchers can best understand GT methodology that is "attentive to issues of interpretation and process and that does not bind one too closely to long-standing assumptions".

Three main categories of discrepancies of grounded theory have been identified: a) theoretical implications, b) systematic versus heuristic/interpretative coding, and c) literature review- either in the beginning or at the end of the research process.”

Theory is a Greek word, etimologically defined as “view” and “gazing”. Every word has a history with changes and shifts that influence meaning. With the original definition in mind, theory is a set of views/concepts that the researcher has developed using epistemic fluency. The term ‘epistemic fluency’ describes “the abilities, predispositions and practices involved in combining multiple ways of knowing” (Markauskaite & Goodyear, 2009, p.154).

Some theorists deem GT research as **atheoretical** because it deploys a different starting point than other problem solving or hypothesis formulating research methodologies (Goulding, 1998; Morse, 1994). It is based on exploration, discovery and creativity (Creswell, 1998; Curry, 2003). Grounded theory is about generating good ideas (Glaser, 1978). However, if it is “used unintelligently it can degenerate into an empty building of categories or a mere smokescreen used to legitimise purely empiricist research” (Silverman, 2000, p.145). “The researcher has an obligation to ‘abstract’ the data and to think ‘theoretically’ rather than descriptively” (Goulding, 1998, p.55). On the other side of the argument, Charmaz claims that quantifying research paradigm could lead to controlling variables rather than testing theories; so in this sense the logico-deductive model of quantitative methods can be considered atheoretical too (Charmaz, 2006). To top it all, different views dictate different research paradigms which are always open to refinement and criticism. Kiss (2006, p.311) refers to Lakatos’ ideas that “the essence of scientific thinking is neither the

methods of proof, nor the ways of discovery, but rather their common basis - the dialogue of scientists about their experiences and truth". All methodologies, either qualitative or quantitative could be atheoretical, if the researcher does not utilize the epistemic fluency needed to formulate a theory.

Strauss and Corbin's version (1990) of the method as it is described in their book, *The Basics of Qualitative Research* which incorporates a strict and complex process of **systematic coding**, is not deployed, because it may be restrictive for data analysis. It is entirely possible to complete a grounded theory study, or any study, yet not produce findings. If I simply follow GT procedures/canons without imagination or insight into what the data demonstrate – I may fail to see what participants are really saying except in terms of trivial or well-known phenomenon – then the published findings can be judged as a failing on this criterion (Strauss & Corbin, 1998). For the purposes of this study, a stronger emphasis is placed on interpretation rather than systematic coding. The methods chosen to collect data are treated as tools rather than recipes to follow requiring 'rich-detailed and full-data' placed within their 'relevant situational and social contexts' (Charmaz, 2006, pp.10-11). Generally speaking, strict techniques could 'force' data into categories while heuristic/interpretative coding could allow data 'emerge' naturally or 'construct' socially (Allen, 2010); both concepts are considered complementary for my research design.

Thornberg & Charmaz (2012) suggest starting with a **literature review**:

that instead of risking reinventing the wheel, missing well-known aspects, coming up with trivial products, or repeating others' mistakes, researchers indeed can take advantage of the pre-existing body of related literature in

order to see further...No neutral position exists; no objective god's-eye view of the world is available... [and there is instead a recognition of the] embeddedness of the researcher within the specific historical, ideological, sociocultural, and situational contexts. (Thornberg & Charmaz, 2012, p.63)

Thus a literature review can be used:

...as possible sources of inspiration, ideas, “aha!” experiences, creative associations, critical reflections, and multiple lenses... [as long as] researchers remain open to the field under study and the data they are gathering, take a critical stance towards pre-existing theories and research findings throughout the research process, and subject all ideas to rigorous scrutiny. (Thornberg & Charmaz, 2012, p. 63)

While the originators of GT maintained that delaying the literature review till after a theory is firmly established, would be better to avoid biases. Personally, I identified the gaps in the literature before orchestrating SVC investigation and reviewed the literature in the axial coding phase and in the end of the research process, in order to come up with an explanatory formulation of a theory. While the literature presented in chapter 2 constituted a ‘contextualisation’ of the research, (Dunne, 2011), recent studies were presented in Chapters 5 and 6 to compare and contrast my findings with the works of other scientists. The potential risk that the decision-making literature could influence data analysis was recognized. Therefore, strategies that enable researchers to stay close to the data are critical if the potential bias from a literature review is to be avoided (Elliott & Higgins, 2012). “However, in order to fully utilize the method, there must be recognition that it is time-consuming, often frustrating, and

because of the nature of the method, often takes the research in a number of different directions before a plausible theory starts to emerge” (Goulding, 1998, p.56).

GT was chosen for this study because it offers a research exploration with no absolute premises. The answers to the research questions are views of educators from different contexts. The discovery element of GT can be traced to the views the researcher is not able to see from her point of view and the data is grounded on the reflections on participants and literature review with the assistance of comparative analysis. The data was collected and constructed with the cooperation of all involved but also emerged from the reflection process of the researcher and the dialogue with supervisors and colleagues. Some authors ask (Thomas & James, 2006), **what is my epistemic collateral in GT?** It is a shared vision that combines educators’ perceptions from different fields. The answer lies in the exploration of as many educational uses and views on SVC as possible, in order to provide the readers of this investigation with more options. Instead of seeing the world as black and white, yes and nos, the researcher sees many dimensions of colors. **Where is the theory in IGT?** (Thomas & James, 2006). It is located in the fidelity and ethics framework of the study to present the participants’ visions and praxis and compare them explicitly to provide meaning.

3.9 Summary of chapter 3

To sum up, Chapter 3 describes **ontology** that entails people making claims about what knowledge is, **epistemology** as how people know it, **axiology** as what values go into it, **rhetoric** as how people write about it, and **methodology** as the process for studying. The frame of Informed Grounded Theory (IGT) deployed to answer the

researcher's questions of the study and interpret data. It is Informed Grounded Theory as presented by Thornberg (2012), Glaser and Strauss (1967), Glaser (1978, 1998, 2005), Strauss and Corbin (1998, 1990), Charmaz (2000, 2006, 2008), Charmaz & Thornberg, 2012) and Dunne (2011). Breckenridge and Elliott state that, "Given these fundamental differences, it is essential that researchers are clear and consistent in their choice of methodology, following one path rather than engaging in a methodological pick and mix" (Breckenridge & Elliott, 2012, para.23). As a researcher I disagree with the above argument because through creative mix and amalgamations, theories and knowledge evolve. Hence, methodology is identified and described through the lens of the researcher's epistemology and ontology (Annells, 1996). The epistemology and ontology is in the framework of Charmaz's constructivist grounded theory approach, while the data was treated based on theoretical sensitivity, sampling and playfulness, linking phenomena to contexts. Literature review was a guide on the side of my research from the beginning to the end of the selective coding phase. The important note here is that the research design and the structure of the following chapters have to be clear to the readers. IGT has provided a set of methods for novice researchers to map the substantive area and to formulate a theory, step by step. The axiology (criteria) of my work is based on the sampling (well-experienced participants), the thick descriptions of the data and the theoretical sensitivity that led to the core category. I have chosen semi-structured interviews via Skype to approach research participants, the early adopters of synchronous video enhanced tools. My role as a researcher was seen through Aristotelian rhetorical appeals that promote ethos, logos and pathos without assuming exact parallelism. The focus is not on producing and verifying facts, findings or accurate results but in generating concepts that are variable and modifiable (Glaser,

2005). The theory formation is regarded as a conceptual framework that could help course designer/educators to make informed decisions about how to use synchronous video tools to enhance presence and what contextual factors may have an impact on teaching and learning in video-mediated environments. The next Chapter presents the data collected in categories as an open coding process.

Chapter 4: Data Presentation/Emerging Categories

Chapter four not only deals with the emerging categories from the open coding process but also includes participants' stories. The specific narrations offer some snapshots of the research which took place in many countries, collecting data from e-learning educators that have mastered synchronous tools to serve learning objectives and students' needs.

The educators were found in online communities or conferences in the networked learning area and were invited to participate with e-mails. The ones who responded had provided information that they were well experienced in distance education and their teaching and research profiles are depicted in the faculty section of the university they work for. Research was based on respondents from developing and developed countries; as a result, the selected participants were very likely to be the early adopters who have enough international experiences to share. The 18 respondents emanated from a variety of backgrounds, coming from five continents and from a wide spectrum of disciplines. There are five participants from the UK, three from Australia, two from Canada, two from the USA, two from Greece and one from South Korea, South Africa, France, and Spain. They teach medicine and nursing, medical sociology, educational research, computer engineering, languages, instructional design, environmental sciences, e-learning development, educational technology, interdisciplinary human studies and vocational training. The interviewees were contacted via Skype and three of the participants responded to the questions in writing. After the interview process was over, the transcripts were sent to the interviewees, in case they would like to add, change or correct data.

The open coding is the process of breaking down, labelling, categorising the data based on the questions asked. The categorization was to follow the sequence of the questions and focus only on the relevant information related to the question. What I was trying to do at this stage is to identify the meaning of the data, make comparisons and look for similarities and differences between comments, behaviours and perceptions. Along the way, memoing is an important part of the procedure in order to gather first impressions from interviews and informants and then reflect upon them in the coding phases. Memoing started early, though, when studying the gaps in the literature review and learning how to use Informed Grounded Theory.

4.1 Participants' stories

What makes studies robust is often the systematic, unbiased analysis but the strength of the data is usually based on the research sample. The informants and supporters of synchronicity have very interesting stories to tell and recommend specific synchronous scenarios for learning episodes. Hence, due to the fact that it would not be possible to present all of them, individually, three participants are chosen to profile the sample.

The first story comes from Canada, for anonymity reasons, he is to be called Pierre, the educational technologist. **Pierre (P18)** teaches courses all over the globe and talks in conferences about e-learning and distance education, trying to organize research groups around the world to face the challenges imposed by distance education. He tries not only to solve the puzzle of how to enhance students' accessibility to universities worldwide but also to improve quality learning while decreasing costs.

Based on his 25 year experience in distance education and 14 year use of synchronous video enhanced tools, Pierre thinks that video enhanced communication has a critical role to play in distance education in a world where information doubles every 4 years (UNESCO research). What he advocates is to create universal courses combining synchronous and asynchronous tools to make education as close to face-to-face instruction as possible. To illustrate, he gives the example of an educator who meets her students regularly, to have synchronous video mediated communication, to instruct, discuss and resolve potential misunderstandings and use asynchronous platforms for assignment tasks as well. The specific model, as he maintains, confirms quality because it is similar to face-to-face instruction which educators and students are familiarized with. It requires the same contact time/seat time, lower front- end design, faster start up and higher faculty buy-in (educators can have the contact and interactions with their students and do their research or attend conferences at the same time). Moreover, it allows for more student accessibility, higher interaction, less isolation and instructor alienation which leads to significantly lower dropout rates and higher satisfaction levels. To prove his point on how students value the synchronous communication, he draws his assumption from current research findings. As far as the administrators' perspective is concerned, the synchronous/asynchronous combination model is cost-effective, because it entails lower start-up costs, higher off campus enrollment levels, greater flexibility and many costs are offset or avoided. In other words, there is effectiveness with lower costs. To top it all, Pierre underlines that the specific synchronous mode of delivering instruction is faculty driven and initiated because he has experienced that educators want to have contact with their students and detest making order out of the chaos that forums can create. The proposed teaching approach is best suited to graduate students who are mature, working professional, autonomous learners who are digitally experts.

Pierre orchestrates pilot studies and supervises several PhD candidates/researchers that focus their research on synchronous video enhanced teaching to specific population such as the Arab-speaking countries or indigenous communities. Talking with Pierre, the insight that was provided shed light on different areas such as the lack of institutional support, the information decay, the educators' resistance to adopt asynchronous approaches, and the educators' cognitive load when trying to teach and manage complicated technology at the same time. Pierre's argumentation is as the instructional design he proposed, as simple and effective as face-to-face interaction could be.

The second participant described was chosen based on her dedication and persistence to produce quality learning experiences under dire circumstances. She is to be called **Maya (P5)** and she comes from Australia but lives and works for a University in Africa. Maya is a lecturer in the department of nursing and public health, comes from a strong educational and research background and develops the e-learning strategy at the university she works for, having real challenges. In a country like South Africa, there are seventy universities and thirty of them have some form of videoconferencing because of the vast distances, bad roads in the province and the specific socio-economic and demographic circumstances that do not allow students to attend courses regularly. The demand for medical education is high which makes e-learning developers like Maya be creative and resourceful to provide access for more students. Trying to connect students and educators even in the most remote areas, they have created the so called 'dedicated units' equipped to promote synchronous video mediated communication within hospitals. As a result, people with no internet access can go to the dedicated units to be able to attend virtually the university facilities. The technological implications, the

low bandwidth, lack of digital skills, huge student population do not discourage her and she continues using the relevant synchronous technologies with the help of a learning technologist who trains students and educators as well.

Maya believes that synchronous video communication provides not only access and equity to students living away from the urban centers but also quality education. Thus, she has conducted research projects to

1. assess perceptions of lecturers regarding videoconference as a teaching modality
2. assess the prior experience of the lecturers of using videoconferencing for teaching
3. evaluate the implementation of a pilot VC education program.

Maya published her research findings in medical journals in 2012 and explained how the synchronous approach adopted could prove to be equally effective as face-to-face instruction. Despite the fact that both students and lecturers had very little prior experience of video-conferencing, she felt that it was vital to increase access for rural nurses to high quality specialist education. There were though concerns mainly about technical issues in running and conducting the sessions and the application of progressive education strategies using this technology. The data collected led her to the conclusion that videoconferencing could provide technology enhanced learning for remote nurses, but for optimal use, the presenters need to be trained in the use of SVC.

In another study she published in 2012 that was conducted with the assistance of two other colleagues, Maya systematically reviewed the literature and tried to answer the question: “How effective is videoconference-based education for the education of doctors and nurses?” The five surveys conducted strongly indicated that the use of

videoconferencing for nursing and medical education should be encouraged along with guidelines for the use of videoconferencing. Based on her experiences and literature review in the medical education, she puts great emphasis on training, pedagogy, protocols and guidelines for content presentation and etiquette for synchronous interactions.

The third research participant has been working as a professor of instructional technology and as a coordinator of Instructional Technology Master's Program in the USA. She is to be called **Marianna** (P11) and she can be considered an early adopter of videoconferencing. She comes from Iran but works for an American University that has implemented state of the art innovative programmes with high definition plasma TVs and Cisco tele-presence systems that require limited bandwidth available and provide life-size images. Marianna's curriculum vitae includes more than fifteen awards such as **Outstanding Teaching Award**, Chief Director of Teacher Education Office, Tehran Iran, **Recipient of Outstanding Faculty for Contribution to the University**, in the USA, **Winner of Cahill Award for faculty research and development** (a joint research project) on handheld computers, UNCW, **Nominated for Graduate Mentor Award by Instructional Technology Alumni Recipient of Million Dollar** from the Office of Research Services and Sponsored Programs (the award was established for faculty members who receive million dollar grant money in the USA) and the list continues with numerous grants received, books, and research published along with the 20 year experience in the field of instructional technology, design, teaching and coordination of e-learning programmes.

During the Skype interview, what was surprisingly repeated during the flow of the discussion was the need for pedagogy, immediacy, human to human interaction and scaffolding of the learning experiencing. The emphasis was on providing quality to the e-learning experience, mentoring students and adopting a problem-based pedagogy. Marianna is not facing technical difficulties; she enjoys the immersive reality and instils passion for her work in her listener.

Marianna, Maya and Pierre, sharing the same enthusiasm for teaching and learning, have opened a new window for e-learning called video enhanced synchronicity. They work in different environments and have striking differences. Marianna and Maya support the idea that time and effort need to be allocated in training and pedagogy, while Pierre maintains that SVC could take the place of face-to-face instruction and the same pedagogies and methods need to be employed. The three portraits depict the participants in extreme situations: limited resources and technical restrictions for large population as in South Africa, an abundance of technical equipment and support for limited student groups as in the USA, while the example of Pierre, who travels all around the globe and gets effectively connected with his students gives another dimension. These participants frame the borders of the research sample. All the other informants are somewhere in the in-between spectrum in terms of technological facilities, educational services and student population.

4.2 Demographics

On average, the participants had 8.2 year experience of teaching distant courses and used synchronous teaching approaches for 5.6 years. The experience in terms of time was the basis upon which the theoretical sampling was based, because the faculty who

had the least experience in online education perceived the barriers as greater than those who had the most experience in online education (Lloyd et al., 2012). Despite the different locations, the nationalities of educators varied greatly in distance education. Six out of 18 interviewees are teaching away from the country of their origin. The educators teach undergraduate courses or post graduate courses in a variety of disciplines. Students varied equally in digital literacy, time-zone availability and age.

Many informants identified a lack of institutional and technical support for faculty and a need for training as far as technologies and pedagogies are concerned. In particular, one of the participants (P10) stated: “I don’t think campuses are still ready for SVC”.

What many participants identified was the lack of funds allocated in the fields of synchronous e-learning and organizational strategic plans to implement technology and training to improve the quality of learning and teaching for distance education. Even in the case of a very high tech innovative program in the USA, where expensive tele-presence equipment was acquired; the program is used for a limited student population. On the other side of the argument, there is the case in an underdeveloped country where an instructional designer and a learning technologist with limited means and huge student population with poor computer skills, establish protocols and find ways to connect synchronously in order to teach doctors and nurses effectively.

A Canadian educator (P18) offered another explanation for the lack of training and technical support. He maintained that educators are resistant to learn how to use new ways of knowledge delivery because they are very busy keeping up to date with their research projects based on which they are hired and promoted in the educational

institutions. Training and using new technologies adds a burden to the cognitive load they have already, given the information decay (the rate of new knowledge construction is becoming more and more rapid). Therefore, technological means that are to be adopted must be extremely easy to use-just pressing a button- without any further educator involvement or technical complications. The rest of the participants interviewed were willing to use the SVC methods but they were discouraged by the lack of stable bandwidth and reliable technologies used, which made their work extremely tiring.

4.3 Educator's perceptions of synchronous video communication

The first category emerged based on the formulation of the three first questions which aimed at finding out educators' perceptions on the value and merit of SVC, the strengths and weaknesses.

Educators valued synchronous communication as being **useful, effective, necessary, and flexible for educators and students**. There were though some recommendations that a hybrid combination of synchronous and asynchronous could address more instructional issues. It was deemed as **necessary** because educators can be connected with students in a unique and cost- effective way providing access to students that might live in remote areas, face special needs or lead a very busy life.

A research participant from the USA, North Carolina (P11) explained the **usefulness and effectiveness** of synchronous video enhanced communication:

You know, perhaps, it was 4-5 years ago, even maybe more that in our program, we moved to videoconferencing as a means of communication. That was the time that the synchronous management tools have just come about and the reason we wanted to adopt that was- at least myself and my colleagues – that we had a lot of students who could not come to campus on a regular basis, so we were offering some of the courses online and they were asynchronous, but we were not happy with the results and the students were not happy either because obviously sorting out ideas and a lot of thinking processes were very difficult to bring that to students' attention or coach them, or mentor them asynchronously and it needed a lot of time spending in the forum of discussion area or sometimes chat was not really effective at all. In general, if you want to know the merits of videoconferencing, we just couldn't get there without it, for thinking, mentoring, modeling, and coaching students in a scaffolding way.

An educator from South Africa (P5) explained that:

In a country like South Africa, we have actually got quite vast distances and we have quite bad roads in some areas and at the province that I work in, we actually have seventy hospitals and from the seventy hospitals that we have, about thirty of them have video conferencing. So, we attribute a lot of value to video conferencing, because it enables us to broadcast education to our remote rural sites. In our province, it's about ten million people and it has seventy hospitals. In our university, we run both medical education and nursing education. There is evidence that it is equivalent to face-to- face teaching, although I have to say that it depends on how good educators are.

SVC provides education for those unable to reach the institution due to financial issues, geographic restrictions or physical disabilities.

Participants (P4, P12, and P16) emphasized the fact that SVC could offer a more flexible **work/study schedule**, which allows educators to travel around the world, attend conferences or work from home without wasting time commuting. A professor from Australia described that his student group is language teachers, most of who are stay-home-mothers and could not learn in another way.

The first question was very broad entailing all the forms of synchronous video communication from free video call software to web conferencing tools that enable screen sharing and interactive whiteboards and plasma monitors. The participants had different technology investment funds to allocate to training and devices which could have an impact on the impressions/perception of the educators. Despite the wide variety of tools used, there was a consensus on the usefulness and effectiveness of synchronous video enabled communication, when it was used with reliable technical support and well-experienced professionals.

The next two inquiries were designed in an attempt to narrow down the strengths and weaknesses of SVC to specify factors influencing teaching and learning from a distance. The main strengths are: **personalization, social trust, social presence/collaboration, identity/authenticity, effective communication based on audio visual cues and emotional contact.**

Educators (P1, P2, P4, P6, P7, P16, P14, P10, P12, and P16) maintained that SVC gives a **sense of the person and builds social relationships and trust**. “It adds the ‘human touch/element’. If the learners do not know their educators or ‘classmates’, it helps them to put a face to a name. If they know each other, SVC helps them to get back in touch on a more social level” (P16).

Another comment focuses on the importance of social trust that could be enhanced through SVC and it was deemed as highly important for younger learners because it decreases dropout rates (P1). A professor practicing computer engineering in South Korea (P2) illustrated that visibility promotes learning and perception while another one (P5) added that visual presence adds to intimacy especially in small groups.

In the same vein, the issue of **identity** is central for the credibility of e-learning courses. There are cases in some institutions where suspicions were justified that some students were not the ones they were supposed to be. An informant (P4) noted that synchronous video enhanced communication would be obligatory at his institution from January 2013 to confirm identity, irrespective of some cultural barriers (women from countries that are veiled). From the educators’ perspective, an informant (P15) recommended that online educators while teaching online have to find ways to enforce their learning style and portray a new online persona. The online persona of the educators is influenced by many contextual factors such as academic expectations/instructional design, technology/institutional support, pedagogy (teacher’s roles), task difficulty (undergraduate or postgraduate level) and contextual aesthetics.

Collaboration and social learning was another factor expressed in the interview. Some participants (P2, P11) considered it a great tool for teaming and collaboration because some courses are problem based, high-tech based, so educators do a lot of teamwork. Students have a hard time working as a team asynchronously so it helps faculty to be able to be there the time students need them. One e-learning designer and educator (P11) said that:

When students posted their questions in a forum area, even if I responded quickly, they didn't go back in the forum the same day, or they were complaining that by the time they received the feedback, the question had completely disappeared from their mind. So coaching, scaffolding, mentoring, problem solving, you could do all that in real time but it's very hard to accomplish them in an asynchronous environment.

Other interviewees (P5, P15) stated that they use SVC for introducing each other before collaboration, a fact that facilitates later in asynchronous interactions. A factor affecting the form of collaboration was whether or not the educator was present. As an informant pointed out: "You do not know if they are collaborating, if you are not there (P4)". This fact made some e-learning educators (P15) discouraged from designing group task online.

Effective communication could be promoted by visual and emotional contact. A medical sociologist (P13) during the course of the interview made the remark that if you talk to a person and you cannot see him/her, it is a less satisfactory experience, even in the case of audio conference. An educator from South Korea (P2) described the significance of visual contact.

Having an educator in front of you, gives you a sensation that you are interacting with a teacher. It is not just a document, a pdf or a static image but an educator who answers questions and that enhances learning. Visually I can work more efficiently with my students when I can see them. Seeing if they are happy, tired or disappointed helps me to know how to talk with them.

An Australian professor (P14) supported that SVC gives the opportunity to have tightly coupled conversations and you get to pick up on the reactions of your audience, the intonation of someone's voice and you get to understand the feelings and you get to understand gestures. Therefore, there is much more meaning that can be transmitted and shared.

Emotional contact (P18) established with visual cues and immediate feedback is another element that can be coupled with effective communication. Educator's enthusiasm can also motivate students because it is very difficult to replicate the enthusiasm of being excited about the content in an asynchronous model. One educator paused and said (P11):

I don't know if you have experienced it, no matter how excited you are about the content of the material, you can't communicate that through asynchronous models because the words are not bringing your tone of the voice, the expressions of your face. Enthusiasm is very difficult and we know that, students get excited, as we get excited about the contents, so I think that emotional contact is a main issue for the motivation. You can get a student excited in a videoconferencing but it is very, very difficult to get a student excited about the content in asynchronous knowledge transfers.

As another informant (P8) commented, humor and wit cannot be easily communicated by e-mails while another one (P2) heightened the puzzlement expressed in the students' faces. Emotions and facial expressions or tone of voice are clearly highlighted in the respondents' voices.

On the other side, the weaknesses had to deal with **technologies, bandwidth speed, specific time commitments, low numbers, body language limitations, and faculty training or faculty and student cognitive overload/ resistance.**

Technology is the main issue that emerged from the data as being the major challenge. There are technical incompatibilities (bandwidth speed) among different countries or regions; so no matter how much preparation is pre-arranged, unexpected things do happen on the day, whether it is the participants having trouble logging in, audio delays, or screen sharing dysfunctions. Especially, if there are connections between more than two centers, controls and checks are not easily facilitated and there is often no reliance on the technology. There are strategies though that have been addressed and protocols established that seem to deal with technical implications. For example facilitators and learning technologists need to check individual access opportunities and have always an alternative path available but *“people may not be able to use technology, not having the skills to work around the problems they are facing. They may find technology too difficult to use”* (P7).

That is to say that the institutional infrastructures and organization planning have a difficult job to support e-learning synchronous communication in order for educators and students to be able to resolve difficulties.

As it was mentioned (P4, P15, P16), there are expensive and more reliable devices that require low bandwidth but most institutions have neither invested in the specific technology nor trained faculty to work around technical implications.

Another issue that was addressed by respondents is time zone complications and **specific time commitments**. E-learners are often mature students with families or busy professionals and they cannot always schedule meeting at a specific time, especially if they live in a different continent (P11, P13).

As synchronous video communication was described by participants, it seems to work better with **limited audience** (P6) because it requires engagement and active participation. Some informants (P4, P13, and P18) claimed that if students passively watch for more than fifteen minutes, they lose interest which means that somehow the attention span of students not engaged in any form of activity tends to be low.

When tele-presence high tech equipment is used, all the visual cues are clearly depicted, even gestures. When the software does not provide detailed analysis and the image of the participant is blurred or hand movements are not shown, **body language expression is limited**. As one educator (P14) puts it: “You only see a part of the person; you don't pick up on things like broad body language. That can sometimes be a limitation”.

Some educators have supported the view that no matter how effective monitor analysis or software is, eye contact cannot be established either. They have even described it as a false sense of intimacy that cannot replicate face-to-face dialogues. Faculty members often find technology complicated and that leads to a **training need**. Unlearning and life-long training are concepts that are specified with several examples in the data collected.

One thing that I would add is the importance of unlearning, in my path as an e-learning practitioner, it is essential when you are using a new medium to be able to change and go out of your comfort zone and not replicate what you can do and you might do in class. We need to be able again to lead by example to learn and to leave some of the things that we have known behind and we learn new tricks; so as to make sure that we remain young at heart (P15).

Several interviewees highlighted also educators' resistance to change (P2, P15, and P18). "It needs specific skill sets and training. Some educators are against videoconferencing. They are themselves exposed or challenged to master the technology because it is so different teaching in class and teaching with video conferencing" (P2).

From the data collected, it is concluded that educators find SVC extremely **tiring**, especially when they have more people involved (P13). Difficulties made educators revert to lecturing (P5) than finding ways to make students engaged or use asynchronous models. Claiming that they have different priorities or they find technology too difficult or unreliable to work with. Managing technology and online teaching can be an extra cognitive load for the educator. Educators' perception was that the students could face similar cognitive load if they could not manage technology, if

the instructional design is complicated and time consuming or if they could not express themselves clearly in the English language (P9, P17, P18).

The technological implications are believed to hinder educators from using the medium. All agreed that technology could be problematic at times, and only 8 out of 18 have technical support. The early adopters of the synchronous instructional model could be described as innovators in the sense that they have learnt to manage equipment, use specific instructional design and cope with students not always well accustomed to technology. As described by informants, the unreliability and unpredictability of video conferencing or web conferencing calls for more technical support, training for students and staff and investment on equipment that allows for body language display, requires low bandwidth and can be user-friendly. Another way that complications could be resolved is to hire well experienced technologists and keep everything as simple as possible to make the learning environment stable and accessible.

4.4 Synchronous teaching approaches

In this part of the interview, informants were asked to comment on the educational purpose of synchronous teaching approaches.

The first way of knowledge transfer was categorized as **Educator-led/educator centered presentation: Tele-conferencing** (with opportunities for questioning and dialogue). All participants maintained that it is a very effective approach because of the conversational style and resemblance to face-to-face real time instruction. Some educators have adopted a problem based perspective for teaching and learning for which dialogue is a key process to negotiate meaning and resolve issues. The same is true

when educators have to get the meaning across for complex issues like teaching statistics, PhD supervision or exam revision workshops. In the medical field it was depicted as a mode of delivery instruction to teach practical skills like how to help a patient regain consciousness after a cardiac arrest. They considered that for their educational outcomes, students could construct knowledge through conversation. An interviewee stated: “Open University students like the fact that there is more dialogue than me talking all the time. Dialogue is absolutely crucial” (P10).

There are times in the learning cycle where people need to understand some basic information but also parts of the learning process where people apply in practice what they are learning. It’s important to give them the opportunity to ask questions and to learn through conversational approaches (P14).

The focus on the conversations is an issue that the student oriented most of the times and the educator could change her course if need be to accommodate the specific students’ needs.

The instructional design of the online course should also be taken into account to determine how much freedom and independence the student could have and prepare a semi structured agenda (P1, P11). An important denominator was the well-designed preparation of tele-conference to talk about issues of an agenda and organize pre-session and after-session activities to increase learning and student satisfaction (P11, P12, P15, and P17). The SVC was considered to be as equally efficient as face-to-face instruction, as long as educators are skilled enough to manage the difficulties in stopping and in checking who participates or not. Some educators used it on a weekly

basis while others considered it to be too tiring an experience and expect to have it 3 or 4 times per semester.

A new approach that has emerged from data collected is what is called **blended synchronous learning projects** (P7, P14, P15, P18), which aims at extending the traditional classroom. An educator (P14) explained:

It is a project looking on how we can bring remote and face-to-face students together in groups, so you could be in a class, you can have 20 students in a class and also have a lot of people offsite that can be interacting with one another in activities. I think that this is really an interesting future direction for videoconferencing.

The aims are to identify, characterize, and evaluate technology-enhanced ways of bringing together on-campus and geographically dispersed students and engaging them in media-rich synchronous collaborative learning experiences. In another format, two university educators from different locations – one in the USA and the other in China – match their students to promote their learning objectives (for example, intercultural communication). As one respondent indicated (P7), the main strengths of blended synchronous learning projects are that they allow for social interaction and for collaborative and shared educational experiences.

Educator lectures in real time – Webcast (with limited questions and strong teacher presence). It is considered ineffective because lectures can be pod cast. There seems no need for the educator to talk live on his/her computer, if there is not any form of interaction. Others have also pointed that the students tend to avoid watching videos for

more than ten minutes. “This needs to be kept to a minimum. It becomes boring and disengaging very quickly. Subject content can be delivered otherwise: as reading or as recorded lectures” (P4).

If a webcast has been recorded (on campus teaching in real-time), online viewers may not be able to ask questions but they may learn from the question on campus students ask. A cultural dimension was also depicted from some participants of the study maintaining that dialogue is mainly what happens in the western civilizations, where people do not have problems asking questions but it may not work in specific Asian cultural backgrounds (P4, P15, and P17).

Assignment feedback discussed and checked by educator via videoconference is a method often used for supervision of PhD candidates but there have been cases where the educators give personalized feedback on a weekly basis for those who need it. An interviewee stated:

I do that all the time. It is a great way of helping students with what they need to know or how they need to think through their assignments and give them feedback. Many times when you give written feedback particularly for thinking skills, it is very difficult to get your point across. Once you talk, you reveal your own thinking processes and then it is a lot easier. I think that it is something obvious that we should have at the end of each module or syllabus unit (P11).

Most participants considered it to be labour intensive.

I see this as a more mature way of deploying videoconferencing technology. This provides the opportunity for the time with the educator to be devoted to questions, uncertainties, clarifications etc. In other words, it adds greater value to the teacher-student interaction. This approach is, however, highly dependent on the participants doing the pre-work in the first place (P13).

Assignment feedback via SVC is considered to be useful not only in terms of cognitive process but also for **psychological support**. An interviewee (P6) said:

It takes some of the pressure away. When you provide feedback in a written forum sometimes it makes students feel more pain than it needs to. So the personal conversation approaches more what they are used to in traditional teaching and learning environments.

Another educator (P2) put it differently: “Direct interaction is important in order to have students’ attention. If I don’t see you, I can’t also see how much you are learning”.

Overall, assignment feedback was considered to be useful for students facing difficulties, students studying complex issues. Personalized feedback could provide a kind of familiarity that supports isolated learners.

Student collaborative tasks via videoconferencing are useful but they should serve specific learning objectives. For instance, there was the case of a course called intercultural communication where students from different nations were coupled together to study and compare how different cultures behave and interact. As a participant put it:

VC facilitates the collaboration because collaboration in an asynchronous chat room area is very difficult. A lot of things are happening in a real talk, because to talk is much faster than typing and writing. I think the load of information is much higher when you have texts but when you are talking the load of communication and information is a lot lower. That is why, students tend to think through that. VC is particularly important for solving tasks that have ambiguous solution. So, the groups have to talk and they have to negotiate and that cannot happen in an environment that is only text based (P11).

An effective approach was identified when on campus and off campus students collaborate because it seems to minimize the isolation distant learners feel. In contrast, other participants (P4, P15, and P17) claimed that student collaboration tasks may prove to be problematic, because the educator- if not present- cannot confirm how and if the students have worked together to produce an assignment or online discussions can easily lose control and drift to other topics.

Archiving of online meetings seems to be an educative valuable approach but it is rarely used. Most participants have recorded their lectures in the first years of their academic career to improve their teaching skills. It could provide good feedback for evaluation processes and improvements of interactional patterns. Moreover, students may have the opportunity to revise what has been said and done online but respondents have the impression that students tend not to see them again. In contrast, a Greek educator (P15) finds it very practical to alter synchronous online sessions into asynchronous.

Which synchronous teaching approaches 1-5 do you use most often and why?

Most participants reported that they used **tele-conferencing** most often because it allows for dialogue and questions which make mentoring and scaffolding effective. In the same framework, personalized feedback seems to improve learning especially when complex issues are involved and the learners need to find out the educator's thinking process or work around problems. Additionally, it was reported that the cognitive load of a conversation is lower than studying texts.

Which synchronous teaching approaches 1-5 do you use least and why?

What participants considered as least used and effective was web-cast. Webcast is the educator lecturing in real time which can be as a podcast and the educator does not have to speak in front of his computer alienated from social environment and cues. It was considered by all participants as a passive process.

4.5 The Community of Inquiry model

PART A: Teachers' role

To what extent and how does the role of the educators change, when they use synchronous video communication in comparison to asynchronous communication?

Informants have in mind that the online session is for **limited time** due to **student and educator availabilities, time zones or attention span** (a computer user cannot stay for

long in front of a computer screen). Therefore, they have to do their best to accommodate the students' needs and the learning objectives during online sessions. Many preparations have to be done prior to the online meeting and follow up activities need to be included to facilitate students' reflection. In other words, educators have to accomplish a very demanding task (P11, P4, P9, and P2). Additionally, time constraints, potential technological implications and students' active participation make SVC more difficult than face-to-face instruction. On the contrary, a respondent (P18) claimed that it should not be more difficult but technologists should find ways to relieve educators from the burden of failing technologies.

Even if technology improves, some educators maintained that **their presentation style needs to be adapted to the restrictions and potentials of the new medium**: slow down their speech to allow for time lagging, use more inclusive language to acknowledge the participation of the students in the session, perhaps inject more interactivity into the session to ensure the ongoing attention of the students from afar, be aware of group dynamics and intercultural communication. In the case of collaborative learning, the educator also needs to manage the dominant participants to ensure they do not drown out the introverts. In other words, social sensing, emotional contact and instructional design need to be organized in such a way that it would be a rewarding experience for all people involved. As faculty (P4, P13, and P17) described it, SVC can be an exhausting task because of the unreliability of the media and demanding roles.

The **show is live** and it is exactly like a TV or radio broadcasting, as an interviewee (P15) phrased it. The specific skills mentioned are: **spontaneity**- be quick to respond to the questions and potential conflicts or technological obstacles-, '**intrapersonal skills**'

– manage to retain students’ attention online-, **alertness, flexibility and adaptability**- to facilitate learning. “There is no template for synchronous e-learning”, another interviewee mentioned (P7). The time and effort dedicated to support students is justified because nothing is self-evident and through online synchronous communication the educators could change their course if they find out something is not working as it should be or it is not working as it used to work for other student groups. Most of the informants found it more difficult than asynchronous approaches or face-to-face instruction because educators have less time to respond than in the asynchronous models. They maintained that educators need to have real time experiences as students first to be able to lead their students more effectively online. It takes a lot of practice and also testing to enhance quality of instructional design (P1, P3, P11, P15, and P17).

Unlearning (P2, P5, and P15) is another phase an e-learning professor has to go through. Participants described unlearning as an important phase because synchronous communication is not like lecturing in a classroom and the information presented has to be displayed in a very simple way and discussed thoroughly. It also depends on democratic participation, which means that all students involved, who should be limited in number, need to be able to contribute for almost equal amount of time and be treated individually, even when being part of a group. Unlearning requires a new alertness to visual and social cues depicted, democratic pedagogy and digital literacy which boost the educators’ confidence in using the media whether a learning technologist/facilitator is around to secure technologies or not. On the other side of the argument, a respondent (P18) supported the view that there are good and bad educators (communicators) and those that are willing to take the extra step to be connected with their students are going to do it and be as effective as in class. Hence, when they use technologies and

synchronicity, they had better imitate face-to-face instruction and the moderators could help alongside.

Interviewees claim that the **cognitive load** of synchronous video enhanced communication has to be taken into account by the educators to avoid overwhelming the short term memory of the online students. The **pedagogy** chosen is another factor affecting the role of the online professor. The pedagogy could be either student centered or teacher-centered. Most commented though that a leading role is preferred with online dialogues. An educator (P11) said that:

I am not really presenting as in face-to-face lectures, unless there is a need for it. For example, we are discussing something and it appears that students are having difficulty with the main concepts, so I am having a lecture for five minutes and then we go back to our discussion. As I said, the majority of our real time students have a problem that they have to solve, that they have to work in groups or in teams and work on the problems so my role becomes more of the coach on their sides. So I go to the teams, if they need me I intervene, if they don't need me, I'm right there to see how their discussions are progressing.

How could educators inspire, motivate and support students with synchronous video communication?

Based on the interviews immediate **expert feedback and emotional contagion** could potentially support students, if SVC is used effectively. As a respondent phrased (P9) it:

Educators would be modeling the thinking of the discipline or of the topic that's under the process of teaching. I think that leads to inspiration, the modeling leads to motivation and helps students to learn from an expert. Some of these students might have disciplinary differences but I think that educators who are comfortable with technology can teach what they can do in a classroom. They could make clearer what kinds of behaviours, whether intellectual or professional, are leading to the learning outcomes of the course. They could do that assuming, as I said previously, that they are trained to use technology effectively. If they are indeed afraid of technology as many educators are or uncomfortable with it, then they could end up de-motivating and making things more difficult for students. I do think that effective use is absolutely necessary in order to make a positive impact on students and their learning.

Moreover, educator's **enthusiasm, encouragement** can also motivate students because it may be more difficult to replicate enthusiasm and excitement about the content in an asynchronous model. An educator (P1) explained:

I don't know if you have experienced it. No matter how excited you are about the content of the material, you can't communicate that through asynchronous tools because the words are not bringing your tone of the voice, the expressions of your face. So enthusiasm is very difficult and we know that, students get excited, as we get excited about the contents. I think that is a main issue with motivation; so you can get a student excited in a videoconferencing, but it is very, very difficult to get a student excited about the content asynchronously. So I think motivation is much easier with video conferencing because of **visual cues** and immediate feedback.

The educators from the students' reactions online can figure out, if they are puzzled and take a different course of action. The experts' thinking process and emotional contagion described by the informants seem to have an impact on student motivation and learning either positive or negative.

The **power of reward/motivation** is another factor mentioned in the findings. Educators have to make sure that students have a vested interest in listening to everyone else. Students find it very boring, if the content of discussion is not relevant to them. Therefore, it is vital to ensure that in the limited time available during an online conference, they have undertaken associated activities prior to coming on air; so they know the topic and have something to contribute or use the information learnt in their professional field or simply enjoy learning.

It's like having a business meeting. It is important to be there at the same time and at the same place. It's like having a business trip to meet with your team members from all over the world and you had better have very good reasons because it takes a lot of time and a lot of money to do it (P15).

Another professor said:

It is not a coincidence that we see also big companies having their annual meetings and conference in order to instill the message and the strategy. Real meetings make people enthusiastic and make sure that they are on board, know the initiative that they have to undertake and they make sure that they contribute to the maximum from their own position to the successful pursuits of the course of the organization (P3).

In other words the people involved should have some rewards for the time and efforts invested in the synchronous online meeting; be it learning, active participation or just for fun.

Enforcing educator's personal teaching style via video communication is a comment a Greek (P15) instructional designer suggested. "Using things that can also enforce your teaching/ learning style is helpful. For example I like having surprises; I like making people smile and introduce playful elements".

Another educator (P16) said that: "During the session, the educator should be mindful of seeking contribution from all participants" (P16).

Taking technological implications out of the picture is essential.

Preparation is a key factor. All required software should be installed, and all hardware should be tested. A trial run to check that everyone can log in is advisable. The details and materials for the session should be sent out well in advance, and the students should be encouraged to log in early to iron out any little problems on the day (P6).

Another tip is to use a moderator alongside the educator. The role of the moderator is to help the students to log in and manage the proper use of all devices (P4, P5, P16, and P18).

PART B: Learning & Content

How does synchronous video communication affect the learning process?

Based on the informants' perceptions, **audio and visual cues** seem to affect the learning process. "They can also say 'hello' to their educator or ask questions. Direct interaction is important in order to have students' attention. If I don't see you, I can't see how much you are learning" (P2).

The element of vision seems to be very important when **practical skills** are demonstrated. A participant (P5) gave the following example:

If you are teaching something as in nursing and if you are teaching a clinical skill, a practical skill, how you resuscitate a patient who is having a cardiac arrest. You do need to do additional set up or cameras and microphones to prepare for how you are going to transmit the content across.

Language learning and music courses could be examples as well (P9). Somehow visualization of the process seems to influence reflection and comprehension of the practical skills (P17).

The **dialogue** seems to help the comprehension of complex material either conceptual or mathematical, to say the least. As an educator from UK (P13) pointed out:

If a student sends an e-mail with questions, the questions and the answers are to a certain extent prescribed. Thus, it doesn't necessarily lead to anywhere. But if the students have exactly the same question on Skype supervision, then the

educator's answer may trigger another question from the students and I would say, this is a much more dynamic, interactive and creative change and exchange. What is more, it is probably a lot more helpful to the students. It's a bit like doing an interview or something, the difference between giving somebody a questionnaire to answer and actually engaging in a qualitative interview with them. So I think it has somewhere to go.

Scaffolding (P7, P11, and P14) is another step highly estimated by the research participants. With SVC educators claimed that they can coach and mentor and help them, improve their thinking processes, especially for the courses that focus on thinking not necessarily on regurgitation or recitation of the information. A progressive questioning may help students think more and more. In addition, when teachers ask questions and students respond and then if they see that they need to challenge a student more or start more basic questioning during synchronously teaching, the online educators have the opportunity to do that and create an impact on learning. Two respondents (P15, P17) claimed that the **students' cognitive load** is lower and less time consuming when they learn complex issues with dialogue rather than reading texts. Video and audio cues could lead to a richer learning experience as described by the educators because of scaffolding and limited cognitive load. To top it all, it can be challenging to manage the conversation with the visual element missing (P16).

P14 indicated that the different stages of the learning cycle have to be taken into account when designing a learning experience. When students are just at the beginning, just developing an elementary understanding, then the sort of way that educators present factors, procedures or conceptual knowledge would be different and also the amount of collaboration too. Under certain phases of the learning circle, pedagogy may have to

change from teacher - centered to student - centered, in order for students to have more representation of space within the environment. Moreover, it was mentioned that case studies, problem solving and tasks that require critical thinking are more successfully used via SVC because they drive students' attention.

Another educator uses VC for revision and reflection purposes:

What we have done here (UK university) are exam revision workshops, highlighting the things they should focus on preparing for the exam, reflecting on what they have learnt. The educator is leading the presentation but there is questioning and much two way correspondence through audio or chat alongside the presentation. It gives the students the opportunity to ask those questions, and discuss ways around the problem they may face with exam technique (P7).

Other participants (P1, P17, and P18) maintained that the learning process does not fundamentally change because of the medium. Whether the learning process is in classroom or online, the teaching approach adopted by **the educator is the primary driver of the learning process.**

P7 and P11 use SVC for **revision** of specific units or modules and reflect on what they have done to prepare students for exams. Participants concluded that the educators' choice on the pedagogy, knowledge construction process either conceptual or practical, dialogue and audio-visual cues have an impact on the learning process. Reflection and revision is another use reported. Therefore, if SVC is used effectively, it may enrich cognitive presence.

How does synchronous video communication affect the presentation of subject content?

Most respondents (P1, P2, P4, P5, P8, P9, P13, and P15) explained that they do not use the medium for content presentation but for negotiating meaning and initiating dialogue or interactive tasks.

Because of the **visual cues** that change, facial expressions, voice intonation at least to some extent seeing students' reactions, tele-presence with really high-resolution cameras and big plasma TV make the presentation of subject content very real. One educator from the USA (P11) illustrated that: "You can see the beauty in their face, you can see if they are puzzled, they can see you, they can see your expressions, they can see your gestures that obviously all this feedback affects the content presentation".

Another informant from South Africa (P5) explained that the content presentation using power-point slides has to be very carefully designed, depicting meaningful and **synchronized limited chunks of information and students' faces at the same time**. She also highlighted the fact that it is important not to lose connectivity with the students' face while presenting some content (P5). She has come up with a solution, splitting the screen into half in order for the educator to be able to see her slides and the students' faces at the same time. What is important for cognitive presence is to present the content in a form that students do not get overwhelmed by the difficulty. In particular, the information presented on power point slides and the clear visibility is reported to be cognitively significant. Two potential obstacles could be: i) a lag between

what the educator does and what the student sees can disrupt the flow of learning, and ii) the size of the content can be shrunk, which might make it difficult to read (P5, P16).

Presentations of content have to be well designed to let the flow of information be easily digestible by students. **Students' and educators' presences** (active or mindful engagement) seem to affect the content presentation by providing more social cues and emotional responses. Intercultural elements need to be taken into account in the presentation of content.

PART C: Learning community

How does synchronous video communication affect a sense of togetherness (*intimacy and immediacy*)?

Almost all interviewees acknowledged **the difficulty of creating social presence without seeing the person**. As an e-developer (P7) pointed out:

By having SVC you have people together and you get this feeling of togetherness. It is one way of bringing people together and making them feel part of the group because they can see there is another person at the other end of the line. From the student point of view you realize that you are not alone, an isolated learner. There are others in the same situation as you and it becomes a shared journey and a shared problem.

They seem to believe that **visual and audio cues** or absence of them could affect the intimacy and immediacy. In cases where one participant had audio conference and the other user could not use the video, it was a more satisfactory experience for the one

seeing the other person than the one who could only hear (P13). Synchronous video communication is a useful proxy for face-to-face communication. They maintained that it builds social trust and it is the next best thing: Visual presence adds to intimacy, especially in small groups (P5). There is a sense of intimacy, which is why in some cultures it is less desirable. For distant learners, it is essential to have some kind of face-to-face contact and this is the best medium we have for it (P4). In contrast, audio conferencing (where the participants cannot see each other) or asynchronous communication (which is not real-time) can promote a sense of isolation or abandonment. The sensitivity of reading audiovisual signals potentially leads to social cohesion and emotional contact for some students and educators (P1, P18) which seem to work best for small groups (P6).

Some participants accepted that SVC affects immediacy but characterized intimacy as false. The term **false intimacy** (P6, P13, and P17) was used because: “communication does not flow as it would, if there were three people in the same room drinking coffee and converse” (P13). It seems somehow artificial and very tiring, sitting in front of a computer talking for long. Another interviewee (P13) underlined the fact that false eye contact could not give the real sense of it, via video. Another comment highlighted the fact that face-to-face communication is not always desired by different cultures and it may be a source of discomfort (P17): “It creates a false sense of togetherness; often students are very hesitant in communicating anything more than the absolute basic during synchronous video communications”.

The respondents deem that SVC could enhance social presence for distant learners, but it has to be carefully used because it does not flow as real life interaction and it may

cause emotional discomfort for specific students that are not used to asking questions of their educators or having face-to-face communication with diverse populations.

4.6 Contextual factors and pedagogies

What contextual factors could influence student participation during online meetings?

Contextual factors could be summarized into three categories, based on factors affecting both students and educators and factors related to students and educators separately. In the first category, all participants may be influenced by **technological implications (connectivity), synchronous tool choices, time zone differences** (very early or very late), **institutional support, type of knowledge** (conceptual, practical etc.) and **contextual aesthetics**. Contextual aesthetics as a topic was brought up by three participants (P13, P15, P3) as the way educators and students appear on screen (the way they dressed, their tone of voice, their appearance and movements, etiquette) and the distortion effects that can affect learning, impressions and perception.

On the one hand, **educators' academic expectations, teaching style, pedagogy, professional salience and confidence with technology** are recognized as important determinants of learning process. On the other, **students' self-motivation, attention span in front of the monitor, level of task difficulty, language fluency, cultural background and personality traits** are enlisted as factors affecting the community that communicates synchronously.

Are you aware of any pedagogic model or learning theory, supporting video mediated synchronicity in a networked learning environment?

All research informants claimed that they did not know any pedagogic model especially designed for online video enhanced meetings. One of the participants claimed that online sessions need to be treated naturally as everyday face-to-face interactions; while others proposed pedagogic models that are considered useful when designing synchronous video enabled activities. The pedagogic models proposed are: **Problem-based Constructivism, Conversational model, Socratic dialogues, role –playing simulation, Salmon 5 stages of e-moderation and Gagne’s 9 elements of instruction**, and the theory of **Community of Inquiry**. **The sensory stimulation theory of learning and situated learning** were mentioned as a framework to design learning activities. Some participants also maintained that SVC challenges traditional pedagogy and needs to be fully considered in advance. Educators explicitly explained that discourse based learning and collaboration are appropriate instructional designs for videoconferencing. Another approach is taking into account the phase of learner whether he is graduate or undergraduate, freshman or senior in the process along with the type of knowledge. In plain words, pedagogy and technology should be designed together to promote specific learning objectives (P11, P14). Two participants (P14, P18) have created their own models as early adopters of the medium.

4.7 Summary of chapter 4

Summing up, eighteen educators from different countries and teaching various disciplines have responded to the research questions. They were chosen, based on their experiences in terms of years, teaching distant learning courses (on average 8.2 years)

and using SVC (on average 5.6 years) to serve students' needs and learning objectives. Research informants have considered SVC as a useful approach to connect educators and students, students to students and a learning community to learning resources as networked learning definition emphasizes (Chapter 1.1). Moreover, SVC could help educators adopt more flexible life-style and connect with their students by providing personalized communication, as they are used to with on campus students. Technical implications though, make some respondents consider that the world of education is not ready to adopt synchronous video mediated tools. The lack of institutional support, training, digital literacy, and the cognitive load added to educators, make them more resistant to experiment with synchronous tools. Five teaching approaches are used to facilitate educational purposes for different student groups, tele-conferencing, webcast, assignment feedback, student collaborative tasks and archiving online meeting. Tele-conferencing is more widely deployed because of the immediate contact and dialogue, while webcast is considered a passive form of learning but it may be useful for specific student populations. The role of the educators may change or adapt to the synchronous context. Whether SVC is perceived as a replica of face-to-face communication or a completely different context, educators could enhance their teaching presence with pedagogy, motivation, and modeling the experts' thinking process. In terms of cognition, practical skills, mentoring, explaining complex issues and discussing cases studies or problem-based tasks were reported as effective use of SVC media. The educators as a leader or a 'guide on the side' could scaffold, revise and reflect on the learning process. Neither the psychological support the participant gains, nor the social trust could be ignored. The content presentation is to be delivered in smaller chunks of information without losing connectivity with the students. When complex issues are discussed, SVC has the potential to relieve student's cognitive load. SVC seems to

enhance immediacy and intimacy but some informants labelled intimacy as false. Contextual factors play a critical role and pedagogies adopted are based on a face-to-face instruction or asynchronous modes of delivery.

Chapter 5: Axial Coding & Community of Inquiry Model

The purpose of Chapter five is to discuss interpretations which stem from axial coding under the light of Informed Grounded Theory. What I have done is to elaborate the CoI categories in order to use them as axial codes, while holistically reviewing all the documents. At this stage, I needed to interpret data and reconstruct them by linking findings to current research and updated literature. Recent studies may be in accordance or in conflict with the way the data is presented but both sides deserve equal treatment and enhance my theoretical sensitivity. Discussing the categories of data, I must have confidence in my theoretical sensitivity but be aware of the ontologically relativist and epistemologically subjectivist nature of the study which aims at exploring all possible forms and possibilities of SVC. Theoretical sensitivity includes “the researchers’ level of insight into the research area, how well-informed they are of the nuances and complexity of the participant’s words and actions, their ability to reconstruct meaning from the data generated with the participant, and a capacity to “separate the pertinent from that which isn’t” (Strauss & Corbin, 1990, p.44).

The data interpretations are analyzed with Informed Grounded Theory based on concepts of the GT methodology such as theoretical sensitivity and axial coding but also on Charmaz’s constructivist approaches (Charmaz, 2000; Mills et al., 2006) that consider the researcher as artist and writer of the research outcomes. “Data do not provide a window on reality. Rather, the ‘discovered’ reality arises from the interactive process and its temporal, cultural, and structural contexts” (Charmaz, 2000, p. 524). The study, therefore, arises from the time frame of the research

interviews, the organizational culture of distance education and the structural context of synchronous video mediated scenarios, as seen by the interviewer and respondents under the light of literature.

5.1 Axial coding & tele-teacher presence

Axial coding is the process of connecting categories to subcategories and finding relationships between them. Strauss and Corbin (1990, p. 96.) defined axial coding as a “set of procedures whereby data is put back together in new ways after open coding by making connections between categories”. The model according to which the questions were designed and data was collected is the Community of Inquiry Model (Garrison et al., 2000). **Teacher presence** is the design, facilitation, and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes (Rourke et al., 2001). I have named it **Tele-teacher presence**. Being tele-present, educators could add to the authenticity and credibility of the university by coming in real-time contact with students. Many informants have indicated that the presence via synchronous video-enhanced conferencing seems to create new roles which have the potential to lead to a new identity online while other claimed that good communicators have already developed these skills in class.

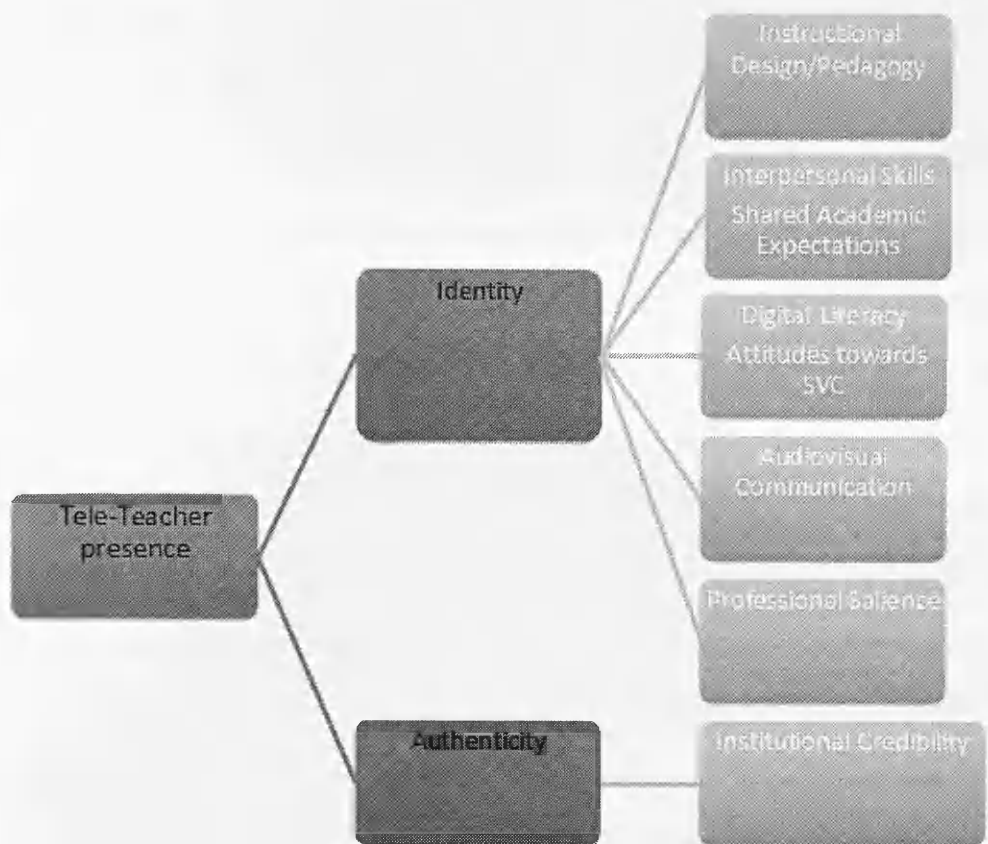


Figure 5.1: Tele-Teacher presence

Figure 5.1 divides the role of the educator into the process of identity formation and authenticity (institutional credibility). The identity formation is built on professional salience, audiovisual dialogue, digital literacy and attitudes toward technologies, interpersonal skills and pedagogies.

5.1.1 Institutional authenticity & teaching persona on screen

The first concept that unexpectedly emerged from the interviews was the **authenticity** of e-learning courses (**Figure 5.1 Tele-Teacher presence**). As

respondents (P2, P4) put it, people earn degrees without going on campus and educators could instill knowledge and skills without knowing their students. There have been reported cases of dishonest attitudes of users, as well as agencies that provide “tailor-made” degrees dissertations, delivering ready-made courses without evaluation processes. If the educator uses quality time to contact with students, confirming that students are the ones registered for the course, the institutional credibility could be promoted. One educator from the UK (P4) considers SVC as a means to confirm identity and it is a mandatory policy in the university he works for.

The students are going to be obliged to use VC, because it is an identity thing. We have had a couple of occasions recently where I have started to think that a student -a distant student- is not doing work, we only had one case last year where we (the institution) were becoming increasingly unsure whether the student was who he said he was and if he was actually doing work. When students don't have a web camera, I'm wondering whether they are even listening to the conversations sometimes, so we are going to compel everybody to use VC (P4).

Based on the data collected, I have seen that knowing who is teaching who seems to be an important factor for both sides, (students and educators). For the part of the institution/educators finding out more information about learners, expectations, learning styles, by synchronously talking with them and confirming identity and from the students' point of view confirming that the educator is actually there to support them in person seems to be so crucial that some universities have made synchronous communication mandatory. SVC is a way to potentially safeguard that the degrees are given to those who earn them in order to minimize the cases of identity fraud. Each

educational institution, though, applies different accreditation and evaluation methods that are beyond the scope of this research.

Interviewees underlined the importance of **identity/new roles** online as well (**Figure 5.1 Tele-teacher presence**). The identities that educators could create online seem to be affected by **the instructional design/pedagogy** adopted (P1, P11), the educators' **digital literacy** (P2, P3), **interpersonal skills** (P1, P2, P14, P15, P16), **the academic expectations/experiences** shared (P12, P14), quality of **audiovisual communication** (P1, P2, P5, P10, P12), **dialogue orchestration** (P8, P9, P18) and **professional salience** (P7, P11).

In the same line of thinking the Community of Inquiry (Garrison et al., 2000) provides similar categories and indicators for teacher presence, that incorporate instructional design and interpersonal skills: instructional management as initiating dialogue topics, building understanding as sharing personal meaning and direct instruction as focusing discussion (Table1.1), but it does not take into account the complexities of **audiovisual presence/communication**, nor the **professional salience** the educator needs to feel in order to perform effectively on screen.

5.1.2 Instructional design and pedagogy

Instructional design in SVC is defined as the process by which instruction is improved through the analysis of learning needs and systematic development of learning materials, tools and peoples' roles. While pedagogy as the Greek origin of the term dictates is the educator's leading with the purpose to model thinking,

emotions and behaviours. The educator's identity is portrayed by the instructional design and the pedagogy adopted on screen.

You (the educator) need to have different skills to play on stage, so you need to be quick, you need to be entertaining, you need to be able to understand what's going on and read between the lines and have strategies for providing feedback.

You have to avoid isolation; so it is definitely more difficult in any case (P15).

One educator from Australia put emphasis on establishing protocols, making appropriate decision on what synchronous facilities to use and managing groups online:

The SVC approach is more demanding for the professor. They have to respond instantaneously to the questions of the students. They may have a plan in their heads but the students' questions may show that this plan may not be effective and the educator can change direction. I can change direction easily, it is more flexible. In asynchronous platforms, you spend more time thinking about the nature of activities and you can't change activities that easily because students would be at different stages and it would be a bit late to change. I think that synchronous communication is challenging and it needs much more complicated skills and design (P1).

The pedagogy reflects the educator's role online:

The role changes greatly because now you have your audience right in front of you. The asynchronous depends on what kind of pedagogy you are following as an educator; in an asynchronous environment you could also be a different

educator with different pedagogy. For example, you could direct the discussion in an asynchronous environment and that's one pedagogy. You could remove yourself and become a person, you know, who really becomes a participant rather than the facilitator of the discussion, so it depends on pedagogy. You have different strengths in an asynchronous environment. The same thing happens in a synchronous environment based on your pedagogy, your role as an educator changes. As I said, my role in our synchronous learning environment or in a real time meeting is mainly leading the discussion (P11).

Implementing their **teaching style and design effectively**, educators could accommodate students' needs in the limited time provided during online sessions and create a successful, motivated and motivating teaching persona. An informant teaching in Spain and Greece (P15), answering the question how an educator can motivate and inspire online students, said:

With arts, spontaneity and science!!! The show is live, so you are not allowed to have silent pauses, so if something goes wrong, you need to fill in the gaps. In other words, inspiration and motivation comes all from your own experience as well as meaning. So you have to be motivated, you have to be enthusiastic.

In the same vein, McConnell (2006) suggests that teachers and trainers need to develop skills in three important components for online learning: *initiating activity*, providing initial scaffolding and inviting discussion amongst participants; *fostering group self-management*, engendering a supportive environment, encouraging reflection and mutual support; *maintaining activity*, finding patterns, and intervening where necessary to provoke critical thinking. Similarly, Pentland (2008) analyses the

importance of audiovisual cues and describes the effective network manager as the 'charismatic connector'. The person, who circulates into groups, practices extensive listening, has fluid speaking styles and drives conversation with extensive questioning.

Resembles real-time tutoring, however, it easily gets out of control; effort concentrates on organizing the e-meeting and the discussion among many persons i.e. talk in turns, not interrupting one another, not expanding discussion to topics that are not of interest for the specific discussion. Students also become more easily distracted and the educator cannot easily intervene or control the situation (P17).

Bower (2011) researched web conferencing, pointing out four competences for educators: operational, interactional, managerial, and design competence. Bower states that, "More teacher-centered pedagogies require the teacher to exercise up to low-level management competencies and students to apply operational competencies. More student-centered pedagogies require the teacher to exercise higher-level management and design capabilities, and students to utilize some management competencies." (Bower, 2011, p. 80). Hence, online educators need to find an instructional design and pedagogy that serve learning objectives and online audience.

5.1.3 Interpersonal skills & shared academic expectations and experiences

As described in Chapter 4 (pp.104-105) effective communication and personal contact seem to have an impact on all presences. Hsieh (2010, p.34) studied the international perspectives of online educators and found that teaching personas are

based on self-expectations, interactivity/dialogue and evaluation criteria. Interestingly, they are the same as the factors related to Baxter's research (2011; 2012) on students' identity building. Interpersonal skills enhance interactivity especially in the diverse audience of online courses. Wang and his colleagues (2009) claim that eastern students have not developed habits for interaction in the online environment compared with western students. Therefore, specific students need more help from educators to develop the habit of **interactivity or dialogue** and share their expectations and experiences. Hsieh (2010) interviewed online educators who were very committed to facilitate students and use every technology available including SVC. He has found out that some of them expected to create/design their own teaching materials or tools not available by the institutions to enhance students' motivations and interests for learning as SVC respondents do.

Instructional design/pedagogy and **academic expectations** define the role of the professor online (Hsieh, 2010) and shape students' identity (Baxter, 2011). Having realistic academic objectives and clarifying their role as a guide on the side or as a leading figure, educators could portray their tele-teaching presence. Sharing experiences and expectations in web-conferencing environments correlates with student satisfaction with online classes (Gurell, Kuo & Walker, 2010). Parchoma (2005, p.471) underlines the significance of clear and productive communication to promote common goals in virtual organization and networked communities. She explains that "maintaining shared perceptions through dialogue foster improvement of social capital". On the educators' side, Baxter research informants (2011) and SVC informants expressed the same satisfaction when interacting with students.

The same elements as in face-to-face communication are apparent: to build a warm relationship with the teacher and the student to trust and have confidence in their teacher. Some people have good communication skills and these skills are even more important in videoconferencing because of the distance among participants in the online session. The interpersonal skills are very important to see how the students feel; if they are bored. Generally speaking, the educators need to read communication signals and respond accordingly. When the educator has interpersonal skills, motivation is not a problem because the students realize that the educator is interested in their learning, has time to talk to them, has time to listen to them, and they will respond in the same way. As in face-to-face instruction, if a student is not participating, the educator could encourage him/her to join the discussion. If a student is behind schedule, he can talk to him/ her to resolve difficulties and support him/her (P1).

Research informants' views concur with Lloyd and his colleagues' studies (2012) that interpersonal barriers are increasing transactional distance in online education.

5.1.4 Digital literacy & attitudes towards synchronous video communication technologies

A teaching persona could be affected by technological obstacles, **digital literacy** and confidence in using the tools (P2, P3, P6, P11, P13, and P17). As a respondent puts it:

Technology is the first one, if it's working appropriately; the bandwidth and the internet connections are strong and stable. The technological stability of the online technology is absolutely critical, how could it influence? It could be

distracting, it could be frustrating, it could de-motivate and it could end up in students disengaging altogether (P6).

Others said: “Some educators are against videoconferencing because they are themselves exposed or challenged to master the technology because teaching in class is so different from teaching with video conferencing” (P2).

Assuming as I said previously that they (educators) are trained to use the technology effectively, if they are indeed afraid of the technology as many educators are or uncomfortable with it, then they could end up de-motivating and making things more difficult for students. So I do think that effective use is absolutely necessary in order to make a positive impact on students and their learning (P11).

Drawing similar examples from literature review in Chapter 2, Bower wrote: “Firstly, there are several tools to master; secondly, different tools need to be selected depending on communication requirements; thirdly, the affordances of tools in combination require consideration; and fourthly, decisions about how to use tools often need to be made in real time” (Bower, 2011, p.63). Managing synchronous video mediated environments contains inherent difficulties above and beyond those experienced in face-to-face contexts because of the technology and mastering the technology. As a result, educators need to improve either their digital literacy or demand for significant technical support from the institutions they work for.

Previous research has demonstrated that for unacquainted dyads and groups interacting over video, feedback delay can interfere with the

impression-formation process and increase cognitive load, in turn leading to incorrect interpersonal judgments. Results supported and expanded the relation-alignment perspective, which states that individuals will consciously attempt to manage their impressions over technological channels, but that they can also be unconsciously influenced by technological distortion. (Powers et al., 2011, p. 1651)

Xiaoxia “Silvie” Huang and E-Ling Hsiao (2012) draw on several studies (Kluever, Lam & Hoffman, 1994; Koohang, 1989; Violato, Mariniz & Hunter, 1989; Yuen & Ma, 2008) and note that **educators’ attitudes and acceptance of technology** to a large degree determine how successful the use of technology is in teaching and learning. A lack of training and limited institutional support has been reported by informants and has also been identified as barriers to teaching via distance (Maguire, 2005; Haber & Mills, 2008). What was also reported by participants was educators’ resistance to use technology (P2, P5, P11, and P18) which is also found to agree with other studies (Anderson & Dron, 2010; Power & Gould-Morven, 2011). Technological implications and digital literacy of the educators may influence the quality of teaching and student perceptions about teachers’ identity and performance in many unconscious and conscious ways as shown by the informants and literature review.

5.1.5 Audiovisual communication

Synchronous video enhanced dialogue seems to affect the identity of educators and learners because it could facilitate **involvement/discussion** in online environment. Educators maintained that the value of SVC is dialogue and audiovisual cues: “I think

the value of synchronous video- communication is not in the delivery of content but in the discussion of that content and of its implications” (P6).

Bower (2011) draws on the work of other researchers (Britain, 2007; Laurillard, 2002; Jonassen et al., 2005) and maintains that discursive interaction adjusts the direction of the online session while providing the opportunity for students and teachers to engage in knowledge construction processes. Audio visual communication could give the opportunity for more **timely and clear exchange of messages** than asynchronous communication.

Visual aspect is important to build a relationship for a few reasons. Firstly, it helps you to see and get to know your students, share some documents, teacher’s work and students’ work, whiteboard facilities and collaboration is valuable learning as well. Moreover, it helps clearer communication and stronger relationships to be built between students from one location and students from another location and between students and teachers (P1).

In another informant’s words: “Synchronous communication could alleviate the difficulties that distance provokes and forums cannot resolve” (P11).

Baxter has found out:

Online forums are essential tools to university-led online interaction. In many modules they increasingly play a key part in online assessment strategies, requiring students to engage with one another in order to complete shared tasks. But forums emerged within her

research as being one of the main reasons that students felt that their progress had been impeded. They also appeared to contribute to loss of confidence. Some respondents avoided them altogether or used them less than they could have, admitting to feeling intimidated and confused by postings and struggling with the practical issues of their use. Some were unprepared by removal of what moderators termed 'inappropriate postings'. (Baxter, 2012b, p.121)

The same remarks were made by SVC interviewees (P1, P2, P7, P11, P13, and P17). The time gap created when a question is asked before it is answered, the prescribed form of both were also noted by educators in my investigation as problematic. Sometimes, educators feel isolated and devalued because they cannot respond effectively and in time in forums or e-mails. Therefore, more flexible and immediate approaches could be integrated into the instructional design to alleviate the communication gap that sometimes asynchronous interactions enhance and help educators establish active and motivated online identities by supporting students' needs in real time as core, on campus educators do.

Voice and vision, according to the data collected, give a **touch of liveliness** to the construction of the online teaching persona. Audiovisual cues influence perception and emotional contagion. " I always comb my hair and pay attention on how I look" (P13).

Walther's social information processing theory (Walther, 1992) assumes that educators could adapt their self-presentation in mediated environments. However, users may not always be consciously aware of technological distortions. In the case of

video communication, the amount of delay may or may not be noticeable at a “conscious level” (Powers et al., 2011, p.1652). Unconsciously though, technological implications or lack of digital skills could influence negative perception about the teaching identity (Power et al., 2011). Audio visual cues affect emotional contagion (Pentland, 2008, Christakis & Fowler, 2009). “We tend to synchronize our facial expressions, vocalizations, and postures unconsciously and rapidly and as a result we also meld our emotional states” (Christakis & Fowler, 2009, p.37). Audiovisual information creates the contextual aesthetics of SVC, which can affect the educator’s online profile.

Educators engaged with SVC, have the opportunity to develop the ability of **prosopognosia**; a term used for the ability all humans have to read audiovisual cues and respond accordingly. As informants put it: “Seeing their faces you know if they are puzzled or worried” (P2).

No matter how excited you are about the content of the material you can't communicate that through asynchronous tools because the words are not bringing the tone of your voice, the expressions of your face (P11).

Christakis and Fowler (2009) and Pentland (2008, 2010) based their assumptions on the so-called mirror neurons system, an area of the brain that imitates facial expressions of others and feels like others (empathy). The area of emotions and online video-mediated learning emphasize strategies for minimizing students' negative emotions of loneliness, isolation, and anxiety and finding ways to promote connectedness (Reupert, Maybery, Patrick & Chittleborough, 2009; Zembylas, Theodorou & Pavlakis, 2008). Woodcock and Reupert (2012) note that students want

educators who are engaging, approachable, and passionate about their subject matter as a way to keep students engaged and connected. Like students, educators often feel pressured and alienated while teaching in an online environment with concerns regarding the workload, quality of instruction, interpersonal skills, and connectivity (Wickersham & McElhany, 2010). Little research explores emotional contagion and the strategies that may help educators feel more satisfied when teaching online (Zembylas, Theodorou & Pavlakis, 2008).

An informant from Greece recommended that online educators while teaching online have to find ways to discover their educating style and their teaching persona (P15). Baxter (2012; Day, 2004) maintains that in a fully online environment, educators could effectively replace face-to-face teaching attributes such as body language, paralinguistic cues and other communicative attributes that are considered to be second nature by most teachers working in a face-to-face environment. In other words, online educators could master the influence of the potential SVC and use audio visual communication effectively to build a teaching persona that connects with distant learners through dialogue and flexible instructional design.

One participant (P18) though, supported the view that if a professor is effective in class, she could be equally effective in SVC content. No new roles are required: “Keep it simple, leverage existing skills”.

5.1.6 Professional salience

In the same wavelength, some SVC informants are enthusiastic early adopters (P5, P6, P11, P15, and P18), sometimes with limited institutional technical

support, who use their creativity to face the music, so as to come a step closer to their students and build an identity that makes their work more effective and rewarding through dialogue. In a respondent's words: "It also affects the students, the enthusiasm the lecturer has, how positive they are, you know" (P5). "Anxious, nervous and a bit uncertain about the result, some try to avoid using it, others simply believe that it has no pedagogical value and don't use it"(P3).

It can also be really quite rewarding especially if you are reaching out to someone and teaching in a way that they couldn't otherwise experience. For instance, if someone is a full time mother, she can learn from home, using this approach, it can be very rewarding (P14).

In Baxter's (2012b) research quotes, students have expressed the need for more personal communication with online community members:

In most cases the increased engagement with others proved a pleasant surprise, but some students revealed their inhibitions when communicating in this way: I was prepared for online work but I find it difficult to have a conversation with people online, especially when you can't see their faces (Baxter, 2012b, p.115).

Another research quote from her study from the educators' perceptions: "If you haven't met these students and know a bit about them, marking, it just becomes automatic task-ploughing through masses of anonymous scripts, when you know the students, then their work speaks to you in a meaningful way" (Baxter, 2012a, para.24). Some studies (Hrastinski, 2008; Baxter 2012; Huang & Hsiao, 2012) and

SVC respondents have shown the same need for a “human touch” and personally meaningful learning (Parchoma, 2005). Despite the fact that informants can exchange e-mails and telephone calls with their students, this seems to infer that seeing the person somehow makes interactions more qualitatively significant. Baxter’s (2011, 2012), Huang & Hsiao’s (2012) findings and SVC research participants supported the importance of having a person at the end of the line to help them create a new online identity as part of a learning community.

What informants implied is that both educators and e-learners need somehow to reach “**the point of metanoia**” (Alsup, 2006). The point at which the new identity is integrated with existing identities has been called ‘the point of metanoia’. What is my role in the online environment? Is it the same as in face-to-face instruction? What are my expectations as an educator or what are the expectations of distant students? With whom and how could I collaborate more harmoniously? How much structure/orchestration or freedom is needed in a synchronous video enhanced session? The list can be enriched with never-ending questions. From a worldwide view, universities implement e-learning programs as an integral part of their offerings; the educators have to learn to use social networking tools, online platforms and wider internet to enhance student experiences (Ferguson & Tryjankowski, 2009). Garonce and Santos (2010) who defined a range of roles adopted in a web-conferencing environment, including educational, social, managerial, and technical ones. Many studies (Baxter 2012; Hanson, 2009; SWRB, 2011) claim that working fully online, the lecturers have to create a new identity and enhance their “sense of self salience or feeling of efficiency, self-confidence and motivation”. Likewise, most of the educators interviewed pointed out that they need **self-efficacy, confidence**

with technology and pedagogy to be motivated to engage more with synchronous media.

The real mission now is how to make sure that you have quality in what you deliver. The number one thing is that you have to enjoy it, you have to like it, and you have to be willing to be there because all of these are evident. If you are there committed, happy, you can lead by example and teach by example. So firstly you teach by example, secondly you use things that can also enforce your teaching/ learning style (P15).

Helping students and educators communicate synchronously through video, they have the opportunity to specify roles, expectations about teaching and learning. Identities could be built with more humane elements based on audiovisual cues and prosopognosia or leverage on existing skills. Being confident in learning and participating synchronously reminds people of how they are used to learning in traditional educational frameworks and facing the obstacles of distance isolation for learners that are interested in audiovisual interaction somehow more easily. Realizing the responsibilities and adapting to the environment of online learning, educators have to work on their teaching persona while students work on theirs. If both parties negotiate with SVC, it is possible to help each other establish a sense of psychological well-being and motivation to reach specific learning outcomes and confidence in using technology. The literature review by Baran and colleagues (2011) highlights the need for further research into online transformational learning and the hidden curriculum of teacher education while drifting from face-to-face to online learning (Baran, Correia & Thompson, 2011; Rennert-Ariev, 2008).

5.2 Axial coding & tele-cognitive presence

Cognitive Presence is the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse (Garrison, Anderson & Archer, 2000). Tele-cognition was defined as embodied because of the audio visual cues that SVC could provide while the participants are interacting, talking and seeing each other. In the framework of SVC, respondents acknowledge the effect of audiovisual cues: “It is the richest learning experience and then it comes up for the teacher and a student of course to make the most of their opportunity” (P4).

As depicted in the following diagram **Figure 5.2**, the questions asked were based on how SVC affects the learning process and the presentation of content. The learning process seems to be effective for problem base/case study approaches to explore, connect and apply new knowledge (P2, P11) by mimicry of the thinking and appearance of experts, the demonstration of practical skills (P10), and active participation through dialogue (P6, P4, P12, P13, and P14). SVC seems to be useful for revision and reflection purposes (P7, P11). As far as the content presentation is concerned, contents need to be displayed in limited time, a smaller chunk of information without losing connectivity with the students, through dialogue and audiovisual cues (P1, P2, P5, P6, P11, P14, P16, and P17). The content of presentation emphasizes the mindful presence (P1, P6, P8 P9, and P15) of participants rather than specific information display that could be delivered asynchronously as well. The cultural background of the student target group needs to be taken into account in the instructional design of synchronous video-mediated meetings.

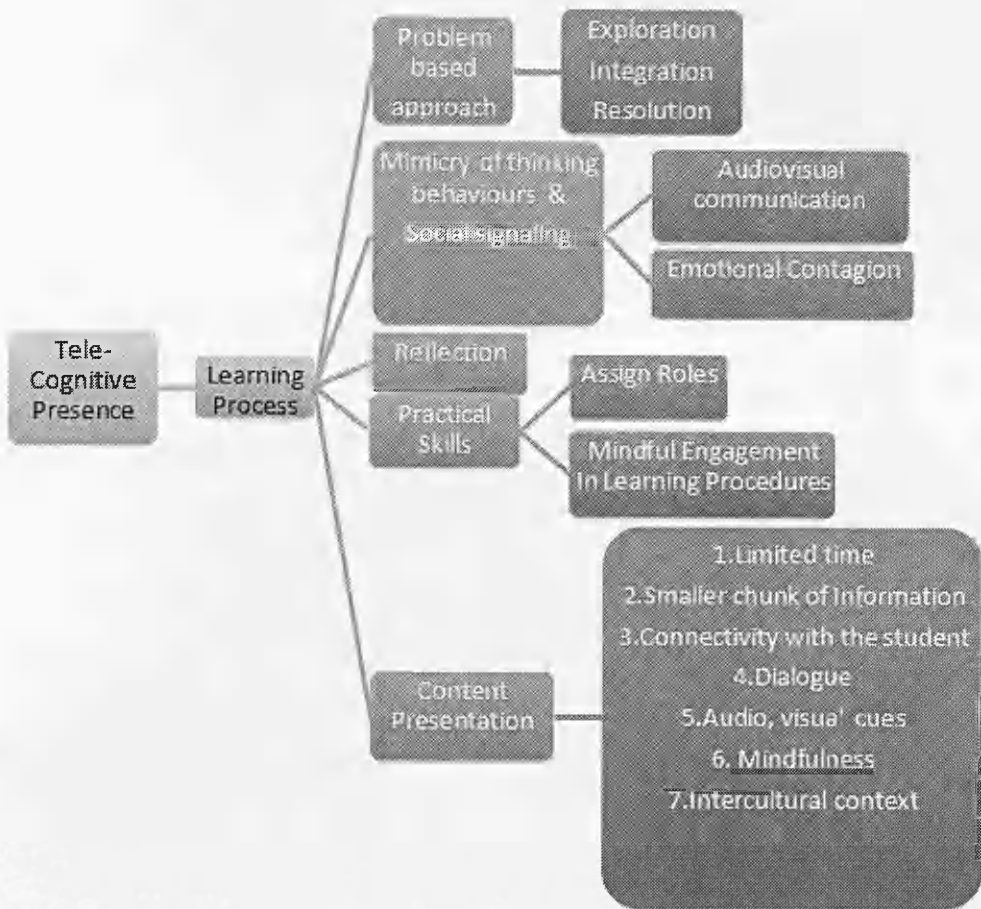


Figure 5.2: Tele-cognitive presence

Figure 5.2 depicts how the learning process is described by the research informants. Educators employ problem based approaches in order for the students to explore, integrate and resolve issues. Mimicry of behaviour, thinking and social signaling is enhanced with audiovisual communication and emotional contagion. Educators schedule synchronous online meetings to summarize and reflect on what have been covered during the course. Assignment of roles and engagement in practical tasks is widely used by educators to enhance practical skills. The content presentation needs to be in smaller chunk of information during the limited time of synchronous video enhanced meetings. Students and educators need to be connected visually; they

discuss, share audiovisual cues, participate actively (mindfully) and are aware of cultural differentiations.

5.2.1 Problem based approach

Some educators use SVC to implement problem based pedagogy, situated learning and case studies during real time sessions. They discuss case studies with their students with the purpose of enhancing their critical thinking and dialogue skills. Problem based learning can be linked closely to the Community of Inquiry model which uses exploration, integration and resolution as indicators of cognitive presence (Garrison et al., 2000). In informant's words (P11):

SVC coaches students and mentors them and helps them improve their thinking processes because we focus on thinking not necessarily on regurgitation or recitation of the information because that's not our purpose most of the time. The information is communicated through recorded lectures, words, notes or articles but videoconferencing is mainly for thinking processes; so without that how could you get a student to think? It's very, very difficult in asynchronous. So if the videoconferencing is used for teaching and scaffolding students, it can progress their thinking. For example, progressive or continuous questioning helps more and more. In an asynchronous environment, it does not have the same effect. If you are all in a real time videoconferencing, you are asking questions and students respond and then if you see that you need to challenge a student more or start more basic questioning, you have the opportunity to do that, so that it creates an impact on learning.

5.2.2 Mimicry of thinking, behaviours & social signaling

Imitating the expert's thinking with **audiovisual communication and emotional contagion** is a part of the learning process that was depicted in the data collected in Chapter 4 (pp.105, 113). In respondents' words (P11): "It can be challenging to manage the conversation with the visual elements missing" (P16).

I think one of the things that can be related to cognitive presence, I guess, is that educators would be modeling the thinking of the discipline or of the topic that's under the process of teaching. I think that leads to inspiration, the modeling leads to motivation and helps students to learn from an expert. Some of these students might have disciplinary differences but I think that educators who are comfortable with the technology, can teach what they can do in a classroom; they could make it clearer to students what kinds of behaviours whether intellectual or professional are leading to the learning outcomes of the course.

The same argument is maintained by Lakoff (2008) who states that senses do not reach only our feelings, emotions and aesthetic sense, but intellect as well. For example, Allmendinger (2010) explains that gestures in particular can provide "cognitive support" aimed at conveying information that is helpful for understanding information presentation and discourse.

Baxter's (2012) findings are in agreement with the informants of SVC study as far as the concept of embodiment is concerned. Baxter highlights the importance of body language as noted on research quotes, claiming that mirroring behaviours and

reactions visually helps educators to cope with the different voices/identities without ‘losing the plot’.

Another aspect of the research outcomes is focusing on the impact audiovisual communication has on learning (P1, P2, P5, P6, P11, P14, P15, P16, and P17).

Don’t forget that fact that you can also convey a richer method as a presenter by having not just your voice and your content, actually maybe that is some element for the previous question but body language, right? Body language in general, your image, appearance, tone of voices, is a factor affecting the learning process and these influences need to be taken into account when talking about learning process (P15).

Dr. Pentland directs the Human Dynamics Laboratory and the Media Lab Entrepreneurship Program, which helps develop international applications for new technologies. His research team has a lot to say about audiovisual cues called ‘**honest signals**’. According to Pentland and the MIT research labs, honest signals are gestures, voice tones and body language that affect communications and trigger responses (Pentland, 2010). This perspective undoubtedly impacts the development of communication technologies such as videoconferencing. Social signaling is presented in more detail in Chapter 6 (section: 6.2.2).

5.2.3 Revision & reflection

Informants P7 and P11 mentioned that they use synchronicity to revise syllabus units and reflect on what they have done. Sometimes they organise workshops to better prepare students for exams.

5.2.4 Practical skills: assigning roles & mindful engagement

SVC seems to work effectively for teaching and learning practical skills, which is not taken into account in the CoI model. Educators interviewed often used it in the medical field, language learning or examination techniques (P5, P7 and P9). Assigning roles and learning procedures are the reported uses.

Russell and Shepherd (2010) underline two fundamental design criteria for online **role-play platforms** in universities to create a space for complex social learning, support explicit reflection and theorizing as part of the role-play activity. The sense of place/space for interaction was emphasized by informants as well and it was called 'stage' by Fayard (2006). One educator (P7) from UK suggested:

Get everyone involved. Make sure they have a vested interest in listening to everyone else. They find it very boring, if others are feeding back to educator and it is not important/relevant for them. Ensure they have undertaken associated activities prior to coming on air so they know the topic and have something to contribute and a role to play.

Giesbers, Rienties, Tempelaar and Gijsselaers (2013) claim that actively engaged students in an early stage could accomplish by assigning role-predefined tasks within the collaboration process, which helps students take center stage, but with a educator present who continuously involve students in the discussion irrespective of the communication tools they use, it is likely to have strengthened actual participation and not just attendance (Strijbos & De Laat, 2010; Loyens, Kirschner & Paas, 2012).

The **cognitive model of media** choice postulates that receivers are more committed to reading and responding to messages when communicating synchronously (Robert & Dennis, 2005). This is exactly what some informants have pointed out (P5, P7, P11 and P14) to orchestrate active participation.

Regarding **procedures and simulations**, the visual element and the live, real time experience was a factor usually reported by the respondents. According to Fjermestad, Hiltz, and Zhang (2005) students who connected abstract science to real-world problems through simulations, microcomputer based laboratories, and video gained better results than students who experienced only traditional instructional methods. The brain practices actions, even when we observe others, as if we were doing them ourselves (Iacoboni, 2009; Iacoboni & Mazziotta, 2007). Pentland explains that watching somebody move, a part of the brain that corresponds to the same movement lights up. Christakis and Fowler (2009), Pentland (2008; 2010) and SVC informants agree about the audiovisual effects on cognition. For example, teaching foreign language skills or medical procedure could be beneficial to have some real life, audiovisual simulations. Carr and collaborators argue that synchronous communication can accelerate information flows within a team (Carr et al., 2004). Hrastinski and his colleagues state, “The content analyses from the studies indicated that the synchronous discussions were characterized by higher relative degrees of task support exchanges, compared to asynchronous discussions” (Hrastinski et al., 2010, p.657).

5.2.5 Content presentation

As far as content presentation is concerned, there are specific limitations that need to be considered. Based on research data, online sessions have to be **limited in time** and

normally could not last as long as face-to-face classes and transmit **smaller chunks of information**. They demand orchestration and are labor intensive for educators (P4, P13 and P17). Pre-session and after-session activities seem to add value to the content presentation, although video-enhanced meetings seem not to be very efficient for lecturing. The research informants rarely use it.

I think that you need to make sure that everyone is involved. You need to be actively thinking and don't have sessions that are too long either. They are quite tiring for the body and I think it should be shorter than normal campus classes, to be honest. (P4).

Likewise, due to the limited time of online meetings, limited time is available for content presentation. Informants (P2, P4, P5, and P11) maintained that **connectivity with the students** needs to be sustained to promote further engagement and to provide social cues for the educator while talking.

Another problem that we have got a strategy to address is that, when we are presenting with video conferencing, we have power point slide presentations, the picture of the students get replaced by the slides so they sit there the most times they can see me and I move on to power point presentation, then they can only see the power point presentation, that leads to some lack of connectivity with the students and when you are teaching, you can't see them but the way we have addressed it, is that we are trying to find new venues, we are trying to have two screens so that the PowerPoint presentation goes on one screen and the students go on another screen. We have bought specific software to split the screen into two (P5).

Body-mindful presence is the content more than power point-slides, as a form of dialogue with social signaling and audiovisual cues. Screen sharing, power point slides, videos are features available but the mindful presence of educators and learners is what makes the difference (P1, P2, and P16).

The educator needs to adapt their presentation style to the new medium – e.g. slow down their speech to allow for time lagging, use more inclusive language to acknowledge the participation of the students in the session, perhaps inject more interactivity into the session to ensure the ongoing attention of the students from afar. In the case of collaborative learning, the educator also needs to manage the dominant participants to ensure they don't drown out the introverts. Regarding motivation and engagement, an ice breaker at the start of the session injects some fun into the experience and provides everyone with an opportunity to be involved. During the session, the educator should be mindful of seeking contribution from all participants (P16).

Alaric and colleagues (2009, p.45) support this approach:

Body mindfulness provides a way to bring tacit knowledge into awareness and to use it intentionally to promote better communication. It is the foundation for self-reflexivity, the ability to have an ongoing conversation with your whole self about what you are experiencing as you are experiencing it.

SVC has the potential to be mindful learning which can be identified with consciousness, the mental state of being fully in the moment. It is acting and adapting

thoughts and behaviours in a changeable environment and **conversations**. Langer in her book the *Power of Mindful Learning* (1997, p.137) maintains that “At every moment in a mindful state, we are learning something, we are changing in some way, we are interacting with the environment so that both we and the environment are changed”. Furthermore, she goes one step forward to claim (1997, p.64) that mindful engagement increases liking for learning activities and people involved. Mindfulness is defined as a "heightened sense of situational awareness and a conscious control over one's thoughts and behaviour relative to the situation" (Marsano, 2003, p.65). Langer (1997) explains that mindfulness is not about just paying attention but it is a conscious effort to be ‘in the moment’ and realize what is happening. Hence, participating in an online video discussion, the educator and students may become aware of body language/embodiment, behaviours and dialogues to adapt and make ends meet.

Alagic and colleagues (2009) in the same line of thinking describe the concept of body mindfulness which encompasses the holistic perspective of synchronous video interaction. *Bodymindfulness* is a process of becoming aware of and adjusting our inner state (Anderson, 2000; Nagata, 2008, 2005). They claim that the term *bodymind* is based on the systemic nature of lived experience, and mindfulness is a Buddhist concept and practice of cultivating awareness in the present. Bodymindfulness refers to holistic awareness of the state of our body mind (body, emotion/feeling, mind, and spirit) that can possibly, as described by research participants, enhance skillful communication choices in interacting with other people (Nagata, 2007).

According to Alaric et al. (2009, p.45), bodymindfulness can be defined in terms of one's own and another person's inner states and processing of them and their effect on thought, communication and behaviour:

- *overlooking* somatic-emotional states and their effect on communication,
- *attending* to inner states by sensing one's own body mind in response to another person's communication,
- *attuning* one's self and doing the necessary inner work using awareness of the likely effect of one's body mind on one's communication with the other person,
- *aligning* actions with one's intention to communicate skillfully, and
- *resonating* to foster emotional resolution between interactants (Nagata, 2007).

Intercultural differences in learning style were reported by research informants (P7, P17, P15) as an important factor affecting the learning process and content presentation of SVC.

Student feedback and facilitation of student dialogue is mainly what happens in the western civilizations, where people do not have problems asking questions but, for example, in Asia that is something that wouldn't work (P15).

Culture can be conceptualized as “shared motives, values, beliefs, identities, and interpretations or meanings of significant events that result from common experiences of members of collectives that are transmitted across generations” (House, Hanges, Javidan, Dorfman & Gupta, 2004, p. 15). These cultural preferences have an impact on both implicit and explicit communication and learning tendencies, in addition to a cultural group's willingness to use technology (Olaniran & Agnello, 2008; Alagic et al., 2009). For example, (Chinese) teachers are viewed as subject matter authority

figures and it is primarily a teacher's job to impart knowledge upon students and if she adopts a more constructivist pedagogy, she may be perceived as incompetent (Olaniran & Agnello, 2008). Subsequently, this perspective can also affect the decision to adopt or reject communication technologies in the learning environment (Lee, 2004; Olaniran, 2007a,b). Therefore, designing a personalized e-learning system and tools for students who have different cultural backgrounds in distance education, is a considerably complex process (Boondao, Hurst & Sheard, 2012; Hofstede, 2001).

5.3 Axial coding & tele-social presence

As described in Chapter 4 (p.117) some informants expressed the view that it is difficult to create presence without visual cues. Social presence is discussed in Chapter 1 (1.2.2). The CoI model categorization as presented in Chapter 1, (Table 1.1) includes group cohesion, open communication and emotional expression as factors affecting **social presence**. The same groupings of ideas were used for tele-social presence but it was related more on audiovisual environment and embodiment.



Figure 5.3: Tele-social presence

Figure 5.3 explains how the sense of place is created by tele-social interactions when immediacy (open embodied communication) and intimacy (emotional embodied expression) is enhanced.

Tele-social presence is the projecting of identities in the tele-operational environments which, when used effectively, could create a 'stage' for social interaction. Creating a sense of place where online meetings are arranged with the purpose to promote group cohesion seems to be the role of tele-social presence.

Tele-social presence presupposes **embodiment** which enriches participation with social signaling that SVC could depict; gestures, head-nodding, smiling, sharing of facial expressions. SVC, despite missing eye contact, the sense of touch and collocation, includes significant parts of body language that provide the sense of the human element in distance education. Informants concur with Huang and Hsiao (2012) who maintained that being present, asking, smiling, and nodding usually gives

a sense of togetherness and potentially 'bring people closer'. However, audiovisual presence depends heavily on the quality of the device and software used. Togetherness and social network cohesion increase sharing and information exchange which also influence motivation, participation and job satisfaction (Pentland, 2008). Research findings report that viewing the other as a real person breaks some of the formalized communication imposed by asynchronous text (So & Brush, 2008; Shea & Bidjerano, 2010) and therefore, social presence increases course satisfaction and personal connections (So & Brush, 2008). Other studies (Giesber et al., 2009) did not find increase in the satisfaction, though. It has further been proposed that tools that foster more direct social interaction and feedback amongst learners and teachers would foster higher levels of learner engagement (Giesbers et al., 2013).

5.3.1 Sense of place and togetherness

Research participants often used the theatrical metaphors to describe the online environment: *on stage, the show is live, actors /audience, contextual aesthetics, the climate of interactions on stage, appearances, and the tone of voices*. From their responses it could be assumed that a sense of trusting environment, a sense of place have to be created to make online participants come closer to each other and express themselves freely. "As I have said, metaphors help, on screen, it is like a stage you have a full digital representation of yourself, and the audience is in front of you" (P15).

We work a lot with students that are not based on campus, so it enables us to break down the barriers between the campuses and these students. It helped them feel part of the community of the University. It brings them together – the distant

learners- because they have the opportunity to meet online and reduce isolation (P7).

5.3.2 Audio visual and embodied cues

Audio visual cues called social signaling seem to influence social bonding, group coherence which could lead to sharing and thus learning (Pentland, 2008, 2010; Christakis & Fowler, 2009; Dawson 2006). Social learning theories are based on social bonding and group management (Wenger, 2006). The audiovisual cues and emotional contagion seem to play a role to the social presence of educators and students as they build their online identities and cooperate on line, as informants have emphasized (P1, P5, P7, P8, P11, P2, P12, P13, P14, and P16).

I taught statistics to students in Ruanda using Skype audio and Google presentation and it was only five students and I tried to connect with them face-to-face at first and then switch the video off immediately so at least I can see them and they can see me because it is difficult to create presence without seeing the person (P5).

5.3.3 Togetherness as immediacy and intimacy.

Immediacy was defined as timely open communication and educator's feedback which seem to be valued by all research participants.

It's the ability to have tightly coupled conversations, where one person says a little bit and very quickly another person says a little bit; then interaction is tightly coupled. So if you got a problem you can trouble shoots and work

together to collaboratively learn it also enables much richer, I suppose, richer form of communication and if you use text and if you communicate asynchronously, because you get to pick up on the intonation of someone's voice and you get to understand the feelings and you get to understand gestures. So there is much more meaning that can be transmitted and shared (P14).

The tone of voice or an indifferent predisposition could affect the psychological distant participants' experience. Immediate feedback could lead to better understanding, especially for learners with difficulties.

Sometimes when students are confused by the time you get to deal with the issues and it's not in real time, they might get more and more confused. If it's in real time, you are more aware of the students and you can deal with the issues that come up (P5).

Intimacy conveys the meaning of being close to others so that you express emotions within the safety of the learning community. It is what Pentland (2008) called 'kith and kin'; social groups tightly woven and interconnected. This social learning works by modifying participants through social pressure (usually mediated by social signaling), instead of critical reasoning. Findings, based on the interviews, gave conflicting interpretations on intimacy. The importance of connecting people was supported visually and synchronously but some informants (P13, P17) characterized it as a false intimacy because interactions seem to be artificial and unlike face-to-face discussions.

Indications of intimacy online and offline are provided through social norms and needs for affiliations (Gunawardena, 1995) which potentially influence **social trust** and harmonic relationships within the learning community. Other studies though, assume that viewing the other as a real person breaks some of the formalized repetition imposed by asynchronous text communication (So & Brush, 2008; Shea & Bidjerano, 2010) and therefore, social presence increases course satisfaction and personal connections (So & Brush, 2008). Many informants supported that open SVC communication potentially leads to more intimate or immediate relationships for those interested in social learning approaches. When learners in an online classroom collaborate using audiovisual communication tools, they express themselves better, thus, by improving communication, the learning process may become easier (Giesber, Rienties, Gijsselaers, Segers & Tempelaar, 2009) but there are many contextual factors influencing the Community of Inquiry model in the SVC setting.

5.4 Categorization of contextual factors

The contextual factors indicated by respondents are grouped into five main categories. The first group is factors based on the policy of the university to invest in time and capital to improve technologies, training, technical support and offer incentives for educators and students to make wise use of the capacities of synchronicity. Secondly, time zone differences or the schedules of students who are working (often the case for mature students) could provide obstacles to online sessions. Thirdly, technologies (tools, software and bandwidth) often create more difficulties that could be foreseen. The profiling of actors and the target audience (educator and student identity, learning styles, pedagogy, personality traits, academic

expectations, job satisfaction, digital literacy, language and cultural background) create the specific climate for learning (contextual aesthetics) that needs to be taken into consideration. It can be divided into two sub-categories: student identity and educator identity. Finally, the learning objective whether it is to acquire a practical skill, a conceptual understanding or networked learning needs to be clear from the outset. All these factors may influence performance, perception and impression. These contextual factors are the elements which shape the 'stage' on which synchronous video enhanced learning and teachings are performed.

5.5 Summary of chapter 5

All in all, the power of SVC seems to be the audiovisual cues, interpersonal skills, digital literacy, immediate conversation and open dialogue that could clarify roles, expectations and teaching approaches/pedagogy for the educators in order to build a self-fulfilling online identity and as a byproduct to ensure authenticity for the institution. Tele-cognitive presence concerns the learning process and the content in synchronous environment. The content should be delivered in more limited time, in smaller chunks of information without losing the connectivity with the students. It seems to be affected by audiovisual cues/social signaling, students' engagement and intercultural differences. The learning process is often based on problem-based pedagogy which is facilitated through exploration, integration and resolution through dialogue. Social signaling and mimicry of behaviours and thinking patterns seem to have an impact on communication and emotional contagion. Moreover, simulations of procedures and role playing are often used for practical skills but active engagement is essential. Revision of the learning material and reflection was reported to be a very practical approach too. Tele-social presence could create a sense of

'place' that helps learners and educators feel togetherness. The embodied immediacy seems to enhance dialogue and intimacy could lead to better group cohesion when it is not perceived as false. In a nutshell, the CoI model in synchronous contexts is influenced by social signaling, audiovisual cues and contextual factors that have an impact on tele-presences. Tele-presences though, seem to reduce transactional distance by connecting people 'on-stage'.

Chapter 6: A Theory of Tele–Community of Inquiry & Tele-Proximity

In this Chapter, I describe the theory of Tele-proximity as we (the informants and I) have constructed it through the process of open and axial coding, driven by the analysis and the gaps found not only in the CoI model but also in the literature review of synchronous video enhanced education.

The selective coding phase as described by Strauss and Corbin (1967) is the process of unifying all categories around one concept. This core category is the title of the phenomenon presented in the research project. What does all the SVC action/interaction seem to be about? I argue in this chapter that the data converges on the concept of Tele-proximity originated to better serve learning objectives and students needs. It expressed the educators' need to see a person at the end of the line to share experience, dialogue, and teach online. According to my informants, synchronicity in teaching and learning have the power to reduce transactional distance as it is described in Chapter 2 (section: 2.1), due to the fact that it could enhance immediacy, effective communication and serve educational purposes. In my theory, the term Tele-proximity refers to online embodiment that explains how educators and students are connected in the synchronous networked environment via tele-operations. Tele-proximity (online-embodiment) has the potential to enhance human to human (nearness/immediacy) and to expand the CoI framework by redefining the three presences to include synchronous video enhanced communication. The relationship between Tele-proximity and CoI is the core of my theory. The literature I refer to in this chapter extends my earlier efforts in Chapter 3 (section 3.8) to compare and contrast my findings with other studies.

6.1 The Community of Inquiry model on the stage of Tele-proximity

The core category (Figure 6.1) of the selective coding process is identified by the researcher and respondents' perception as Tele-proximity, the need for human to human (embodied) interaction through tele-operations as presented in Chapters 4 and 5. The term was inspired by the networked learning philosophy that stresses the importance of human to human connection as presented in Chapter 1 and the transactional distance theory (TDT) presented in Chapter 2. It is a new definition because it is not solely related to social affordances (Kreijn, Kirschner & Jochems, 2002), virtual worlds (Second Life) or any form of simulation in the digital environment (Jones, 2008). It describes real-time, video enhanced human to human connections in distance education which are perceived by most informants as a new genre of social interaction. In other words, it is not a simulation of what educators do in face-to-face classes. Rather, it relates to interactional means such as synchronous video. The essential feature of tele-proximity is the embodiment of online learning and teaching via tele-operations which provides a different educational experience from both face-to-face instruction and asynchronous learning.

Innovative technologies promise to improve visual, auditory, spatial and haptic (touch sensitive) aspects of communication. The sense of embodiment is a significant dimension in the learning process via synchronous video mediated communication. Eyes pick up cues to attention, turn taking, aesthetics and sometimes even deception (Kappas & Krämer, 2011). Kappas and Krämer (2011) but also my research participants underlined the way hands and body complement speech at both conscious and unconscious levels. Dialogue is a continuous and intimate coupling of speaker and listener. Space awareness could be transformed into a sense of immersion in the

environment. The embodied perspective maintains that knowledge during online synchronous meetings is generated by complex and dynamic human communication as presented in Chapters 2 (section: 2.7.4) and 5 (section: 5.2.2). Educators described learning as both online embodiment (making real time judgments) and offline embodiment/offline reflections (recalling of embodied memories).

As a concept, Tele-proximity explains how synchronous video enhanced presence (online-embodiment) promotes human to human connections and immediacy. Tele-proximity is a term used to designate that proximity (i.e. nearness/immediacy) is brought to a group of people via telecommunication systems, computer networks, and so on (Kreijns et al., 2002, p.14). Proximity (Festinger, Schachter & Back, 1950) enhances the quality of social relationships. The choice of speech during SVC can vary, depending on the experience of personal proximity, including tele-proximity (immediacy/nearness) of the addressee to the speaker (Ferriday, Hodgson & Jones, 2006). If there is more confidence or trust in the addressee, the speaker is more likely to adopt a more intimate speech genre. Every form of SVC communication has two aspects: one that concerns the relation between the message and the proceeding messages, and the other is concerned with the addressivity of the message, i.e. to whom it is directed (Ferriday, Hodgson & Jones, 2006). "Presence and proximity in these environments become forms of tele-presence and tele-proximity, that rely more heavily on interactional means to achieve identity formation" (Jones et al., 2008, p.100). In other words, the tone of voice, the choice of words and the way a person talks in front of a camera could influence proximity and affect projection of self within the community. It is what my participants named 'a human touch'.

In my study, Tele-proximity as the ecology of the Tele-CoI is considered a new theory. The theory explains that SVC has the potential to enhance nearness in distance education by seeing the roles of tele-teacher, tele-cognitive and tele-social presences form another perspective of embodiment 'on-stage'. Embodiment expands the CoI to better adapt it to include video enabled synchronicity. Educators believe that powerful connections can be made through social interactions which are synchronous and video mediated. The theatrical metaphor of 'stage' originated with Goffman (1959, 1974) to analyse human behaviour in social situations. The outcome of Fayard's research (2006) has shown that the 'stage' of social interactions where online identities perform is very important in the context of SVC. Moreover, her findings show that people in video-mediated environments adjust and evolve the well-established routines they have developed for interacting in everyday communication in order to build a 'stage' for interaction. The stage does not only refer to a spatial frame of reference, but also refers to a shared social context, a 'place' that participants attend. As explained in Chapter 5, educators considered important the sense of place which is affected by the immediacy the medium could provide. Also in Chapter 5, the educator's identity and the pedagogy (learning process) and the content presentation built this 'stage' of social interaction for learning purposes. In short, being in this 'place' educators and learners are audio-visually present and perform as actors and audience.

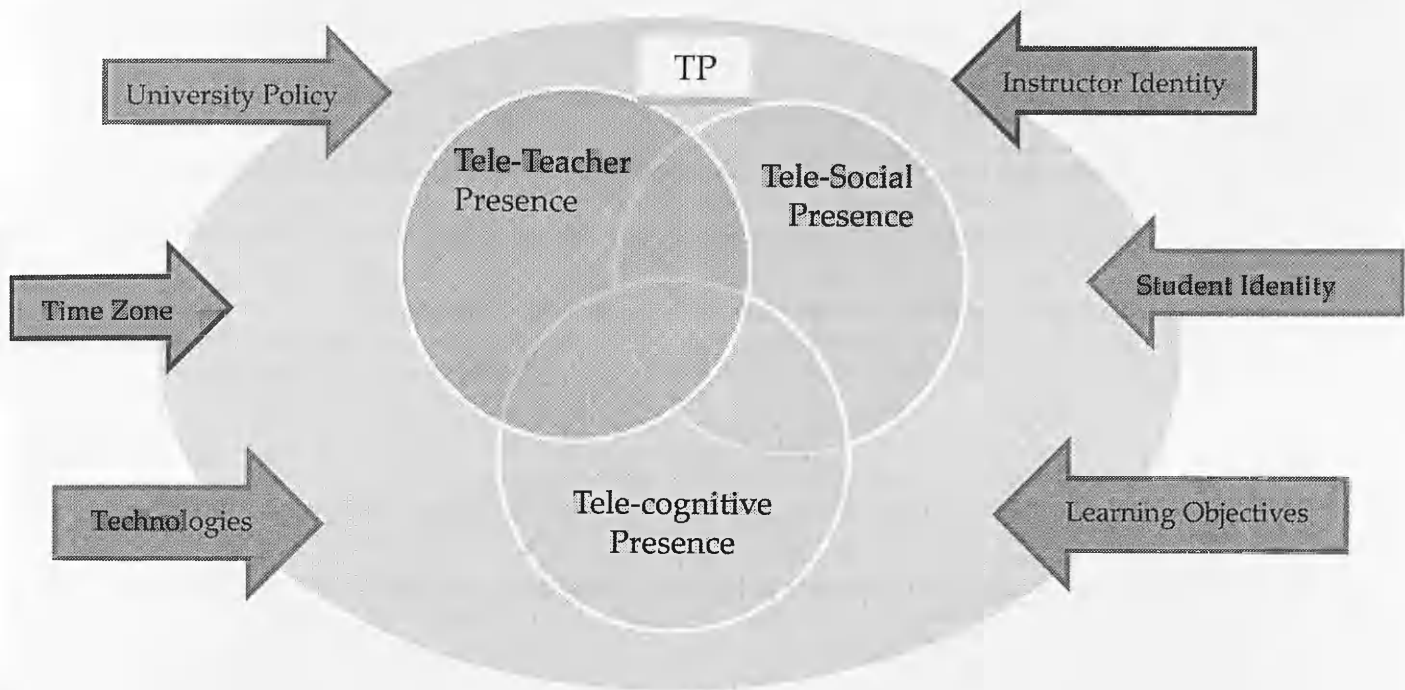


Figure 6.1: Tele-Community of Inquiry model and Tele-proximity

Figure 6.1, the **tele-Community of Inquiry model**, shows the new understanding of the CoI produced by this study. The original model is shown in Figure: 1.2 (section: 1.2.2). In figure 6.1 the presences are interconnected as in the original graph but they are part of a new ecosystem called Tele-proximity. Tele-proximity offers the potential to communicate synchronously and face-to-face via tele-operations which create the circular ‘stage’ for proximity (human to human connection) that transforms all presences to embodied entities. To illustrate further, the identity of the educator, the learning process, the content presentations and social interactions are influenced by Tele-proximity as audio visual communications via tele-operations offering video enhanced face-to-face contact. Tele-proximity like an ecosystem creates the theatrical stage up on which presences appear and perform. The new theory claims that Tele-proximity and the Tele-Community of Inquiry model living harmoniously together,

have the potential to reduce transactional distance while serving educational purposes for e-learning courses. Tele-proximity alters presences because of the audio-visual cues and the human need to be connected as embodied entities. The point where the three dimensions intersect is the educational experience of human to human connection that tele-operations provide. Tele-proximity is affected by contextual factors depicted as arrows.

The three dimensions of the CoI are affected by the environment the communication medium creates and by the contextual factors identified by the informants in Chapter 4, and categorized by the researcher in Chapter 5. These contextual factors include: technologies, instructional design, learning styles, professional salience, cultural background (students' and educators' identities), synchronous tool choices, time zone differences (very early or very late), institutional support, type of learning objectives (conceptual, practical etc.) and contextual aesthetic. Other factors identified in the literature review in Chapter 2 as potential benefits and limitations along with the synchronous teaching approaches could be considered as influences too. The next section deals with the extension and adaptation of the Community of Inquiry model (presences) on the 'stage' of Tele-proximity.

6.2 Tele-teacher presence & Tele-proximity

Tele-teacher presence (TTP) aims to develop the original definition of teacher presence (Anderson et al., 2001) to better fit the context of SVC. As we saw in Chapter 5 (section: 5.1.), the respondents attributed great importance to audio-visual presence - that is, the teaching persona on screen. They placed great emphasis on educator's roles, pedagogy/instructional design, interpersonal skills, audio-visual

dialogue and digital literacy. Furthermore, they underlined professional salience as a prerequisite of good performance which is based on the contextual factors that affect the experience of Tele-proximity. The research participants pointed out that educators need to live the SVC context as students and then as educators. Furthermore, they stated that unlearning and training could be essential for educators to acquire e-competences and to engage in synchronous e-learning (Chapter 4).

Thus, **TTP** could be defined in my study as expression of an embodied identity (audio-visual presence) that mirrors thinking process, behaviours, emotions, and aesthetics for the purpose of realizing personally meaningful learning outcomes and a sense of 'place' for online students and educators as well. The original definition of teacher presence focuses on instructional management, building understanding, direct instruction (Garrison et al., 2000). The new element added to the original definition was the projection of aesthetics, mimicry of thinking, behaviour and emotions that could be transmitted easier in synchronous video- enhanced environment and define educator identity, professional salience and audio-visual presence 'on-stage'.

Educator identity and professional salience (or feelings of doing a good job) intersect in importance. My interviewees understand and identify particularly useful types of development and learning and those which are less so (Lategan, 2002; Mac Labhrainn, 2006; Baxter, 2012). Tele-educators portray themselves on cameras; demonstrate their expert thinking, democratic or leading behaviours, and influence with their presence the climate of the online community (contextual aesthetics). They need to be happy and satisfied in doing their online performance because feelings are

easily transmitted through synchronous media and they are highly contagious in networks (Christakis & Fowler, 2009).

How a person speaks and acts, how he or she moves and dresses, leaves clues as to some sides of his or her personality (extrovert, shy, etc.) and some social-demographic characteristics (age, place of origin, social ranking, etc.). These are partly signals that a person is able consciously to use to present him/herself; i.e. by proposing a certain image to others, the person can obtain the desired result (for example, to appear eccentric or of high social status) by manipulating his or her outer appearance, non-linguistic aspects of the exchange (accent, tone of voice, rhythm), or the style of nonverbal behaviour. (Pitti & Carotti, 2011, p.85)

Online educators need to be aware of the impact of audio-visual presence on the learning process and perception and further investigation is required to explain this influence. Baxter claims that training opportunities for online educators need to include the facets of identity construction and development; “so that learning affects not only the ways in which lecturers teach online but contributes positively to feelings of self-salience, personal efficacy and confidence concomitantly leading to high levels of academic and professional autonomy, motivation and job satisfaction” (Baxter, 2012, para.8).

6.3 Tele-cognitive presence & Tele-proximity

My research participants have pointed out (in Chapter 5, section: 5.2) that tele-cognitive presence (TCP) is heavily influenced by audio-visual cues. TC presence is

influenced by contextual factors, teacher and social presences and the dimension of Tele-proximity. The concept of embodiment, therefore, seems to be a significant dimension in the learning process via synchronous video mediated communication.

This could be explained in terms of embodied cognition theory (Lakoff, 2006, 2008; Iacoboni, 2009). Lakoff and Nunez explain:

Cognitive science calls this entire philosophical worldview into serious question on empirical grounds... [the mind] arises from the nature of our brains, bodies, and bodily experiences. This is not just the innocuous and obvious claim that we need a body to reason; rather, it is the striking claim that the very structure of reason itself comes from the details of our embodiment. Thus, to understand reason we must understand the details of our visual system, our motor system, and the general mechanism of neural binding. (McNerney, 2011, para.2)

Using the same conceptual framework, Bergen (2012) offers an example of the deep and rich meaning of embodied cognition that involves the ways people physically interact with dogs - how each person has experienced dogs while the meaning of 'polar bear' will be totally different, because people likely do not have those same experiences of direct interaction. Lakoff & Johnson (1999) and Bergen (2012) assert that people may understand language by simulating in their minds what it would be like to experience the things that language describes. Embodiment seems to be consistent with Pentland's (2010) work on honest signalling which considers communication as embedded in biology.

They (social signals) are the nonverbal cues that social species use to coordinate themselves—gestures, expressions, tone. Humans use many types of signals, but honest signals are unusual in that they cause changes in the receiver of the signal. If we're spending time together, and I'm happy and bubbly, you'll be more happy and bubbly. There are biological functions that transfer the signals. If I'm happy, it almost literally rubs off on you. (Pentland, 2010, para.4).

Similarly, Iacoboni's (2009) study, *Mirroring people: the science of empathy and how we connect with others*, claims that there are 'smart cells' in the brain that allow people to understand others. From imitation to morality, from political affiliations to consumer choices, mirror neurons are relevant to myriad aspects of social cognition. Amazingly, mirror neurons become also active when individuals are completely still, and they are watching those same actions performed by other people. By watching the actions of others, personal experiences are reflected as a mirror to the brain through a process of simulation. These cells help to understand the mental states of other people, all the gestures made when people speak and when they see (and hear) other people gesturing and speaking. Those gestures seem so intrinsically tied to language.

“Cognition is embodied when it is deeply dependent upon features of the physical body of an agent, that is, when aspects of the agent's body beyond the brain play a significant causal or physically constitutive role in cognitive processing” (Wilson & Foglia, 2011, para.1). George Lakoff (2012, p.773) explains the central concepts of embodied cognition in terms of the neural theory of thought and language (NTTL).

Central to NTTL are the following ideas:

- (a) We think with our brains, that is, thought is physical and is carried out by functional neural circuitry.
- (b) What makes thought meaningful are the ways those neural circuits are connected to the body and characterize embodied experience.
- (c) So-called abstract ideas are embodied in this way as well, as is language.

Experimental results in embodied cognition are seen not only as confirming NTTL but also explained via NTTL, mostly via the neural theory of conceptual metaphor. As Lakoff and Johnson (2003) points out, metaphors are more than mere language and literary devices, they are conceptual in nature and represented physically in the brain.

In Chapter 5 (section: 5.3), I specified the processes leading to tele-cognitive presence. In brief, informants in this study use synchronous tools to discuss case studies (problem-based learning/PBL). Students learn thinking strategies and domain knowledge. In a synchronous context, they negotiate meaning while imitating thinking processes, behaviours, feelings and social signalling. My informants emphasize activities such as role playing and situational learning for improving practical skills. Synchronous communication was useful for revision of the material taught and reflection on the process. Educators present the course content in limited time, recommend smaller chunks of information and have immediate connectivity with the students. Dialogue, audio-visual cues, awareness of intercultural elements, interactivity and mindful presence are useful for making cognitive processes visible online.

Therefore, on the stage of Tele-proximity, **TCP** is defined as the extent to which learners and educators are able to make their thinking and feelings visible, construct and confirm meaning, learn skills and play roles through sustained sensory rich reflection (offline embodiment) and discourse (online embodiment) 'on-stage'. The new understanding of cognitive presence includes educators in the definition because they are integral part of the learning process. Emotions, practical skills or online roles, discourse and reflection are presented on the 'stage' of Tele-proximity.

Learning is a cognitive process that can be affected by one's emotional state. The educators interviewed in my study place great important on the contagion of feelings and mirroring of behaviours (Chapter 4 and 5). For example, frustration can lead to negative attitudes towards the training stimulus (Rozell & Gardner, 2000) and can reduce a person's belief in his or her ability to do well in training (Briggs, Burford & Dracup, 1998). As a result, frustration can hamper learning (Lewis & Williams, 1989). Learning can also be impaired when participants of online meeting are experiencing high levels of anxiety or are totally disengaged and the feelings can travel fast within the networked community (Christakis & Fowler, 2009).

Previous studies (Shams & Seitz, 2008; Katai & Toth, 2010) have demonstrated that the human brain operates optimally in environments in which information is integrated across multiple sensory modalities since it is closer to natural learning processes. Thus, the influential role of social signalling and a multi-sensory approach needs to be addressed and further investigated for educational purposes (Katai & Toth, 2010).

My research participants put great emphasis on audio-visual presence. They claim that during synchronous video enabled meetings, both students and educators are more sensitive to the body's physiological reactions and online environment. In other words, knowledge is generated within a complex, dynamic SVC system which includes the body, brain and the environment. The embodied perspective uniquely emphasizes the biological sensitivity of knowledge, modality-specific (visual or auditory) experiences (Niedenthal, Mermillod, Maringer & Hess, 2010; Lakoff, 2008) and have ecological significance – the environment in which participants are embedded (Wheeler, 2005). Feedback from a subject's own facial expressions contributed to accurate understanding of emotional words (Christakis & Fowler, 2009; Niedenthal et al., 2010; Pentland, 2010). The initial stimuli can lead to an embodied memory formation, which is called on-line embodiment (Niedenthal et al., 2005). This memory can be later recreated without any of the original input in a manner that simulates the pattern of initial perceptual, introspective, and motor experience using modality specific brain simulations (Barsalou, Breazeal & Smith, 2007; Niedenthal et al., 2005), a process called off-line embodiment.

The bottom line is that the informants have indicated real-life experiences, body language and prosopagnosia (facial expressions) are important sources of information, as presented in Chapter 5 (5.1.1.4). Tele-cognitive presence seems to be affected by what is being said, seen, heard and done on the SVC stage in multiple ways. Therefore, more research is needed to understand the potential factors and determine the indicators of tele-cognitive presence as embodied learning and teaching.

6.4 Tele-social presence & Tele-proximity

Tele-social presence (TSP) is defined as the ability of participants to create their identity in a sensory rich ‘stage’, communicate purposefully in a trusting environment and develop inter-personal relationships by ways of projecting their individual experiences, ideas and feelings. Respondents have added a new dimension to the original definition (Garrison, 2009) which is the ability to create their online identity (appearance, roles and social contributions) and willingness to share personal experiences and project preferences on the SVC world. Informants acknowledged the importance of immediacy and nearness which may lead to a sense of belonging to the online community. As far as intimacy is concerned, some informants considered it false when compared to face- to-face interaction but no one denied the sense of proximity and immediacy during SVC sessions.

Previous research has found that: “Learners rated items focused on communication needs and being treated as individuals as most important, aligning their stated preferences with the educators’ perceptions of what actions are most satisfying to online learners” (Dennen, Darabi & Smith, 2007, p.65). “When designing an educational experience supported by computer conferencing, consideration should be given to an initial face-to-face meeting where relationships and a comfort level can be established (Garrison et al., 2000, p. 97). Baxter’s (2011) research concurs with the issue of mimicry and mirroring (section: 5.2.2).

Researchers at the MIT research labs (Pentland, 2010) put great emphasis on audio-visual cues they call ‘honest signals’. These signals are gestures, voice tones and body language that affect communications and trigger responses. The main purpose

for investigating honest signals is that: by better understanding their influence today, studies can shed light on the structure and function of modern social networks (Pentland, 2010). His research group have developed tools and research processes to collect and measure social signalling, for example: *mimicry* (the reflexive copying of one person by another during a conversation, resulting in an unconscious back- and-forth trading of smiles, interjections and head nodding); *activity* which indicates interest and excitement; the influence of one person over another (measured by the extent to which one person causes the other person's pattern of speaking to match theirs) and *consistency or fluidity of speech* and movement, perceived by others as a marker of expertise.

The process Pentland and his colleagues use is called *reality mining*. They have developed tools and research process to collect and measure social signaling. What has been found so far is that audiovisual cues influence critical activities such as **dialogue, negotiations, social cohesion, productivity, group decision making and group management**. Pentland argues that much of human decision-making is largely determined, not by conscious rational logical decision-making, but rather by unconscious processes. This 'social sense' thus forms another channel of communication that revolves around social relations rather than words. Pentland suggests that some honest signals are difficult to fake and hence provide 'a window into our intentions, goals and values'. His research studies provide evidence that social signaling seems to provide social cohesion which can increase sharing of tacit knowledge, attitudes, habits and social support as SVC informants have pointed out too. It is important to note that the MIT research focuses on face-to-face interactions, not mediated by video technology. They have developed tools and research process to

collect and measure social signaling. Tele-cognitive presence provides a lot of audiovisual cues that can be linked to Pentland's empirical evidence showing that unconscious social signaling, rather than rational or logical reasoning plays a central role in both individual and group decision-making.

6.5 Educative purposes

The literature I reviewed in Chapter 2 suggested that a limitation of CoI theory is its focus on problem-based pedagogy based on the indicators for cognitive presence. SVC, however, may be associated with diverse educational purposes and teaching approaches. However, education practitioners have some difficulty in combining media to serve learning objectives (De Freitas & Neumann, 2007; 2009).

My research participants have pointed out that SVC could not only be used to negotiate or construct meaning (as emphasised by the CoI model) but it could be more widely used. They can communicate synchronously to bridge transactional distance as a form of immediacy and intimacy: to resolve conflicts, support and mentor students. SVC may facilitate learning by explaining difficult subjects, assigning roles as in role playing, teaching practical skills, managing synchronous online dialogue and giving personalized feedback. Occasionally, respondents orchestrated content revision where participants were reflecting on how, why and what they have learnt.

These possibilities for using SVC are potentially significant for addressing the problem of overcoming the high student dropout rates in distance learning courses that are indicated in the research literature (Baxter, 2012; Power, 2011). Informants

explained that they could resolve issues, through online discussions with their students, support and mentor them in a different way than by e-mails or telephone calls, adding a personal touch to the communication for those who needed it. In the cases where complex subject matter is taught such as statistics, students may need to ask more questions to reach a learning outcome. For practical skills such as medical procedures video plays a critical role in learning and reflecting on the step by step process and asking questions along the way. Another example is language learning where communication and role playing could give real-life experiences to students talking with native speakers.

The contextual factors categorized in Chapters 4 and 5 (sections: 4.5, 5.4), addressed by the informants, and the potential benefits and limitations, teaching approaches and contextual factors presented in the literature review (Chapter 2), seem to affect online performance and presences. Therefore, the environment that the contextual factors create could significantly influence the Tele-CoI model because it can enhance or hinder embodied communication. It is depicted as arrows in the figure 6.1 that attacks presences and embodiment. Technologies, instructional design, time zone differences, personality traits, digital literacy or cultural background to name few contextual factors, can alter the form or quality of communication. The literature review in Chapter 2 supports my findings of contextual factors and presents some new such as equity, cost, and organizational constraints. To sum up, SVC seems to have the potential to be used creatively for a wide range of purposes so long as the contextual factors are taken into consideration and understood within the Tele-CoI model presented on the 'stage' of Tele-proximity.

6.6 Summary of chapter 6

In Chapter six, I have presented my core category and formulated a theory. The core category is called Tele-proximity and seems to include all others. Tele-proximity (as a new concept) expresses the human need for face-to-face contact and defines the ecosystem of SVC as a theatrical stage up on which embodied presences perform. Online embodiment has ecological significance because it is the environment in which participants are embedded. The audio-visual cues transmitted by tele-operations have an impact on the Tele-CoI model. The Tele-CoI and Tele-proximity formulate a new theory that claims that SVC has the potential to reduce transactional distance and serve educational purposes for e-learning courses. Tele-proximity as embodiment 'on-stage' allows for audio-visual identity, affects learning and content and enhances immediacy. Hence, the CoI model was extended to define tele-teacher, tele-cognitive, and tele-social presences. Contextual factors play a key-role, affecting the harmony of the ecosystem. The next Chapter presents the conclusion of the study, answers the research questions and proposes fields for future research.

Chapter 7: Conclusions & Reflections

This Chapter explains the contribution of the study in filling the gaps identified in the literature review (Chapter 2: sections 2.3.2 & 2.4). It returns to the research questions originally presented in Chapter 1 (section 1.3.2) and discusses how they have been answered by the findings. It concludes by recapitulating the implications for practice, speculating on future directions, and reflecting on the research process.

Networked learning environments can be designed and shaped in different ways depending on the underlying values and views of human cognition, learning, technology and pedagogy. However, as Garrison and Vaughan (2008) assert, students still want significant face-to-face interaction, but ‘not as an extra tagged onto the normal workload’. That is why I tried to write a theoretically-guided and empirically-grounded study of practice. What do teachers do with synchronous tools? How may they adapt synchronous teaching approaches in unforeseen ways to their own educational practices and priorities? Nevertheless, as Anderson (2003) claims, educators can never get the ‘perfect’ mix, because learners may have differing perspectives about what counts as education and how interaction should unfold, especially in the culturally diverse networked learning environment.

7.1 Contribution of the research

My study categorizes synchronous teaching approaches reported by the informants, for supporting distant learners and links them to some educational purposes.

Insights from investigating the role of educator from an educator perspective shed light on the way audio-visual presence affects the teaching persona and can offer some authenticity for the university.

Learning and content presentation seem to be influenced by embodied presence of participants, time limitations and audio-visual cues.

The sense of togetherness (immediacy and intimacy) is enhanced because participants create a sense of place, 'a stage', for social interactions that facilitate immediate communication. Some informants appreciated the intimacy, while others characterized it as false.

The contextual factors influencing teaching and learning synchronously were also investigated and broadly categorized to describe the 'geography of the field'. In Chapter 4, the contextual factors mentioned by the participants were presented and categorized in Chapter 5. In Chapter 2, factors were sorted based on the potential benefits and limitations of SVC. The literature in the field of video enhanced synchronicity is, to a large degree, uncharted and unorganized (Bower et al., 2012). The 'contextualization' and organization of literature in the field as presented in Chapter 2 may be useful for other researchers investigating synchronicity.

My research contributes to the existing body of research literature, discussed in Chapter 2 (section: 2.4) by providing empirical evidence of the value of SVC, its potential form (teaching approaches), possibilities (linking educational purposes to the medium) and contextual factors. My analysis concurs with existing research

which suggests that it is valuable to take transactional distance theory (TDT) as presented in Chapter 2 into account and to create a 'place' for synchronous connections of teacher, cognitive and social presences.

This is the first time that educators' voices have been heard in the field of synchronicity in all their international and interdisciplinary variety. Despite the fact that some studies have shown that the teacher visual presence plays a crucial role (see Chapter 2: section 2.4), the educator perspective and the pedagogies educators adopt in praxis to support students and educational purposes with synchronous video enhanced communication have not been studied enough so far. In my research design, the educators' voices are heard, claiming that they need to work with more institutional support and efficient means to have a closer communication with distance learners (Chapter 5, section: 5.2).

The concept of Tele-proximity explains the role of online embodiment that creates a theatrical 'stage' for presences to perform and interact. The concept of Tele-proximity when related to Tele-CoI formulates a theory. Tele-proximity as a theory maintains that SVC has the potential to bridge transactional distance and serve educational purposes. Tele-proximity expands the CoI model to include synchronicity and redefines teacher, cognitive and social presence. The Tele-Community of Inquiry model better fits synchronous environments and promotes scientific dialogue about online presences for networked learning.

One of the important criteria of my study as presented in Chapter 3 (section 3.3) is practicality. Practicality of Grounded Theory is synonymous with social good and

usefulness. Therefore, findings may be practically useful for professionals. These contributions may be creatively implemented in the instructional design of distance learning courses or training. Likewise, the analysis may inspire useful application to reduce transactional distance and stimulate further research. The next section answers the research questions posed in Chapter 1 (section: 1.3.2) briefly.

7.2 Addressing the research questions

The results from the Informed Grounded Theory research compared to the literature review help me to understand the synchronous teaching methods that could bridge or reduce the gap of transactional distance and explain the usefulness of the theory of Tele-proximity. This section returns to the research questions, as initially presented in section: 1.3.2 and answers them using the experience gained from the research informants and the on-going literature review.

7.2.1 For what educational purposes and pedagogic models do educators use synchronous teaching approaches?

All participants maintained that Tele-conferencing (with opportunities for questioning and dialogue) is a very effective approach because of its conversational style and resemblance to face-to-face instruction. This approach was deployed for problem-based/dialogue pedagogy (case studies), discovery learning, role playing or simulation of practical procedures, personalized learning (especially with post graduate students to clarify complex concepts and processes), and reflection. According to the data collected, if the technology works and educators use it effectively, teacher presence, cognitive presence and social presence have the

potential to be enhanced. It is a very demanding endeavour for the educators, however, since they need to have organized everything beforehand and be able to adjust to rapid changes, if need be. Moreover, the contextual factors affecting online synchronous sessions should always be considered. In the literature review presented in Chapter 2, other studies support the view that synchronous interactions facilitate cognitive scaffoldings and online presences.

A new approach emerged from the data collected in this study that of **blended synchronous learning projects**, which aims at extending the traditional classroom by connecting on campus and off campus students.

Research participants considered **webcast (with limited questions and strong teacher presence)** not to be a very effective instructional approach because it is a passive form of learning and minimizes social presence. However, it could be useful for students from specific cultural backgrounds who are not familiar with dialogue and asking questions or for students who are not able to actively participate due to special needs, personality traits/learning styles or time zone difference. In the literature review (section: 2.5.2), it is often cited as being the teaching approach to accommodate larger number of students to avoid duplication of effort and cost savings. Other studies (section: 2.5.2) concur with SVC informants that webcasts tend to minimize social presence because the educators cannot experience the presence of the audience and the students cannot experience the feeling of connection with other participants.

Assignment feedback discussed and checked by educator via videoconference is a method often used for supervision of Ph.D. candidates but there were cases that the informants gave personalized feedback on a weekly basis for those who needed it. It seems to be very effective for students having difficulties and it can clear misunderstandings and resolve conflicts. Despite the fact that informants described it as labor intensive, they considered it important because VC can connect participants and educators can offer clear guidelines and psychological support. Studies presented in section: 2.5.2, maintain that audiovisual feedback was perceived by students as more 'real' and 'personal'. Furthermore, research findings (section: 2.5.2) emphasize the timely communication and content effective feedback as factors affecting self-reflection and self-regulation of learning for both students and educators.

Student collaborative tasks via videoconferencing are useful but they should serve specific learning objectives. Interviewees underlined the importance of teacher presence to assure that the students had performed the task effectively. Moreover, connecting off campus and on campus students could make distant students feel more that they belong to the specific university and could reduce isolation. Research presented in Chapter 2 (section: 2.6.2) supports the effectiveness of synchronous collaborative task for learning, reflection and motivation.

Informants considered **archiving of online meetings** a valuable approach but they think it is rarely used by students and educators. Most participants recorded their lectures in the first years of their academic career to improve their teaching skills but they have not used them since then. There is an informant, however, who always archives her online sessions because it is a university policy. Some respondents of

SVC found useful the idea of turning synchronous lectures into asynchronous resources because it gives the opportunity to create resources for those not able to attend synchronous meetings. These recorded lectures and dialogues may provide students with more freedom of time and pace, allowing them to review material at their own pace and at a time and place of their choice. SVC respondents considered it useful but not as effective as interactive learning tasks. The bottom line is that there is conflicting evidence regarding the use of recorded lectures, many of which are already available online, but it is an option that could be provided, if the educator is willing to record online sessions with students and the specific target group of distant students willing to use them. In Chapter 2 (2.5.2), findings in the literature suggest that it could be effective for evaluation processes and improvement of interactional patterns. Despite the fact that many SVC informants claimed that archiving videos are not seen by students and teachers, other research (Chapter 2, section: 2.5.2) maintained that distant students, on campus students and educators favour the use of recorded lectures.

Research participants proposed pedagogies which are based on dialogue and interactivity. Emphasis was also put on scaffolding and the influence of the senses. The pedagogic models proposed are Social Constructivism, Conversational model, Socratic dialogues, role-playing simulation, Salmon 5 stages of e-moderation and Gagne's 9 elements of instruction and the theory of Community of Inquiry. The sensory stimulation theory of learning was mentioned as a framework to design learning activities.

The participants pointed out many different educational purposes for which SVC could be used. These include: negotiate or construct meaning, reduce transactional distance as a form of immediacy and intimacy (resolve conflicts, support students), explain difficult subjects, assign roles as role playing in language learning and teach practical skills as medical procedures, manage synchronous online dialogue or give personalized feedback and reflect on content.

7.2.2 How does synchronicity affect teaching, cognitive and social presence?

As I argued in Chapters 5 and 6, video mediated synchronicity has the potential to create a sense of place or 'stage' which is influenced by contextual factors. On the stage, online presences perform and influence roles, learning processes and social interaction. **Tele-teacher presence** could be seen as expression of an embodied identity (audiovisual presence) that mirrors thinking processes, behaviours, emotions, and aesthetics for the purpose of realizing personally meaningful learning outcomes and a sense of 'place' for online students and educators as well. Likewise, **Tele-cognitive presence** can be seen as the extent to which learners and educators are able to make their thinking and feelings visible, construct and confirm meaning, learn skills and play roles through sustained sensory rich reflection (offline embodiment) and discourse (online embodiment) on 'stage'. The presentation of content is based more on interconnectivity, interactivity and mindful presence than lectures. Finally, **Tele-social presence** is the ability of participants to create their identity in a sensory rich 'stage', communicate purposefully in a trusting environment and develop interpersonal relationships by projecting their individual experiences and feelings.

7.2.3 What contextual factors do educators identify as influencing their use of synchronous teaching approaches?

The literature I reviewed in Chapter 2 indicated that a number of contextual factors could lead to effective learning outcomes and innovative uses of SVC. All the contextual factors (University policy, time zones, technologies, learning objectives, educator and student identities) reported by research respondents seem to affect the sense of ‘place’ and the circular ‘stage’ upon which social interactions and SVCs are performed as presented in Chapter 4 (section: 4.5). Similar factors were identified in the literature review in Chapter 2 (section: 2.1) as being important for reducing transactional distance.

In the literature review, potential benefits and drawbacks were defined as contextual factors because the use of technologies, pedagogies and instructional design influence learning in positive or negative ways, directly or indirectly. For instance, equity and cost (section: 2.6.5) might affect the number of students participating in the course. Thus, the teaching approaches, the potential benefits and limitations presented in Chapter 2 could fit in the categories of contextual factors indicated by the informants.

7.3 Implications for practice

Educators and instructional designers may make use of the knowledge produced from this study to enrich curricula with more synchronous activities to serve specific learning objectives. These activities can also create professional online identities for educators. If educators and designers use synchronous teaching approaches effectively the transactional gap between students and educators may be reduced and the dropout rate may decline. Policy makers, taking my findings into consideration,

may use strategies to train, support and provide organizational incentives to persuade core educators to dedicate more time to learn how to use technology for networked learning. Finally, researchers may deploy the expanded and adapted Tele–CoI model as a heuristic tool to investigate embodied cognition, media psychology, or synchronicity in relation to culture and gender.

7.4 Suggestions for further research

This research took place in an interdisciplinary and international context, involving educators who are considered to be early adopters of SVC. It would be interesting to narrow down the research to specific educational purposes and to investigate new synchronous technologies such as online polling or screen sharing. Moveable cameras which free the user from having to sit in front of a computer, face and eye movement tracking devices (Yang et al., 2008), hand gesture recognition (Hurtienne et al., 2010) or 3D holographic representations of participants called TeleHumans (Blanche et al., 2010) deserve more investigation to determine how they can best be implemented in the field of distance education.

Given the rapid rise in online enrollment over the past decade (Allen & Seaman, 2010; Braxter, 2011; Power, 2011), it is increasingly important to examine methods and tools that may foster community, improve communication, reduce transactional distance and ultimately enhance teaching and learning in an online environment.

Further research is needed to develop suitable indicators for tele-teacher, tele-cognitive and tele-social presence for the Tele-Community of Inquiry (CoI) framework that better reflect the affordances of SVC. Audio visual presence seems to be affected by what is

being said, seen, heard and done on SV stage in multiple ways. Therefore, more research is needed to understand the potential factors and determine the indicators of embodied learning and teaching. Therefore, studies could investigate more the role of media psychology and embodied cognition.

The e-learners' background is rich in cultural and linguistic diversity and gender. These issues were not specifically examined in this research, yet existing studies have highlighted the challenges associated with gender (Yukselturk & Bulut, 2009) and cultural differences (Boondao, Hurst & Sheard, 2008) in networked learning. These issues also would merit investigation and may shed light on different aspects of SVC.

7.5 Final Reflections

Transactional distance is reported as problematic by many educators and students when participating in e-learning courses. High student dropout rates and the number of e-learning endeavours that are led by adjunct educators show that e-learning needs much more work to reduce dropout rates and persuade core educators to invest time and effort to use technology. Paradoxically, almost all e-learning platforms have video enhanced tools for synchronous interactions, but they are rarely used for educational purposes. The paradox lies in the controversy between what drives market demand to invest in synchronous tools and what drives educators not to use them. Available technologies, organizational constraints, educators' resistance to technology, personality traits (learning styles, academic expectations, and cultural influences) can all be important obstacles hindering the application of synchronicity for networked learning. It is important to note, however, that the use of synchronous tools seems to display an upward trend in distance education (Bower et al., 2012).

In trying to investigate this paradox in my doctoral research, I engaged extensively with existing empirical studies on synchronous tools from student and educator perspectives, as well as learning theories and pedagogies central to distance education, in order to facilitate a familiarity with the field. Thus, exploring the ‘geography of the subject’, I formulated and justified the research questions. Furthermore, the review in Chapter 2 was crucial insofar as it highlighted an important issue with many extant studies in the particular field, namely the strategy used to operationalize the concept of transactional distance and tele-presence. Typically, tele-presence in SVC could be a slippery concept because some theorists use the term for virtual environments such as Second Life. Others claim that when synchronous tools are effectively used, participants experience a sense of co-location that simulates face-to-face connections. My almost all research participants, in contrast, consider online synchronicity to be a new genre of social interactions that creates a virtual meeting place staging roles and performances. Tele-proximity is in tune with the latter concept of online synchronicity. Moving on, I tried to explore the context of SVC in which the phenomenon of online communication resides. As I explained in section 3.1, comparing phenomena and contexts makes the theory strong. As such, the motives for conducting an early literature review reflect many of the arguments outlined in Chapter 3 and in practical terms this early review constituted an important and necessary element of the doctoral progression process. Chapter 4 presented the interview data and Chapter 5 re-arranged categories and compared them with other studies and theories. Finally, all categories are included in my theory that combines the concept of Tele-proximity and Tele-CoI.

From an international and interdisciplinary perspective, my study recommends that SVC has a great potential to facilitate distance education including different teaching

approaches that could be used for different target audience and educational purposes. SVC could be deployed for problem solving, dialogue, immediate and personalized feedback, acquisition of practical skills, reflection and reduction of transactional distance. Furthermore, it is valued as lived embodied experience, connecting human to human over a distance. Many studies in SVC were organized and presented in Chapter 2. My findings contribute to the existing literature by expanding the CoI model to include video-enabled synchronicity and my theory redefines the three online presences. Educators may not use this knowledge in order to enrich curricula with more synchronous activities to serve specific learning objectives and create a professional online identity while helping students to create theirs in order to build a learning community but also helps to educate students of e-learning. . Hence, they may reduce student isolation and reduce dropout rates. Policy makers, taking my findings into consideration, may use strategies to train, support and provide organizational incentives to persuade core educators to dedicate more time to learn how to use technology for networked learning. Finally, the expanded and adapted Tele-CoI model/method of this study may be used as a heuristic tool for other studies in fields of embodied cognition, media psychology, and synchronicity in relation to culture and gender. Furthermore, specific educational purposes and new technological means or methods need to be investigated.

With this, my research journey to investigate human to human connections with ‘logos’ and ‘ethos’ reaches the stage of ‘telos’ (as described in Chapter 3), the end of my destination, having in mind that: “To know who we are, we must understand how we are connected” (Christakis & Fowler, 2009, p. xiii).

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