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**UNDERSTANDING THE NATURE AND FUNCTION OF
EMPATHY IN SYNCHRONOUS MULTIMEDIA
CONFERENCING**

A thesis presented in partial fulfilment of the requirements for the degree of
Doctor of Education

at Massey University, Manawatu,
New Zealand.

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2011

ABSTRACT

With the advent of the internet, teachers and learners are reshaping how interaction in distance education occurs. These changes are being further stimulated through the integration of relatively new online collaboration tools such as synchronous multimedia conferencing (SMC). A central and, as yet, not fully explored component of social interaction within this context is the ability to empathise, or interpret the internal frame of another. The importance of the ability to empathise is that it is an essential relational mechanism for effective social interaction and learning. The intent of this research was, therefore, to promote understanding of the nature and function of empathy in synchronous multimedia conferencing (SMC).

The exploratory research undertaken was embedded within a hermeneutic perspective and guided by the hermeneutic lens of Gadamer (1975, 2001). It explored conferencing participants' heuristic understandings of *how* they experienced empathy within SMC. Utilising a qualitative case study methodology, participants were engaged within an iterative dialogical research strategy that enabled the development of understandings over time. The purposeful selection of two case studies consisting of two separate distance education classes, were the foci of the investigation. Data were collected from repeated one on one and focus group interviews spread over a six-month period. The strategy enabled participants to reengage with their own and others' understandings as these developed within a hermeneutic circle approach.

The findings indicated that the participants experienced empathy within SMC and that the salience of those experiences appeared to be related to a number of factors, including respondents' degree of engagement and the *richness* of their multimedia conferencing experiences. A wide range of findings related to how participants experienced empathy was presented, representing a range of empathic experiences. The coding of emergent themes that led to the stimulation of participant's own models of empathy suggested a multifaceted relationship may exist between the participant, the physical environment, and the social environment, bound together through empathic interaction. Several implications were identified from the research and the results were discussed in light of previous research. Future research directions were also discussed along with the contributions to knowledge the research has made.

ACKNOWLEDGMENTS

To my supervisors, Professor Margaret Walshaw and Dr Ben Kehrwald, I wish to extend my sincere gratitude for their guidance and support. Without your critique, guidance, and support, I am sure the submission of my thesis would not have been possible. A special thank you must also go to Philippa Butler, who provided comprehensive and personalized training in the use of NVivo® software, along with formatting guidance. A significant aspect of my appreciation has been the preparedness of these wonderful people to provide support to me over distance using the technology that I have used for my own investigation.

I wish to thank the participants of this research for their willingness to share their experiences of empathy within SMC. I would also like to acknowledge the additional commitment and challenges they undertook by being prepared to be interviewed via the SMC environment and engaging so actively in the participatory research strategy. Without their contribution to the research over the six-month period our understandings of how conferencing participants experience empathy within SMC would be much poorer. I would also like to thank the Southland Interactive Learning Community (SILC) Principal, participating schools and their staff, and the Massey University Human Ethics Committee for their permission and support in the completion of this research.

To my wife Lynda and children Neryda and Shnece, I love you and thank you for supporting me in the completion of this special dream in my life. Without your constant support and understanding this work would never have been completed.

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CHAPTER 1.

INTRODUCTION

1.1 Background and context

Distance education, as an educational delivery mechanism, has become increasingly prevalent, accepted, and important within the education sector. It has been the most significant development in education in the last quarter of a century (Moore & Anderson, 2003). One of the benefits of distance education is that it provides an increasing number of people with a wider range of educational opportunities (Richardson & Swan, 2003). Education is no longer restricted to face to face interaction, nor is it restricted to occurring at the same time, or at the same place as teaching (Brown & Duguid, 2000). Education can now transcend the barriers of distance and time as learners take advantage of educational opportunities regionally, nationally, or even globally, at any time of the day or night.

Without technological advancements in information and communication technologies (ICTs) and the development of the internet, distance learning would be far less successful (Moore & Kearsley, 2005). These advancements have stimulated the development of collaboration tools that enable learners and teachers to reshape the way social interaction occurs. These tools help people to create online communities of learners and re-establish the learner-teacher relationship (Carabajal, La-Pointe, & Gunawardena, 2003; Dron, 2007; Peters, 2003).

Online communication tools such as email, chat-rooms, blogs, wikis, and bulletin boards, have been associated with a range of outcomes including: high levels of responsive interaction between communicators, high learner satisfaction, personalisation of experience, intimacy, dialogic interaction, immediacy of feedback, supported interaction, flexibility, and user-friendliness (Richardson & Swan, 2003; Rourke, Anderson, Garrison, & Archer, 1999; Shin, 2002). The changing nature of distance education has been facilitated by leveraging the power of ICTs and has stimulated interest in the social nature of learning in the context of technology-enhanced

distance education (Garrison, Anderson, & Archer, 2003; Moore & Anderson, 2003; Moore & Kearsley, 2005; Moore & Shin, 2000).

When viewing learning as a social process, empathy has been identified as a necessary capability to facilitate effective interpersonal interaction in online communication (Pfeil & Zaphiris, 2007, 2009; Pivec, 2006). Empathy's primary role is managing the interpersonal relationships and complex social dynamics that are essential for social cohesion and creating a community of learners (Arnold, 2005). The importance of empathic abilities in social cohesion is emphasised by numerous researchers and successful practitioners in the fields of education and psychology (Heite, 2005; Ickes, 1997; McLeary, 2005; Rogers, 1977; Rogers & Frieberg, 1994; Stueber, 2006; Wilson & Browynn, 2004; Zoma, 2005).

The objective of this research is to promote understanding of the nature and function of empathy in synchronous multimedia conferencing (SMC). The focus will be on *how* participants experience empathy, through the exploration of conferencing participants' lived experiences. Through the iterative dialogic engagement of participants over successive interview methods, findings will be used to stimulate deeper understandings, especially on how people are able to perceive how others *feel* in computer mediated environments.

1.2 Significance and rationale for the study

A relatively recent group of collaboration tools that are being increasingly utilised in online learning environments are SMC tools. These are internet-based computer technologies that provide a range of real time voice, video, text and application sharing capabilities within point to point, or multipoint distributed learner environments. It is expected that research into empathy within SMC will be of significance as:

1. It acknowledges the role of empathy in social interaction and learning,
2. It is an area of technology-enhanced distance education of growing importance,
3. The results have potential to enhance educational outcomes, and
4. Research of this type has not yet been undertaken.

Empathy has an important role in social interaction, interpersonal relationships and learning. It is related to the ability of an individual to perceive another's frame of reference and thereby enables interpretive accuracy and, in turn, increased learning and appropriate response type. If successfully achieved, empathic communication continues as backward and forward dialogic engagement in which successful social interaction and learning can occur. Without the ability to interpret others successfully, the social fabric of social interaction unravels, the social interaction fails, and learning is either totally lost or severely affected (Ickes, 1997). The significance of empathy is not only acknowledged as a social relational mechanism within face to face interaction but also within online interaction, as noted by several researchers (see, for example, Holmberg, 2003; Hughes, Ventura, & Dando, 2007; Kehrwald, 2008; Nooteboom, 2004; Preece, 2005).

Several factors are pushing forward the development, integration, and use of technology-enhanced distance education tools. The desire for a wider range of educational opportunities, the economic benefits of distance education, and more recently the reduction of the educational carbon footprint are some of the main contributing factors to an increase in the provision and access to learning online (Rifkin, 2009). By providing learning that is accessible, collaborative and effective, technology-enhanced distance education is taking on an increasingly important role in the education sector. More importantly, however, as technological capability, user connectivity and online pedagogy continue to develop, the prevalence of technology-enhanced distance education is expected to increase (Moore & Anderson, 2003).

Research into this area will also be of significance due to the expected benefits of the findings to online teachers, conferencing participants, software developers, and policy makers as they seek to facilitate more effective learning. The results are expected to contribute to a much needed knowledge base of empathy in synchronous multimedia conferencing in particular and online technology-enhanced distance education in general (Vonderwell & Franklin, 2002). Through this growing knowledge base there is potential to improve individual participation and group collaboration through conferencing participants' increased knowledge of empathic and relational abilities (Arnold, 2005; Hatzipanagos, 2006; Park & Bonk, 2007). These abilities may improve the effectiveness of social interactions (Caspi & Blau, 2008; Pivec, 2006), helping

participants to create communities of learners, which have been found to be beneficial to overall learning effectiveness (Carabajal et al., 2003; Richardson & Swan, 2003; Tung & Deng, 2006).

Despite the increasing importance of research into computer-mediated communication within technology-enhanced distance education, research in the specific area of synchronous interaction has been lacking (Winiecki, 2003). This is especially so in the secondary sector with Tung and Deng (2006) suggesting there is need for research focused on school age students rather than adult subjects. Reviewing recent literature, the focus of the research has predominantly been in the adult distance education sector (see, for example, Hall, 2008; Hall & Hall, 2009; Molka-Danielsen, Carter, & Creelman, (2009); Pfeil & Zaphiris, (2009); Pfeil, Svangstu, Ang, & Zaphiris (2011); Preece, (2004)). Of the recent research studies in empathy within online communities, it is that of Pfeil and Zaphiris (2007, 2009) and Pfeil et al. (2011) that were of most relevance to the current study. These authors investigated empathy within Senior Net discussion board collaborations focussing on patterns of empathy within asynchronous online discussion board collaborations, social network structure of those collaborations, and taxonomy of social roles within each research study respectively. This research, however, did not explore SMC, in particular, nor SMC in the senior secondary school context. Research into real time or synchronous multimedia conferencing within this context has not been undertaken. Therefore, research looking at empathy within SMC within the secondary sector will add to the base of empathy research and warrants further investigation.

1.3 Research strategy

The phenomenon of empathy consists of both conscious and subconscious processes that occur when SMC participants engage socially (Decety & Jackson, 2004). These empathic engagements generate tacit, heuristic, context-bound knowledge and understandings and therefore require an interpretive approach to explore them. These understandings cannot maintain their integrity if they are removed from the context in which they are interpreted. Trying to isolate, measure, or reduce the elements of empathy within SMC would ignore the complexity and importance of the dynamic relationships within these interactions (Ajjawi & Higgs, 2007). It is therefore essential

that explorations and interpretations made of these relationships as part of the research are undertaken in the context in which they were developed.

A hermeneutic research approach, guided by the work of Gadamer, supports the use of an interpretive research strategy. It also supports specific methods and techniques that provide participants with opportunities to build their understandings from parts to a whole over time (Dostal, 2002; Gadamer, 1975, 2001). This approach also allows meaning making to occur within an iterative dialogical research strategy involving both the researcher and participants (Charmaz, 2003). As these understandings are interpretations of participants' *lived* experiences, they are dependent on the personal frames or histories of participants and that of the researcher and need to be acknowledged (Crotty, 1998; Dostal, 2002; Guba & Lincoln, 1989). Each of these interpretations is also unique, leading to not one reality, but multiple realities that are constructed within intersections between them (Creswell, 2002).

The hermeneutic circle is a lens from which meaning is made to make sense. The circle emphasises a part to a whole process by which understanding is developed. A simple analogy of this process is understanding text. Each word is a part and is defined and integrated into the contextual whole. The whole then increasingly becomes an illuminative context into which parts become easier to integrate into the whole. There is a mutual clarification between the two and new information may intercept or enter the circle at either a part or a whole (Bonterkoe, 1996; M. Z. Cohen, Kahn, & Steeves, 2000; Gadamer, 2001).

Data gathering and interpretation should involve open and descriptive reporting of the exploration, identification, coding and interpretation of research participants' experienced-based understandings of empathy within SMC (Denzin & Lincoln, 1994; Schwandt, 1994). Using an interpretive paradigm and synergies with exploratory research, it is also acknowledged that this research offers the potential for the generation of new understandings and models of the complex and dynamic relationships involved with empathy within SMC (Ajjawi & Higgs, 2007).

The synchronous multimedia conferencing software used within this study was the Adobe© Connect™ web conferencing tool. It is based on Adobe Flash® technology

which can deliver multimedia interactions within an online multi-point conferencing context. The specific Adobe Connect software used by the case study groups for their online classes, for the research interviews as part of the study, and the researcher for interviews, NVivo® training and meetings with supervisors, is hosted by the New Zealand Ministry of Education and is provided to New Zealand educational users for distance learning courses, professional development and associated educational purposes. The software allows for multipoint webcam, voice, text chat, image sharing, PowerPoint presentations, application sharing and shared desktop functionality (see Appendix X for screen captures of the Adobe online configuration)

The intent of this research was to promote understanding of empathy within SMC. In order to achieve this intent, two preliminary research questions formed the foundation for an exploration of how participants experienced empathy within SMC (see, for example section 2.8 for details of the research intent and research questions). These research questions formed the foundation for the stimulation and development of participants' understandings over time.

1.4 Definitions

1.4.1 Distance education

Distance education covers a wide field of educational practice, from print based correspondence learning, to asynchronous email, blogs and wikis, to synchronous multimedia conferencing and video conferencing. Moore and Kearsley (2005, p. 221) define distance education as “teaching behaviours that are executed apart from the learning behaviours”. The separation that occurs between teaching and learning is bridged by social interaction.

1.4.2 Synchronous multimedia conferencing (SMC)

Synchronous multimedia conferencing has increasingly come into prominence with the availability of new ICTs and higher bandwidth connectivity. It has also been motivated by users' perceived need for flexible, interactive and content-rich conferencing options (Vonderwell & Franklin, 2002). These specific computer assisted communication tools consist of *multi-channel* communication: voice, video, text chat, application sharing,

document sharing, and shared manipulation of digital objects. These provide participants the opportunity to interact synchronously (in real time) using simultaneous conferencing tools, as opposed to the asynchronous, *single channel* nature of email and postal collaborations (Finkelstein, 2006).

1.4.3 Empathy

Empathy is seen as the experience of a similarity between feelings of oneself and those of another, *feeling as they feel*. This process must, however, occur without losing the ability to identify whose feelings are whose (Decety & Jackson, 2006). Icke (2003) suggests a metaphor for this process and that is of an everyday form of mind reading, where one feels the feelings of others through experiencing the same neural representations as the other person is experiencing. It is believed the basic neural networks that allow this to occur are hardwired into the brain and develop through social interaction with others (Decety & Jackson 2004). As Decety and Jackson (2006) suggest it is a process that involves the imaginative transposition of oneself into the feelings and thinking of others.

Empathy has both cognitive and emotional aspects within its structure. The cognitive ability to perceive others can be undertaken in separation from an emotional response from that perception. Perspective taking enables one to understand what others may be thinking or feeling. The perception of affective states in another automatically activates neural representations for that affective state. This occurs through the function of ‘mirror’ neurons that are the same neurons that would be activated if you were experiencing the affective state yourself (Decety & Jackson, 2006). Three processes are necessary in empathising with others. First, there is a requirement to attend to sensory input from others. From this input, a person then imagines the cognitive and emotional state of the other person based on those visual, auditory and situational cues. Finally, an individual then manages his or her emotional response to these neural representations (Rankin Kramer, & Miller 2005).

Rogers (1959) provided an early definition of empathy, as the ability “to perceive the internal frame of reference of another with accuracy and with the emotional components and meaning which pertain hereto as if one were the person without ever losing the *as if*

condition” (pp. 210-211). Of more importance, however, it is the ability to interpret and understand others, *to see as they see, feel as they feel, or be in their shoes* (Brna, 2006; Rogers, 1977; Rogers & Frieberg, 1994).

Empathy is a sophisticated set of skills that are integrated into communication and include attunement, de-centring, conjecture, and introspection (Arnold, 2005). Empathy is at the core of an individual’s ability to relate and is a highly important process in relating to others (Ickes, 1997). Nezlek, Feist, Wilson, & Plesko, (2001) suggest empathy is a core element of emotional intelligence and the ability to relate to others effectively. The ability to empathise helps people to attribute both motivations and capabilities of others correctly (Nooteboom 2004). Through these correct attributions within social relationships Tu and McIsaac (2002) suggests social interactions are impacted positively. Empathy is, therefore, a personal and emotional experience grounded in social interaction and the social context (Pivec, 2006).

1.5 Foreshadowing the contents of the thesis

The literature review that follows explores how empathy is experienced as a social relational mechanism. As a socially constructed and negotiated phenomenon, empathy is explored in terms of its manifestations and functions. It is a review of how empathy is experienced in a range of contexts with the view to using these understandings to inform how participants may experience the manifestations and functions of empathy within SMC. After the review of literature from a wider perspective, the work previously undertaken on empathy within distance education is presented, including: transactional distance, social presence, and cognitive distance. The chapter concludes with rationale for this research and the specific research intent and research questions.

Chapter three, the methodological considerations, discusses the theoretical underpinnings of this research. Guided by the hermeneutic circle, a qualitative interpretive research design has been applied to this research through an iterative dialogical research strategy. The interview data collection methods are discussed along with selection of data sources, data coding procedures, data analysis strategies, and the role of the researcher. Chapter three concludes by looking at the quality of data obtained and ethical considerations of the research.

Chapter four presents the findings of the study. The themes or units of meaning identified during the data coding process are presented. Numerous themes were identified, analysed and reorganised into three branch node categories that were, in turn, used to re-engage participants in deeper dialogic engagement. These branch node categories were developed into an exploratory model of empathy within SMC to also reengage participants in deeper dialogic engagement from their own and others understandings. The chapter then presents participants' responses to this ongoing dialogic engagement of the branch node categories, and the exploratory model of empathy. The chapter concludes with the presentation of respondents' written metaphors of their experiences of empathy, along with a pictorial representation of their models of empathy within SMC. These metaphors acted as an opportunity for respondents to share their final understandings of empathy formed through the iterative dialogical research strategy. These metaphors and participant models were used by the researcher, therefore, to gather final multiple understandings of the nature and function of empathy within SMC.

Within chapter five the preliminary research questions are discussed along with the emergent themes, branch node categories and SMC empathy model that was used to stimulate further dialogue. The discussion follows a similar format to chapter four, focusing on the emergent themes along with the development and structure of the SMC models participants developed.

Using the responses from chapter four, along with the discussion of these findings in light of literature in chapter five, chapter six presents the implications of the findings. These implications are presented from three perspectives: i) the implications for conferencing participants' strategies, ii) the implications for the development and support of empathy within SMC, and iii) the implications for software developers and policy makers. The chapter concludes by discussing the contributions to knowledge, strengths and weaknesses of the study, areas for further research and some final thoughts.

CHAPTER 2.

LITERATURE REVIEW

This literature review presents a logical chain of ideas that is structured into a theoretical foundation for this thesis. These ideas have been utilised in:

1. The development of the rationale for the importance of this study,
2. The development of research questions detailed at the end of this chapter,
3. The selection of the case study contexts,
4. The methodological considerations including the rationale for using a hermeneutic exploratory research strategy, and
5. The selection of the one on one and focus group interview methods.

These ideas include acknowledgement that:

1. Empathy exists,
2. Empathy is a socially constructed and negotiated phenomenon,
3. The nature of empathy has been defined and manifests in a number of ways,
4. The functions of empathy have been defined,
5. Understandings of empathy in distance education identify the existence and importance of empathy, and
6. Further research into empathy is recommended.

2.1 Empathy

The ability to empathise is a psychological foundation of our ability to be social. It enables us to become full members of a society by enabling us to understand other social actors, interpret their actions, and respond to them appropriately (Stueber, 2006). It is also an essential characteristic of socialisation and is acknowledged in the fields of counselling, psychotherapy, and neurology (Pedersen, Crether, & Carlson, 2008; Pivec, 2006).

The primary function of empathy is to help individuals form and maintain social bonds (Preston & de Waal, 2002). It represents one of the basic forms of human expression and has evolved to facilitate the development of social behaviour to the point where Decety and Ickes (2009) believe empathy has been the greatest achievement the mind has gained since consciousness. Without empathy we would be unable to predict, manage, and interact within social communities (Schulkin, 2004). Within the learning context, empathy allows teachers and learners to build and maintain effective teaching and learning relationships (Rogers, 1977; Rogers & Frieberg, 1994). A teacher's ability to be sensitive, attuned and reflective to a student's feelings and emotions is highly advantageous in managing interpersonal teaching and learning relationships (Arnold, 2005).

Historical definitions of empathy have focused on generic abstractions such as "putting oneself in the place of another." These definitions, Preston and de Waal (2002) suggest, have lacked the understanding brought about through neuropsychology and brain imaging. Understandings that include neuropsychology and brain imaging emphasise the role of shared neural representations. It is through the triggering of mirror neurons or the same neurons that would be triggered if we were experiencing the same event. When these representations occur there is a need for mental flexibility, mental regulation and self-awareness. With this regulation and self-awareness an individual is able to engage or disengage the cognitive neural representation processes and the emotional responses that result from the perception of others (Decety & Jackson 2004). If there were a lack of ability to disengage it would lead to cognitive and emotional exhaustion, along with an inability to attend to other cognitive functions (Bandura, 2002; Hodges & Wenger, 1997). There is also the requirement to maintain a sense of whose feelings belong to whom. Without this ability, a sense of identity would be lost, leading to a lack of ability to relate successfully with others (Decety & Jackson 2006).

Containing both cognitive and emotional components, empathy consists of cognitive components that may be experienced as ability to role take or a strong sense of identity with another person's affective state. Emotional empathy may manifest itself in emotional concern or response to a particular drama or experience (Rankin, Kramer, & Miller, 2005). The more interrelated people are the more similar are the representations that are activated.

2.2 Empathy: A socially constructed and negotiated phenomenon

When people build understanding about empathy, or any other social phenomenon, they construct meaning from existing realities in their own mind, integrating their own histories and traditions (Dostal, 2002; Gadamer, 2001). As we need to socially interact with others to be empathic, understanding of empathy is created mutually through negotiation with others before being constructed in one's own mind (Charmaz, 2003; Guba & Lincoln, 1989; Schwandt, 1994; Tedlock, 2003). Given that people perceive phenomena differently, there will, consequently, be multiple perspectives on the nature and function of a particular phenomenon like empathy (Creswell, 2002).

Of relevance to distance education is that understandings are transferred across distance through social interactions between social actors. When understandings travel across distance they are *understood* by social actors at the other end. Knowledge is built through social interaction with others (Richardson & Swan, 2003). Without empathic abilities or limited abilities of social actors to empathise, understandings either cannot traverse distance, or if they can traverse, transference is made more difficult. Over distance, social actors use media such as printed language, telephone or video to *relate* socially with others. This relationship is facilitated both synchronously (occurring at the same time) and asynchronously (separated by time) within the process of interpreting the internal frame of others. It is therefore at either ends of the distance, through the use of these media, that empathic interpretation of others' thoughts, feelings, and understandings occurs (Jonassen, 2000).

To assist in the development of understandings, or meaning making, it is beneficial to develop learning situations that create learner engagement and social interaction that help facilitate empathic interpretation (Wenger, 1998). Learning is improved when social actors can assist others to construct new understandings in a collaborative manner (M. D. Cohen & Levinthal, 1990). The social dynamics that facilitate this activity, social interaction and engagement, are best created through the teacher becoming a *communal architect* of active and engaging learning communities (Woods & Ebersole, 2003). To be a communal architect, a teacher needs to engage empathic abilities to

interpret others accurately so that successful social interaction can be integrated in these and subsequent interactions.

2.3 The nature of empathy and its manifestations

Empathy consists of both conscious and subconscious processes that are internal and personally experienced. In order to explicate these experiences the manifestations of empathy may be able to be used as external indicators of the experience of, or precursor to, empathy occurring. It is believed that engaging research participants in dialogue in relation to these internal and external manifestations of empathy, deeper personal understandings of empathy may be able to be accessed.

Decety and Jackson (2004) note those who experience empathy perceive a sense of similarity between their feelings and those expressed by others. Feelings of *standing in another's shoes* and *thinking like another* have been used to describe the internal states those who empathise have experienced (Jolliffe & Farrington 2004; Mehrabian, 2009; Rogers & Freiberg, 1994). A number of authors note that empathy also manifests in social actors' feelings of relatedness with others' states of feeling. There is agreement among other authors also that empathy is experienced as a deeper sense of relatedness or shared understanding between social actors (see, for example, Brna, 2006; Ickes, 1993; Jabbi, Swart, & Keysers, 2007).

Empathy may be experienced as acts of compassion or helping behaviours. Through being compassionate it is believed social actors may have already engaged empathically with another. The compassion may, therefore, be a form of emotional response to the empathic engagement. Similarly, the act of offering help to others may indicate that empathic perception of others states may have occurred leading to the emotional response of offering help (Darwall, 1998; Ickes, 1993; Woolfolk 1998).

Anderson and Keltner (2002) suggest that empathic engagement may have occurred if there is the presence of salient emotions such as laughter, excitement or fear. This is especially so if these salient emotional expressions appear to have followed similar expressions of other social actor/s. If the acts of crying or smiling appear to be replicating those of others then it is believed there may have been some form of

empathic engagement to have occurred. The interpretation of the internal state of another appears to have led to the emotional response in the second social actor (Preston & de Waal, 2002).

The spontaneous spread of emotion that can be experienced in social engagement is another manifestation that may indicate that empathy may have occurred. Emotional contagion is believed to indicate that empathic interpretation has passed from one to another in quick succession. The spontaneous spread of emotion, several authors believe, may indicate that empathic engagement and interpretation is moving around the group (see Darwall, 1998; Preston & de Waal, 2002; Ranking, Kramer, & Miller, 2005). Through the rapid interpretation of another's emotional state, it appears social actors may be able to quickly empathise with that state responding with atomicity. This may in turn enable social actors to show solidarity with the group thus strengthening the bond within the group. This function of empathy is discussed later.

An obvious way empathy manifests itself is in speech, through not only what is said, but the tonal inflections and other verbal features in speech. Much can be interpreted from other social actors about the excitement of an issue when it is accompanied by quicker than normal speech and higher tone of voice (see Baillie, 1996; Pedersen et al., 2008; Rankin et al., 2005; Rizzolatti, 2005; Rogers, 1976).

Non-verbal expressions such as facial expressions, body language, emoticons and written language features may also indicate the existence of empathic social interaction. For example, viewing facial expressions triggers similar expressions in other social actors' own face. This response to another's facial expression can be stimulated in the absence of experiencing the stimulus that triggered the initial facial expression in the first person. It is proposed that people *catch* the emotions of others through motor mimicry which produces a simultaneous matching emotional response (Decety & Jackson 2006). Other external indicators such as the use of emoticons in text chat environments and hand gestures all serve to help an individual communicate their internal states to others. It is through these communication indicators that other social actors interpret the internal frame of another. That is not to say that if emoticons and body language features exist in dialogue empathy therefore exists. These features may

be external indicators of the existence of empathy and may prove beneficial in probing personal experiences of these events to explore the possible personal experiences of SMC participants (Decety & Jackson, 2006; Rankin et al., 2005; Pedersen et al., 2008).

Social actors may also experience empathy as acts of perspective taking or role taking. Attempting to gain a better understanding of another through taking their point of view, thinking from their perspective, or taking their role in a situation are ways some researchers suggest empathy can be experienced (see Bandura, 2002; Charman, 2002; Decety & Jackson, 2006; Pedersen et al., 2008; Preston & de Waal, 2002; Rankin et al., 2005; Rogers, 1976). For example, imagining what it would be like to eat a putrid meal stimulates similar neurons as those that would be stimulated if one were to eat the putrid meal themselves (Jabbi et al., 2007). Taking the perspective or role of others, therefore, is an active strategy social actors use to empathically interpret the internal frame of others.

The act of making choices of what to attend to in social engagements may also be an indicator of the existence of empathic response modulation. As Bandura (2002) suggests, social actors not only need to engage in the process of empathic interpretation and emotional response to that interpretation, they also need to disengage from that process. If social actors are aware of making these choices it may be indicative of empathic modulation occurring. If social actors experience an automaticity of interpreting others without the need to take their perspective or role, then that event may also indicate the existence of empathy (see Anderson & Keltner, 2002; Decety & Jackson, 2006; Preston & de Waal, 2002)

Within the development of this thesis, a wide range of literature has been reviewed to identify the nature of empathy and how it manifests in social interactions. Table 2.1 groups these manifestations into categories believed to be researchable in the SMC environment. Some of these categories involve the expression of other social actors in a number of forms including compassionate helping behaviours, salient emotions, verbal and non-verbal expression, and vocal tones. Empathy has also been shown to be experienced in what others do, such as the completion of a task for others without request.

Table 2.1 Manifestations of empathy

Empathy Manifests:	Research Support
As feelings of <i>standing in another's shoes, thinking like another.</i>	Brna, 2006; Ickes, 1993; Jabbi et al., 2007; Jolliffe & Farrington, 2004; Mehrabian, 2009; Pedersen et al., 2008; Pivec, 2006; Rogers, 1959, 1977; Rogers & Freiberg, 1994.
As acts of compassionate helping behaviours.	Darwall, 1998; Ickes, 1993; Woolfolk, 1998.
Through salient emotions (<i>noticeable striking</i>).	Anderson & Keltner, 2002; Perry et al., 2001; Preston & de Waal, 2002.
In the spontaneous spread of emotion (emotional contagion).	Darwall, 1998; Preston & de Waal, 2002; Rankin, Kramer, & Miller, 2005.
Through verbal communication (speech, auditory gestures).	Baillie, 1996; Pedersen et al., 2008; Rankin et al., 2005; Rizzolatti, 2005; Rogers, 1976.
Through non-verbal expression (facial expression, body gestures).	Baillie, 1996; Decety & Jackson, 2006; Rankin et al., 2005; Pedersen et al., 2008; Rogers, 1976; Woolfolk, 1998.
Through actions such as humour, compliment, encouragement or offer of additional support.	Baillie, 1996; Jabbi et al., 2007; Park & Bonk, 2007.
In perspective taking, or role taking.	Bandura, 2002; Charman, 2002; Decety & Jackson, 2006; Jabbi et al., 2007; Pedersen et al., 2008; Preston & de Waal, 2002; Rankin et al., 2005; Rogers, 1976.
In feelings of familiarity with the target.	Anderson & Keltner, 2002; Pedersen et al., 2008; Preston & de Waal, 2002.
In the act of making choices as to what to attend to.	Bandura, 2002; Pedersen et al., 2008; Rogers, 1977.
Through automaticity of cognitive processing when interpreting others.	Anderson & Keltner, 2002; Decety & Jackson, 2006; Preston & de Waal, 2002.

The categories established and presented in Table 2.1 have been refined using the criteria listed below to identify those that were more relevant to the intent and scope of this investigation. These criteria included those categories which:

1. Are expected to exist with salience in SMC,
2. Are relevant to qualitative exploratory research,
3. Are researchable in the SMC environment,
4. Are relevant to gathering the understandings of research participants,
5. Are of relevance to learning and teaching, and

6. Have the depth and breadth of researcher support (to enable sufficient subsequent critical literature engagement).

Using these criteria, several categories in relation to the manifestations of empathy were identified as particularly relevant to the scope of this investigation and thus of relevance to this thesis. The purpose of the research questions was to guide the exploration of deep personal understandings of empathy. These criteria and this strategy were used in the development of two sub-questions in section 2.8 that were used for gathering participants' understandings of the nature of empathy within SMC. These categories included:

1. How participants experience compassion, encouragement, and helping behaviours through verbal communication, non-verbal expressions, and emotions,
2. How participants experience the spontaneous spread of emotion,

Additional to these two main categories of interest, it became evident from the literature review, the influence of stress and workload on empathy. Stress and workload appeared as significant factors in empathic engagement and therefore warranted exploration within the context of this investigation (Baillie, 1996; Halpern, 2003). Therefore an additional focus was included within interest category one as follows:

3. How participants experience empathy in relation to technical problems, stress and workload.

Manifestations of empathy not included in the initial research questions, such as the feelings of familiarity with others and feelings of standing in others shoes were targeted within the deeper exploration of participants' experiences as part of the iterative dialogic engagement of research participants within the overall research strategy.

How participants experience compassion, encouragement and helping behaviours is particularly relevant to learning and teaching, as these are at the core of developing a supportive learning and teaching relationship (Rogers, 1977). Also of interest is how

empathy is experienced through verbal communication, non-verbal expressions and emotions, as these modes of communication are prevalent in learning and teaching. The spontaneity of learning and teaching is often produced by the spread of emotion and is therefore worthy of investigation. Finally, how participants experience potentially inhibitory factors such as technical problems, stress, and workload needs to be considered as there is the constant presence of these factors in learning and teaching environments. Exploring *how* participants experience a social reality is a relevant qualitative inquiry (Gubrium & Holstein, 2003).

2.4 The functions of empathy

A similar process was undertaken to review and categorise the functions of empathy. Again the focus was on identifying the functions of empathy to enable the engagement of research participants in deeper dialogue in relation to their understandings their experiences of the functions of empathy.

Empathy has an overarching social function in relation to the creation of a non-threatening and supportive social environment (Feng, Lazar, & Preece, 2004). Although the ability to empathise varies from person to person, it is through the collective empathic engagement of individuals within the group that a supportive and non-threatening environment is established. Through the empathic interaction of individuals groups are able to establish effective communities of learners. It is a key component of emotional intelligence where individuals are able to connect deeply with others (Hall, 2008).

An important function of empathy identified in the literature was the facilitation of a range of interaction competencies that enhance a social actor's ability to build and sustain social bonds (Anderson & Keltner, 2002; Preston & de Waal, 2002). This is achieved through social actors' engagement of empathic skills to interpret others' intentions and motivations. Empathy provides the motivation to individuals to address the needs of others in the social group in which one is interacting. It helps develop bonds of affiliation and affection that, in turn, support long term social commitment. Empathy within this engagement is self-reinforcing for both the responder and the recipient. It creates the opportunity for social relationships to be enjoyable and

meaningful and that are more fulfilling than any material benefits the relationship may provide (Rankin, Kramer, & Miller, 2005).

Empathy facilitates the ability to understand the thoughts and feelings of others and allows one to coordinate and respond to others appropriately. The competence with which another frames or composes a response in light of understanding and appreciation of the other is a key element of social relatedness. The ability to coordinate ones responses given these empathic interpretations is a function of empathy in social interactions (Hall & Hall, 2009). The coordination of the actions of individuals within a group is central to the overall effective functioning of a group. Social groups have generally common goals, motivations and desires. These can and do change over time as a result of external influence and changes in internal group social dynamics. For the group to continue to be cohesive, coordination of actions of individuals within the group is required. Empathy is a social relational mechanism that assists in the coordination of individual actions that contribute to this social cohesion (Anderson & Keltner, 2002; Halpern, 2003; Stueber, 2006).

Through the interpretation of others there is also the opportunity for individuals to respond more effectively, either one on one, or in group situations (De Vignemont & Singer, 2006). Within any social group, opportunities exist for the elevation in social status when opportunities arise. Being aware of the internal frame of others can provide individuals with a key advantage over other members of the social group to respond more rapidly and effectively to these opportunities. A key function of empathy within social groups is not necessarily merely for the benefit of the effectiveness of the overall group functioning but also in the success of the individuals within that group (Acaster, 2000; Anderson & Keltner, 2002; Feng et al., 2004; Jabbi et al., 2007).

Interpretation also enables individuals to respond to stimulus, alarm or opportunity without personally experiencing it (Jabbi et al., 2007). It is this mechanism that supports basic behaviours that assist in survival (e.g., alarm, social facilitation, mother-infant responsiveness, and the modelling of competitors and predators). The modelling of competitors and predators has been crucial for our survival and reproductive success when we look for possible evolutionary roots of empathy. If alarm is sensed in others, through empathic interpretation, one can move away from that danger without having to

personally experience the danger. The more attuned the empathic communication within the group, the greater survival chances of the group as a whole. Therefore the alarm of one individual can save others (Preston & de Waal, 2002).

Being empathic may also serve to signal to other members of the group solidarity with the group. Being empathic may be a signal to the group that you are or wish to be a member of that group. Feeling for others not only requires the ability to interpret others internal frame it also involves the requirement to make a choice of attending to those interpretations and also selecting and acting on appropriate responses. Undertaking these responses may indicate not only an ability to be able to relate to the group but also a willingness to commit the energy and motivation to do so. In being prepared to do so, the individual is able to signal solidarity to the group or an individual in the group (Anderson & Keltner, 2002; Halpern, 2003). The more similar the neural representations are between the individual and the members of the group the more accurate interpretations of others' emotional states can be. This greater similarity leads to a greater likelihood of an accepted emotional response by the group (Preston & de Waal, 2002). The signalling of solidarity by the individual develops a greater sense of trust and belonging within and between members (Constantino, 2002; Watson, 2003).

Another significant function of empathy is the ability of individuals to be able to predict the behaviours, intentions, and motivations of others. Through the ability to predict others, individuals are able to modify their own behaviours or responses to either align socially with the group or even promote themselves to a higher social status within the group. Individuals may also be able to avoid social rejection by correctly interpreting others and responding appropriately (De Vignemont & Singer 2006).

Empathy also allows individuals to interpret others during dialogic engagement. If this interpretation were not to occur individuals would not be able to adjust to the subtleties of human dialogue and modulate their language and speech responses to allow a flow of dialogic interaction. Subtle cues such as a pause or inflection in the voice provide individuals the ability to know when it is their turn to speak. Several authors suggest that without empathic interpretation of others the modulation of language or speech would be near impossible to manage (see Anderson & Keltner, 2002; De Vignemont & Singer, 2006; Park & Bonk, 2007; Rizzolatti, 2005; Rogers, 1976).

There is also a belief that a function of empathy is to encourage reciprocal altruism. Through the empathic engagement with others there is a deep seated belief in potential social benefits from a developing social relationship. The individual believes that through showing solidarity to the group and developing a social bond there may be a reciprocal altruistic response from the group toward them as an individual in return (Constantino, 2002). Prior to this process of empathic engagement comes a complex cost/benefit analysis. The individual makes an analysis of the effectiveness of this engagement in relation to their long and short term goals. If it is found that the cost outweighs the benefits then this can affect the motivation to engage empathically. If the benefit outweighs the cost then the individual is likely to engage empathically within the group until the benefit is lost (Preston & de Waal, 2002).

An additional function of empathy within social interaction noted by Rogers and Freiberg (1994) is the development of self-esteem and self-concept. The ability to successfully relate to others not only involves relational mechanisms such as empathy but it also involves a sense of self, a confidence in who one is and their place within a social group. In order to establish this place, or self-concept, one must continuously interact with others, socially interpreting their internal frame and noting your place in relation to it. Self-concept therefore acts as a mechanism within empathy and is also developed through empathic engagement. The two are inexorably linked (Anderson & Keltner, 2002; Rogers & Freiberg, 1994).

Table 2.2 outlines the functions of empathy within social interaction identified as a result of this review

Table 2.2 The functions of empathy

Functions of Empathy:	Research Support
Creates a non-threatening and supportive environment.	Feng et al., 2005; Halpern, 2003; Rogers, 1976.
Forms and maintains social bonds and assists in inclusive fitness.	Anderson & Keltner, 2002; D. Cohen, 1991; Pivec, 2006; Preston & de Waal, 2002; Stueber, 2006; Woolfolk, 1998.
Co-ordinates the actions of individuals.	Anderson & Keltner, 2002; Halpern, 2003; Stueber, 2006.
Allows individuals to respond more effectively within groups to opportunities.	Acaster, 2000; Anderson & Keltner, 2002; De Vignemont & Singer, 2006; Feng et al., 2004; Jabbi et al., 2007.
Allows individuals to respond to alarm/stimulus without personally experiencing threat/stimulus.	Anderson & Keltner, 2002; Jabbi et al., 2007.
Allows individuals to signal solidarity to the group or individual.	Anderson & Keltner, 2002; Halpern, 2003.
Enables individuals to predict the behaviour, intentions, and motivations of others.	Acaster, 2000; Anderson & Keltner, 2002; De Vignemont & Singer, 2006; Halpern, 2003; Haynes & Avery, 1979.
Language and speech mechanism modulator.	Anderson & Keltner, 2002; De Vignemont & Singer, 2006; Park & Bonk, 2007; Rizzolatti, 2005; Rogers, 1976.
Encourages reciprocal altruism.	Constantino, 2002.
Increases esteem and self-concept.	Anderson & Keltner, 2002; Rogers & Freiberg, 1994.

The functions of empathy outlined in Table 2.2 were also refined using the same criteria as in section 2.3. The subsequent categories identified formed the foundation for the development of sub-questions related to gaining participants' experiences and understandings of how they experienced the functions of empathy within SMC. The functions of empathy defined as relevant to this study included:

1. The creation of a supportive environment,
2. The strengthening of a bond between themselves and others,
3. An ability to predict the behaviours and/or attitudes of others,
4. A sense of belonging to a group or online community, and
5. Cues that can be used to modulate language dialogue.

2.5 Significant research contributions closely aligned to this thesis

Park and Bonk's (2007) research focused on learner experiences of real time communication mediated by the Adobe Connect conferencing software. This software was utilised within the current study. Park and Bonk's research also incorporated combined conferencing media in an exploration of the multimedia nature of the conferencing context. Their research utilised interview methods to gather data where respondents reported the value of spontaneous feedback, meaningful interactions and multiple perspectives in the feedback given. Challenges identified included perceived time pressures and interactions mainly focused on task related issues. The research suggested that despite the potential of synchronous communication increasing individual participation, scant research had been conducted in this area. Although this research did not specifically explore empathy within synchronous online communication, the findings are expected to make a contribution to the discussion of the findings in respect to the same conferencing tool.

In an exploration of the patterns of empathy within online communication, Pfeil and Zaphiris (2007, 2009) and Pfeil et al. (2011) investigated empathy within an online community for older people (SeniorNet). Qualitative analysis of asynchronous communication investigated the influence that the mediating technology had on the phenomenon of empathy. The research focused on how empathy is expressed and facilitated in online communication. Of special interest within these investigations were the patterns of empathy within asynchronous collaborations. Although the research was useful for reviewing empathy in virtual learning environments its relevance was limited to the context under investigation and did not relate to secondary aged students or synchronous conferencing.

Research by Preece (2005), in relation to empathy online, also supported that empathy occurs online within several findings that are expected to be of specific interest to the present study. The findings of this research also assisted in the identification of factors that may affect empathy online, including the presence of the teacher, presence of females, pace of interaction, mode of expression and how participants reveal themselves in synchronous communities. Preece also supports a rationale for future research to pay

greater attention to social issues such as empathic communication as we move to more technically advanced computer virtual environments.

The current study has also been influenced by the work of O'Connor and Madge (2001) with respect to the potential of the internet using SMC as a valuable methodological tool for social science research. The findings provided useful background to the use of virtual synchronous interviews, which were a feature of the research. Relevant findings in relation to interview design, development of rapport, and the virtual interface were integrated into the current research design. Although O'Connor and Madge's research concludes that conferencing software holds great potential for synchronous online interviewing, the use of this technology needs to be combined with the sensitive ethical handling of the research process and data to overcome the problems inherent in interviewing when physically distant from the respondents.

The literature presented so far has been reviewed from a cross section of understandings of empathy as a relational mechanism. Section 2.6 situates three understandings of empathy within the distance education literature that have influenced this study, including transactional distance, social presence, and cognitive distance. These understandings, along with the literature related to the nature and function of empathy, have influenced the two preliminary research questions in section 2.8. The first of these research questions focuses on how synchronous multimedia conferencing participants in the secondary school sector experience the manifestations of empathy. The second research question looks more deeply into empathy as a relational mechanism focusing on how participants experience the functions or roles of empathy within SMC.

2.6 Empathy in distance education

Numerous researchers have identified the importance of empathy within distance education and identified the role it takes within a range of distance learning models. These include: empathy as a *concept* within social presence (Hughes et al., 2007), an *element* of absorptive capacity (M. D. Cohen & Levinthal, 1990), a *social-relational mechanism* which affects the social dynamics of technology-mediated environments (Kehrwald, 2007, 2008), a *construct* within cognitive distance (Nooteboom, 2004, 2008; Petuzzelli, Albino, & Carbonara, 2007), a *significant factor* in online social interaction

(Holmberg, 2003), and a *phenomenon* within online textual communities (Preece, 2005).

Exploratory research should not be based on preconceived models or understandings; however, it is influenced by them. It is impossible to start with a blank slate as preconceptions influence interpretations (Denzin & Lincoln, 2003). It is, therefore, important to acknowledge the possible influence of preconceived understandings of empathy within distance learning. A brief discussion of three prominent understandings of empathy in distance education acknowledges the influence of these understandings. There is also an acknowledgement of influence from my own histories and traditions as the researcher when viewing from within a hermeneutic lens (Dostal, 2002). The understandings of distance education that are believed to have influenced this research and that incorporate empathy within their structure include transactional distance, social presence, and cognitive distance.

2.6.1 *Transactional distance*

Within transactional distance theory, there is a psychological and communications space or chasm to be crossed (Moore, 1993). This distance is transactional and does not represent a physical distance. The distance itself is a pedagogical rather than physical phenomenon (Dron, 2007; Saba, 2003). It is influenced by a relationship between structure and dialogue – the greater the structure, organisation and external control, the greater the transactional distance. Alternatively, the greater the dialogue or communication, the lesser is the transactional distance (Dron, 2007; Pena-Schaff & Nicholls, 2004). Holmberg (2003) believes Moore's (1993) model of transactional distance is a generally descriptive one. It attempts to describe and understand the concept of distance in distance education. Holmberg's (2003) theory, which encompasses empathy, and is an advance on Moore's, implies a methodological approach. It is an empathy-creating conversational style that leads to increased motivation to learn. This is a more predictive theory able to generate testable hypotheses (Bernath & Vidal, 2007).

2.6.2 Social presence

Social presence theories focus on the distance created by mediating technologies. Social presence emphasises a sense of being with another, particularly in the context of technology-mediated environments (Biocca, Harms, & Burgoon, 2003). It is seen as creating the perception of non-mediation, or the perception of a degree of salience of the other person in the interaction (Kehrwald, 2008). Shin (2002) identifies this as a perception of the other person being a *real person* within mediated communication. Creating social presence and cohesion requires the identification and active facilitation of empathy and concern for other social actors (Hughes et al., 2007). The concept of empathy is proposed as a social-relational mechanism that affects the social dynamics of an online learning environment (Kehrwald, 2007). People experience relationships characterised by social relational constructs and these constructs are within a progression of relations (Kehrwald, 2010a).

2.6.3 Cognitive distance

As one increases the cognitive distance between social actors, the absorptive capacity, or ability to understand others, decreases. As interpersonal understanding decreases, the novelty increases (Petruzzelli, Albino, & Carbonara, 2007). There is a point at which there is an optimal balance between absorptive capacity (understanding others) and novelty (opportunity to learn new things). At this point learning is optimal (Nooteboom, 2004). Absorptive capacity entails the generalised, non-relation specific ability to access the thinking of others – to empathise. Students may experience this through teachers being able to speak their language or being on the same wavelength (Albino, Carbonara, & Petruzzelli, 2008). Absorptive capacity can be increased through an increase in empathy. As an individual increases their empathy (ability to interpret the thoughts and feelings of others), the absorptive capacity increases, thus there is greater capacity to interpret experiences of greater novelty and therefore enhance learning (M. D. Cohen & Levinthal, 1990).

Whilst there is an acknowledgment of empathy as a factor within the understandings of transactional distance, social presence, and cognitive distance, a significant shortcoming of these understandings is that the nature and function of empathy as a social relational mechanism is not made explicit. It is expected that the intent of promoting

understanding of the nature and function of empathy within SMC may illuminate the empathic relational mechanisms involved. As the research is also exploratory in nature there is also the potential for the results of this research to propose models of empathy within SMC (Gibson, 2003). Through the generation of participant models and metaphors of empathy within SMC, there is the potential to make explicit the implicit role empathy has been implicated to take within the understandings of transactional distance, social presence, and cognitive distance in distance education.

2.7 Rationale for this research

Research into the sensitivity to the feelings and emotions of others in distance education is recommended by a number of researchers. This research needs to focus on the area of online collaboration where research is lacking: synchronous or real time collaboration (Caspi & Blau, 2008; Kehrwald, 2007; Preece, 2005). There is also a need for research in this area because questions still remain as to how social actors establish, experience and understand empathic interactions in learning environments using ICTs (Dias et al., 2006).

Empathic interactions may be more challenging for online educational facilitators to establish because of a lack of face to face interaction (Hughes et al., 2007). Exploring how participants experience these proposed challenges may shed light on strategies for mitigating or overcoming them. Because of differences between synchronous multimedia conferencing, asynchronous and face to face interaction, Park and Bonk (2007) suggest further research needs to be undertaken to maximise the benefits of the synchronous communication medium. Literature also suggests research in this area may also realise some of the suggested potentials of the synchronous medium (Johnson, 2006; Shi, Mishra, Bonk, Tan, & Zhao, 2006; Vonderwell & Franklin, 2002). This may be assisted through the development of models and theory in relation to empathy and learning in distance education (Gibson, 2003).

2.8 Research intent and research questions

This research seeks to promote understanding of the nature and function of empathy in synchronous multimedia conferencing. Two research questions aim to stimulate the

development of deeper participant understandings of how they experience empathy within SMC.

Research Question 1: In what ways do synchronous multimedia conferencing participants in the senior secondary school sector experience empathy?

1. How do synchronous multimedia conferencing users experience compassion, encouragement, or helping behaviours from other participants through:
 - a. Verbal communication?
 - b. Non-verbal expression (facial expression, gestures, and actions)?
 - c. Emotions?
2. How do participants experience emotional contagion (spontaneous spread of emotion) within synchronous multimedia conferencing?
3. How do participants experience empathy in respect to the effects of technical problems, stress, and workload within synchronous multimedia conferencing?

Research Question 2: How do participants experience the functions of empathy within synchronous multimedia conferencing?

1. How do participants within synchronous multimedia conferencing experience:
 - a. A supportive environment?
 - b. The strengthening of a bond between themselves and others?
 - c. An ability to predict the behaviours and/or attitudes of others?
 - d. A sense of belonging to a group or online community?
 - e. Cues used to modulate language dialogue?

2.9 Chapter conclusion

The literature reveals converging ideas that highlight the significance of undertaking exploratory research into empathy within synchronous multimedia conferencing. First, empathy plays a significant role in social interaction and learning. Second, synchronous conferencing is an area of technology-enhanced distance education of growing importance and prevalence. The convergence of these two ideas suggests the results of this research have the potential to enhance educational outcomes for SMC participants.

Understandings of distance education that incorporate empathy within their structure do so without a full exploration of the nature and function of empathy as a relational mechanism. This research, therefore, has the potential to illuminate understandings of empathy not only within SMC but also provide possible models of empathy as a relational mechanism within the transactional distance, social presence and cognitive distance understandings. Because research into empathy specifically within SMC has also not been undertaken, a rationale exists for undertaking exploratory research.

CHAPTER 3.

METHODOLOGICAL CONSIDERATIONS

3.1 Assumptions and rationale for the research design

The intent of this investigation was to explore the phenomenon of empathy within synchronous multimedia conferencing (SMC), through participants' interpretations of *how* they experience this phenomenon in the secondary school sector. Two general research questions were the foci of this investigation:

Research Question 1: How do synchronous multimedia conferencing participants in the secondary school sector experience the manifestations of empathy?

Research Question 2: How do such participants experience the functions of empathy within SMC?

3.1.1 *Theoretical underpinnings*

Exploring and interpreting participant experiential understandings aligns with a philosophy, strategies and intentions of an interpretive research paradigm. The interpretive paradigm is based on a philosophy where subjective understandings are obtained by accessing the ideas and experiences of participants. Within this investigation, understandings have been informed from a hermeneutic perspective. Within this perspective, understandings are in constant movement between partial and whole and cannot be interpreted without reference to the context in which they are constructed (Byrne-Armstrong, Higgs, & Horsfall, 1991).

The application of hermeneutics within this research is informed by the work of Gadamer (1975, 2001), who argues for an interpretation of lived experience that emphasises the evolution of meaning (Dostal, 2002; Gadamer, 2001). Gadamer's hermeneutics also emphasises that understanding and interpretation of *texts* (or language) is part of total human experience of the world (Gadamer, 1975). Within a dialogic interplay between the researcher and research participants, shared meanings are fused. During this process interpretations are informed by culture, tradition, and the

context in which they are developed. The shared meanings are also never final; they are always temporary. The development of understandings also emphasises a circularity referred to as the hermeneutic circle (Bonterkoe, 1996; Dilthey & Joshuaon, 1972; Ferraris, 1996).

Understandings of empathy constructed by participants within this research should be seen as states caught in on-going formation, rather than as a fixed reality. Through cyclical engagements with the phenomena, participants have the opportunity to draw forward their pre-existing knowledge from prior experiences. As this occurs, their understandings become further enriched from new evolving perspectives. Participants' pre-conceptions of empathy engage with other participants' interpretations, prompting the emergence of new understandings within an interdependent and co-formative relationship. Through the use of an iterative dialogical research strategy, the histories, traditions and current understandings of the participants and researcher merge over time (Bonterkoe, 1996; M. Z. Cohen et al., 2000).

Interpreted from within the perspective of the hermeneutic circle, understandings are developed from individual explanations based on participant interpretation of their own lived experiences. These understandings have then been exposed to alternative discourses through interview research techniques and in some cases have encountered resistance. Cycles of interpretation and re-interpretation built into the research strategy meant that understandings were in perpetual transition, constantly challenged by alternative interpretations and discourses made from alternative stances. That is to say, understandings of the participants were exposed to the opportunity to evolve and develop new explanations from the interpretations of others (Bonterkoe, 1996; Calder & Brown, 2011; Herda, 1999; Stapleton, 1994).

Rather than provide descriptions of participant lived experience, as in phenomenology, this research sought to interpret that experience via 'text' within the language of SMC participants (van Manen, 1990). Exploring interpretations of the phenomenon produced rich textual (*subjective*) perspectives of participants' tacit understandings. Through shared participant and researcher interrogation of these experiences, within an iterative dialogic process, a deeper understanding of the meaning of that experience was exposed. The process involved cyclical, layered reflection, which gave rise to an

increasingly deeper and richer descriptive language that, in turn, enabled the co-construction of understandings within the hermeneutic circle (Bonterkoe, 1996; Packer & Addison, 1989; van Manen, 1990).

In order to acknowledge the complexity of the experiences of participants, the researcher sought to understand the phenomenon in the same way as the participants (Schwandt, 1994). These understandings (*always only an interpretation of a participant's own interpretations*) were achieved in two ways. First, through a repeated interview research technique, the participants and the researcher were able to revisit their understandings in an on-going spiralling process. The second strategy involved the use of synchronous multimedia conferencing as the interview medium. This enabled the researcher to experience the phenomenon in a similar way as participants experienced their online classes, thus potentially sharing a similar lived experience and understandings of the phenomenon (Seidman, 2006).

Owing to a lack of research focused on empathy in SMC, the research was also exploratory. Within the research strategy at pre-determined stages of the research, participants were given the opportunity to express their perceptions, interpretations and understandings of empathy without the influence of others. The purpose of this strategy was to allow the free expression of participant lived experience (Fontana & Frey, 2003).

The study did not attempt to prove a hypothesis. It was guided by an interest in promoting understanding of empathy within SMC through the construction, reconstruction and negotiation of shared understandings. After the collection of understandings of empathy in SMC, data were coded using a strategic coding approach from which a number of significant themes were identified. These then formed the focus of a hermeneutic analysis of how participants experience the nature and function of empathy within SMC (Baillie, 1996; Seidman, 2006).

As participant and researcher meanings and understandings are subjective and influenced by beliefs and experiences, they are inevitably value laden. There can be no total objectivity in these understandings because they are interpreted within individual experience. Rather than eliminate or deny subjective interpretations, the research has sought to acknowledge and account for them. Consequently, concepts such as

credibility, dependability, transferability and confirmability have been used to describe the quality of the research as they are of more relevance than the concepts of validity and reliability (see Denzin & Lincoln, 2003).

3.2 Outline of research design

A case study design involving two cases was utilised for this investigation. Each of the two case studies involved an online class of students and their teacher. Each case study consisted of an exploration of participants' understandings of empathy within similar synchronous multimedia conferencing online classes. Case study classes with experienced online teachers were selected so as to access contexts likely to contain empathic interactions. Two case study groups were selected as opposed to a single case to gather a greater breadth and richness in the data. The number of cases was limited to two due to the logistical constraints of conducting multiple one on one and focus group interviews. The use of two case studies also established greater confidence in obtaining sufficient data for data coding and later analysis (Yin, 2003a).

Guided by the work of Yin (2003b) and Bassey (1999), case study methodology has been applied to this research as it enabled the investigation of a contemporary phenomenon within its real life context. Case study merges with its context in a socially interactive process in which the researcher extracts the richness of the case. It focuses on contemporary issues that develop how or why questions when there is little control over a phenomenon. Within case study the objective is to collect and analyse data fairly and present a compelling report. The case study is also suitable for exploratory research producing holistic naturalistic understandings. Through iterative research strategies the methodology can use a guided conversation or dialogue that follows a particular line of inquiry (Stake, 1994, 2003).

There are, however, limitations with the use of a case methodology including the potential of less rigour than other strategies. There are also issues of research bias and the lack of ability to generalise. As Bassey (1999) notes, it offers fuzzy generalised prediction from empirical inquiry. The generalisation is about judgement rather than calculation, offering possibilities not certainties. Generalisations are to a theoretical proposition not a population.

Although more extensive resources were required, two case study investigations were used to enhance the guarantee, robustness and compelling nature of the data generated (Bassey, 1999; Yin, 2003a, 2003b). Purposeful selection of participants allowed access to information-rich respondent groups for study. Selection processes utilising pre-selection criteria and non-random selection are consistent with interpretive paradigm research (Denzin & Lincoln, 2000). The case studies involved two SMC online classes studying year 13 National Certificate in Educational Achievement. Case Study 1 participants were studying Level 3 New Zealand History and consisted of four female students, two male students and the teacher. Case Study 2 participants were studying Level 3 Art History and consisted of three female students, four male students and the teacher. Participants experienced repeated interviews to achieve saturation of data where new ideas were significantly reduced by the end of the iterative strategy and were checked through a final respondent validation process (Seale, 1999).

The case studies involved online distance learning classes that used Adobe® Connect™ as their conferencing medium. Due to the technical challenges of individual machine configurations, both case studies used a parallel audio conference set up to handle the audio as part of their conferencing experience. That is, each class used the Adobe software for all visual, desktop sharing, annotation and text chat capabilities and teleconference call for the audio component of the conferencing. The configuration of the Adobe web presence was predominantly set up with several ‘windows’ or pods serving different purposes. On most occasions, in both case studies, participants had joint access rights to pods to enable status indication, text chatting both to the class generally and other participants privately, shared annotation over PowerPoint, maps, paintings and other digital content, online quiz, file sharing, and whiteboard interaction. There was limited capability of either class to use webcam due to technical constraints and the lack of webcam facilities at other locations so there was almost no video interaction undertaken until toward the end of the course. Appendix X details a screen capture of the set up for the level 3 Art History class and indicates the typical visual and digital interactive configuration of the Adobe software for both case studies.

As both case studies were Level 3 NCEA classes the students who had enrolled in these online courses made a selected option which was not part of a compulsory programme.

The predominant motivation for the students to enrol in these particular courses was that they were of specific interest to them and this course was not offered to them in their own school. All the students were, therefore, expected to have started the respective courses with a relatively high degree of motivation as it was a course of personal choice.

The conduct of the online lessons was similar for both classes with the beginning of the class usually taken up with online socialisation and *checking in* as each participant arrived in the online virtual classroom. This was often extended as additional time was frequently required to establish if given students would be there that day or participants overcame technical challenges logging on. The objective for the day was then usually outlined followed usually by questioning by the teacher to establish how everyone was going with respect to previous work or challenges. The content of the lesson was almost always supported through the discussion and interaction with a visual PowerPoint, maps, printed text, paintings or photographs. Sharing of online websites was also utilised. During this interaction students were given editing and interaction rights to annotate over paintings and diagrams to make points, change their status indicators, or send text messages to the group, the teacher, or other participants privately.

The objective of the teacher within both online classes was to develop online pedagogies that supported student engagement. The focus of this engagement was with the content through dialogue with the teacher and other participants. Each of the classes held two one hour online sessions per week to enable greater opportunity for participants to interact with the content, the teacher and the other students. Holding only one session per week the teachers' found limited the amount of synchronous interaction the students could engage in when there was sickness, sports days, or other school related events.

The online interviews as part of the research tried to replicate these online classroom sessions by presenting questions within a similar format. A similar Adobe Connect and parallel audio conference setup was used to ensure respondents were familiar with the interview environment and also to provide a more familiar context to refer to when explicating their understandings. Interview schedules were converted to PowerPoint and uploaded into the Adobe online environment and shared with participants as the interviews proceeded. Respondents also had access to status indicators and the text chat

environment. Within the final one on one interview participants also used the whiteboard capability to draw and annotate their own model of their understandings of empathy within SMC (see Appendix X).

Figure 3.1 summarises the overall data collection procedure, coding strategy, sequencing, timing, and duration of phases within the research. The research involved four distinct periods of data collection involving four separate interview strategies split into two main phases. The data obtained from one method contributed to the dialogic engagement of participants with the next. Within Phase 1, an initial one on one interview was followed by a focus group interview. Data gathered from these two Phase 1 interviews then underwent data coding using themes or issues of similar meaning. These themes were then integrated into interview schedules for Phase 2 of the study. Phase 2 involved a second series of focus group interviews followed by one on one interviews. Phase 2 provided the researcher and participants the opportunity to re-engage with the themes emerging from Phase 1. Data were also gathered from a research diary and coded as part of the data coding process. The objective was to seek confirmation/refutation and extension of these ideas as part of a hermeneutic circle approach. This process enabled the researcher and participants to revisit the areas of interest contained within the research questions and the themes identified within the participants' initial interviews. The iterative research strategy enabled the construction, reconstruction, and negotiation of understandings, during each sub-phase interview, between the interviews, and throughout the duration of the data gathering process (Gillham, 2005).

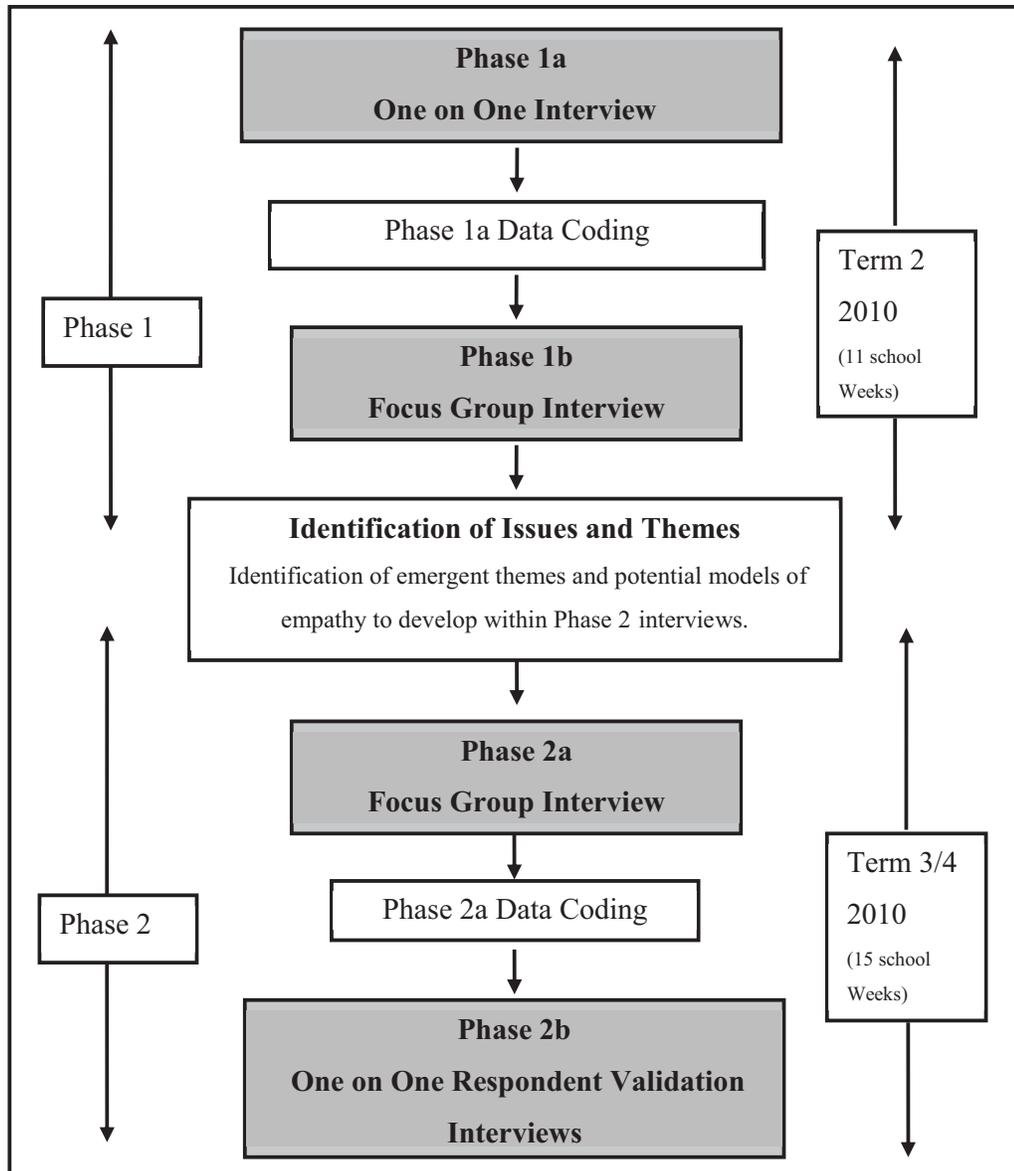


Figure 3.1 Overall data gathering approach

Figures 3.2 and 3.3 outline in greater detail, the specific linkages between research methods, data coding and coding analysis techniques for Phase 1 and 2. Placement of the data coding process utilising the NVivo® software is also indicated. The NVivo® software enabled organisation of a large quantity of qualitative data and subsequent coding of that data into increasingly finer grained data sets (Ozkan, 2004; Stacey & Gerbic, 2003).

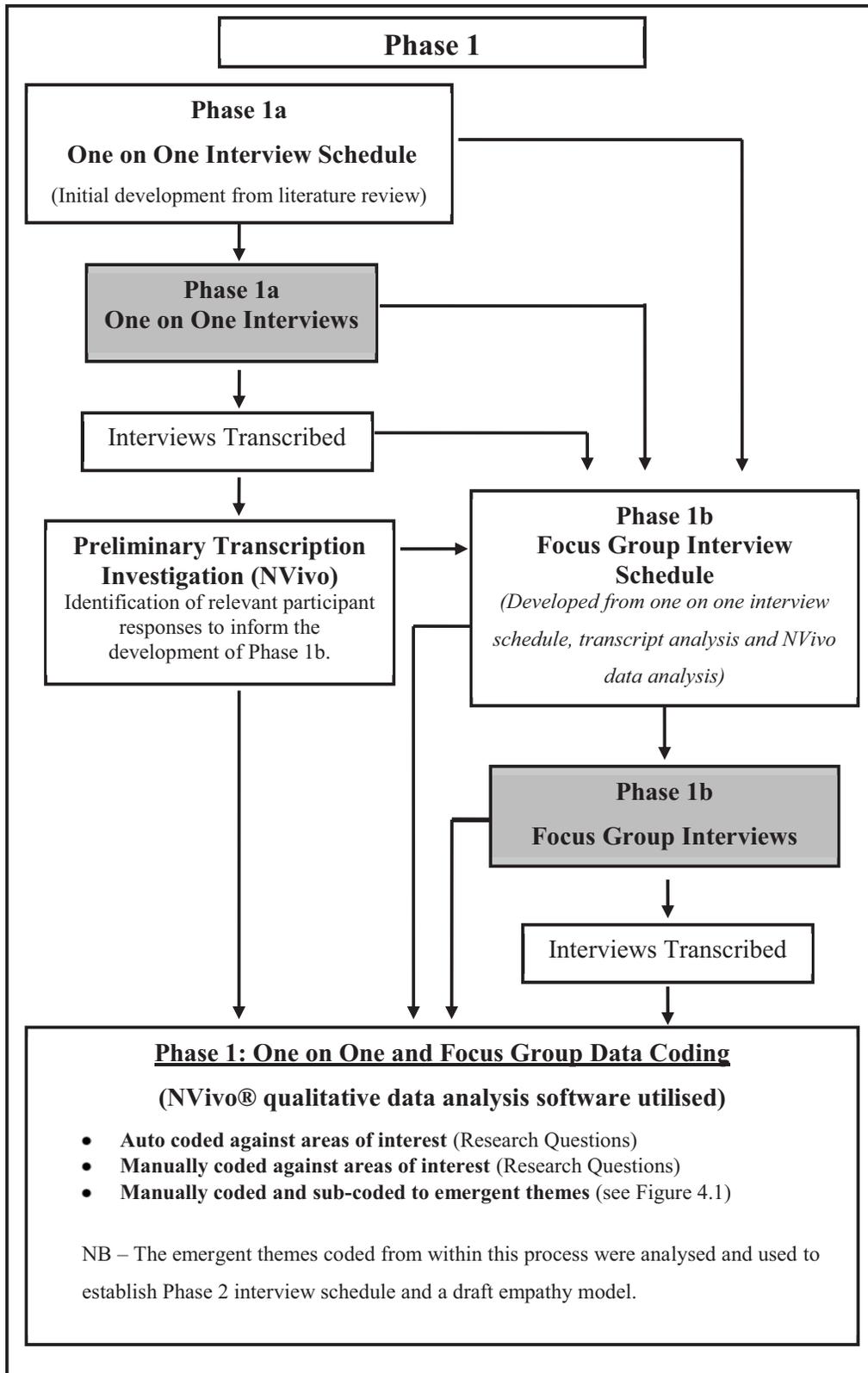


Figure 3.2 Phase 1: Data gathering approach

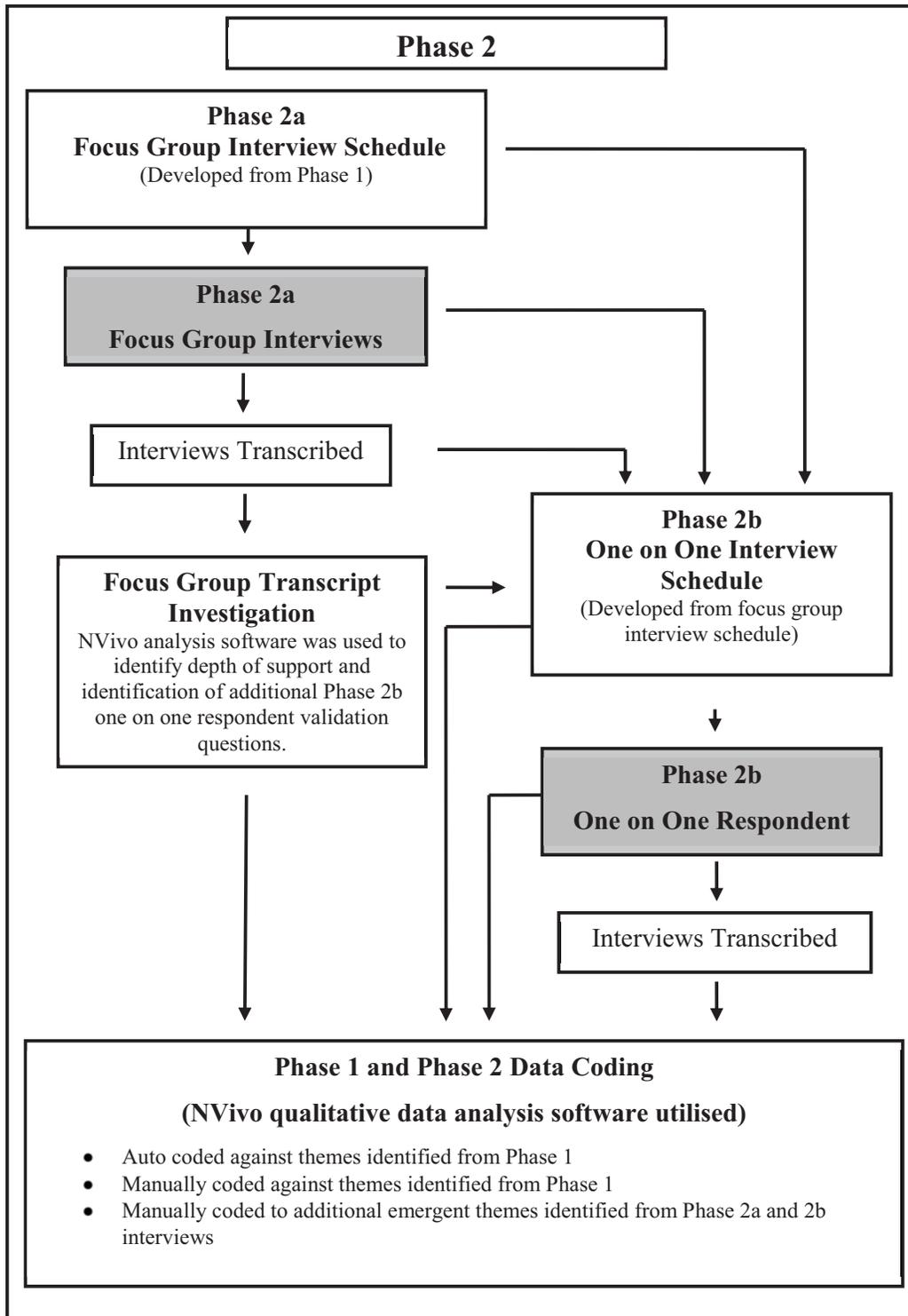


Figure 3.3 Phase 2: Data gathering approach

As opposed to the sequence of the one on one interview followed by focus group interviews characteristic of Phase 1, the second focus group interview (Phase 2a) was conducted before the one on one interview within Phase 2 of the research. This research

strategy was adopted to facilitate the collective discussion of the themes emerging from Phase 1, prior to final independent respondent validation of the findings in Phase 2b (Hancock & Algozzine, 2006). Holding an initial one on one interview was useful in the generation of a wide range of initial exploratory data. This dataset was in turn used to engage participants in dialogue within the first focus group interview. Following the first focus group interview, a second focus group interview further developed participant familiarity and group interaction creating more fruitful discussion and development of themes. A one on one interview method was selected for the final respondent validation interview to provide participants the opportunity to respond without other participant influence (Bassey, 1999).

All the interviews, one on one and focus group, were completed using online Synchronous Multimedia Conferencing (SMC) as the interview medium. These interviews used the same Adobe Connect® conferencing software and parallel audio conference teleconference technology and techniques as the case study participants used in their online classes. Focus group interviews involved the same procedure and software within a multipoint distributed interviewee setup.

Using interview methods enabled the dialogic exploration and gathering of participant narratives (stories) of their lived experiences. Using interview methods also facilitated an opportunity to develop a dialogic relationship with the participants individually in one on one interviews and collectively in focus groups. Through this dialogic engagement, participants were able to explore the meanings of their experience through reflection and share that in their own words and explanations (Ajjawi & Higgs, 2007).

The data obtained from the two interview methods allowed for alternative perspectives of the same phenomenon of empathy. The one on one and focus group interview methods generated data both from an individual perspective and a collective group perspective (L. Cohen, Manion, & Morrison, 2000; Creswell, 2002). These complementary interview methods provided a greater breadth and depth of data than the use of a single method. The interview/focus group, and then focus group/interview technique, strengthened the credibility, dependability, and confirmability of the data through re-engagement of ideas both individually and collectively. The iterative, dialogical and linked data collection strategy, combined with data gathered from two

case studies also provided the opportunity for triangulation of the qualitative interpretations within the later NVivo® data coding (Denzin & Lincoln, 2003).

Within the overall research strategy, the one on one and focus group interview research methods were applied using the same approach to address Research Questions 1 and 2.

3.3 Research methods

Two linked interview methods were used for this study. Both the one on one and focus group interviews were semi-structured to provide advantages of both structured and unstructured interview methods. Semi-structured interviews can provide greater breadth and richness than structured interviews by allowing free response to questions and probes (Fontana & Frey, 2003). Participants can also narrate their experiences without being constricted to specific response categories. The use of pre-existing questions also has an advantage in coding analysis as it facilitates a comparison across interviews because of standard questions (Fontana & Frey, 2003).

Each of these research methods was used in a purposeful manner within the overall research design. The research questions aligned with the research methods and the methods of coding the data. Table 3.1 summarises the links between the research questions and the research design. It also outlines the research methods and sources of data used for answering each of the research questions.

Table 3.1 Links between the research questions and the research design

	Research Questions	Sources of Data	Research Methods
1	<p>How do synchronous multimedia conferencing participants experience the manifestations of empathy?</p> <p><i>(How do participants experience the ways empathy exists in SMC?)</i></p>	<p>Case – Southland Interactive Learning Community (SILC) Online Courses (2 Case Studies) & Research Diary</p>	<p>Phase 1 One on One Interviews (semi-structured) Focus Group Interviews (semi-structured) <i>Thematic Coding & Analysis</i></p> <p>Phase 2 Focus Group Interviews (semi-structured) One on One Interviews (semi-structured)</p>
2	<p>How do participants experience the functions of empathy within synchronous multimedia conferencing?</p> <p><i>(How do participants experience the roles of empathy within SMC?)</i></p>	<p>Case – Southland Interactive Learning Community (SILC) Online Courses (2 Case Studies) & Research Diary</p>	<p>Phase 1 One on One Interviews (semi-structured) Focus Group Interviews (semi-structured) <i>Thematic Coding & Analysis</i></p> <p>Phase 2 Focus Group Interviews (semi-structured) One on One Interviews (semi-structured)</p>

Each sub-phase of the research consisted of an interview with a different purpose. The one on one, focus group one, focus group two and respondent validation interview methods were applied in a research design focused on developing understandings over time. Table 3.2 details the purpose of each of these interview methods (sub-phases) along with the procedure for how they were applied, type of data gathered, and method of analysis.

Table 3.2 Overview of the research design

Phase	Method	Purpose	Procedure	Type of Data	Method of Analysis
1a	One on one Interviews	Undertake a preliminary exploration of participant understandings of their lived experiences of empathy within synchronous multimedia conferencing. Opportunity for student response without teacher or other student influence	One 30-40 minute semi-structured interview with each of the case study participants. Individual interviews via distance using synchronous multimedia conferencing. Semi-structured interview. Free response to pre-determined questions. Taped and transcribed.	Qualitative, synchronous, free responses to interview questions, dialogic, tacit knowledge, context bound, individualistic, of participant <i>lived</i> experience.	Identification of key issues, substantive points. Identification of tentative themes or units of meaning from transcripts. Interpretive.
1b	Focus Group Interview	Stimulation of new or alternative perspectives through focus group discussion. Collective exploration of participant understandings of empathy. Additional individual and new collectivistic understandings.	One 30 – 40 minute focus group semi-structured interview with each of the two student and one teacher focus groups. Conducted online using multipoint synchronous multimedia conferencing. Audio recorded and transcribed.	Qualitative, synchronous, free responses to interview questions, dialogic, tacit knowledge, context bound, collectivistic, of participant <i>lived</i> experience.	Identification of key issues, substantive points. Identification of tentative themes or units of meaning from transcripts. Interpretive.

Phase 1 transcriptions used for the identification of themes or units of meaning/ understanding. These themes formed the foundation for semi-structured interviews in Phase 2.

Phase	Method	Purpose	Procedure	Type of Data	Method of Analysis
2a	Second Focus Group Interview	Discussion of preliminary themes related to empathy in SMC identified in Phase 1. Clarification, refutation, expansion of preliminary ideas and models. Continued construction and reconstruction of individual and collective understandings.	One 30 – 40 minute focus group semi-structured interview with each of the case study focus groups. Conducted online using synchronous multimedia conferencing. Audio recorded and transcribed	Qualitative, synchronous, free responses to the identified themes from Phases 1 & 2 presented back to the focus group. Dialogic, tacit knowledge, context bound collectivistic, participant <i>lived</i> experience.	Identification of key, substantive points. Thematic analysis. Identification of confirmations refutations and examples given of themes identified. Interpretive.
2b	Final Individual Respondent Validation Interviews	Individual discussion of themes and models debated in second focus group interview. Individual clarification, refutation or expansion of themes/ideas/models. Opportunity for student response without teacher influence. Participant validation of information gained from Phase 2 and research strategy and interview method.	One 30-40 minute semi-structured interview with case study participants. Interviews via distance using synchronous multimedia conferencing. Semi-structured interview. Taped and transcribed.	Qualitative, synchronous, free responses to interview questions, dialogic, tacit knowledge, context bound, individualistic, participant <i>lived</i> experience.	Refinement of key, substantive points. Thematic analysis. Identification of confirmations refutations and examples given of themes identified models developed. Interpretive.

3.3.1 One on one interview

The one on one interviews were undertaken to enable access to the individual understandings of participants at a deeper level than other methods. Through semi-structured interviews, a range of data were obtained across the two case studies. The purpose of these interviews was to gather information, clarify understandings and facilitate the discussion of issues of meaning within a hermeneutic cycle research approach. The one on one interview research method enabled the interviewer to interact personally with participants, gaining their trust and confidence so as to provide encouragement for them to share their understandings of the phenomenon (Gillham, 2000).

The rationale for using the one on one interview method for Phase 1a was to access a range of personal understandings of how participants experienced empathy prior to group discussion within the focus group interviews. It was believed a one on one interview, followed by a focus group interview, would facilitate a greater breadth of initial response from participants as they would not be influenced by other participant responses or power dynamics. The one on one interview method allowed the researcher to ask specific and targeted semi-structured questions specifically related to the two research questions. This approach also facilitated the refocus of questions on the occasions when responses became side-tracked or when it was believed subsequent questions could encourage richer personal responses (Fontana & Frey, 2003).

The Phase 1a one on one interview was also used to generate material for the stimulation of subsequent discussion within the focus group interviews. The one on one and focus group interviews therefore were mutually supportive of each other within this strategic, iterative, research approach. Undertaking multiple one on one interviews also allowed for comparison across interviewees as themes emerged and were identified and could then be coded (Gillham, 2005).

A five minute online pre-interview familiarization meeting and technology check provided an additional opportunity to establish rapport with participants gaining participant trust and confidence (see Appendix J). The initial Phase 1a one on one interview began with structured questions allowing free response from participants (see

Appendix K). The responses produced a range of participants' lived experiences of empathy within SMC. The semi-structured nature of the interviews also allowed further probing through further questioning, for deeper explanation, clarification, or expansion. The one on one interview was a powerful research method producing a range of personal understandings of empathy. Although there was the potential for ambiguity in the individual responses given, the semi-structured interview technique also allowed for the clarification of responses and even the encouragement of a richer explanation (Fontana & Frey, 1994).

The second Phase 2b one on one interview – the final individual respondent validation interview – had a different focus to the initial one on one interview. The primary objective was on the interrogation of themes and models that were discussed within the focus group interviews, initial one on one interview and the researcher/participant interpretations of these. The interview facilitated the individual confirmation/refutation and expansion of the themes that were emerging from the previous three interviews. The interview also facilitated the opportunity for participants to develop their own end of research metaphor and diagrammatic model of empathy within SMC. The last one on one interview provided a final independent participant response without teacher or other participant influence. This enabled the avoidance of teacher or student social power dynamics influencing participant engagement or responses, which can occur within group interviews (Yin, 2003a).

All one on one interviews involved a 30-40 minute semi-structured interview with each of the participants from the two case studies. The interviews were conducted using SMC as the interview medium. Interviews were conducted with participants who were enrolled at high schools around New Zealand from a wide geographical area. The interviews followed a pre-determined semi-structured interview schedule (see Appendices K and N respectively).

The responses were synchronous free responses to pre-determined probe questions with a view towards stimulating further discussion. With respect to synchronous responses, data were only obtained from transcripts recorded within the interviews. The data related to their tacit knowledge of their own lived experiences of empathy within SMC, and hence derived from individual and context bound circumstances.

The method of coding the one on one interview responses involved the identification of broad categories or substantive points. The process was interpretive and focused on the identification of instances of similar use of language, description or explanation. These categories and points were subsequently coded into the NVivo ® qualitative data analysis software for further sub-coding into more finely grained data sets (see Appendix R).

3.3.2 *Focus group interview*

The focus group interviews were undertaken in this research to provide a collective perspective to supplement and extend one on one interview data. The interviews provided a useful method to facilitate the stimulation of confirmatory/alternative responses. The method also stimulated additional responses that may not have eventuated if only the one on one interviews were used. This method brought individuals together into three separate focus groups consisting of separate teacher and student groups. The focus groups provided valuable data to this research, especially the shared understandings of empathy within SMC (Fontana & Frey, 1994).

Views expressed by participants within the initial one on one interviews were used to develop the Phase 1b focus group interview schedule and to stimulate further discussion through the use of additional probe questions and participant explanations (see Appendix L). The initial focus group interview facilitated the collective exploration of participants' understandings of empathy. Within the group discussion, additional individual and new collective understandings of empathy were developed. The focus group interview, therefore, allowed the continued construction and reconstruction of understandings within the overall iterative research strategy (Yin, 2003a).

Within the second focus group interview, Phase 2a, emphasis was placed on the discussion of the preliminary themes identified within Phase 1. The second of the two focus group interviews facilitated the clarification, refutation and expansion of preliminary themes identified in the entire first phase. Both the focus group interviews involved a 30-40 minute interview (see Appendix M). Three focus group interviews were convened for each of the research sub-phases, one teacher and two student groups.

One of the challenges of focus group discussion is to stimulate collective discussion without inhibiting responses due to power dynamics, especially teacher presence. The effect of the researcher, other students through peer pressure, and the teacher should not be ignored in the responses given by the participants (Gillham, 2005). A strategy to mitigate this effect was to hold separate focus groups involving only the students from each case study. An additional focus group involving only the teachers was also convened because the teacher was also seen to be an SMC participant and incorporating their views was seen to be important.

The focus group method produced further data on these themes due to the opportunity for participants to stimulate each other to produce additional understandings and experiences. The focus group interview also provided a greater thinking and reflection time. Whilst one participant may have been responding to questions, other participants were able to listen, reflect and think about similar or alternative discourses thus building their understandings within the interview (Morgan, 1997).

The focus group interviews were also conducted using SMC as the interview medium. This involved the connection of participants via internet capable computers over wide geographical areas. Participants from several schools collaborated simultaneously in a very similar manner to their online classes. These interviews incorporated participants from seven provincial areas covering both the North and South Islands of New Zealand. All participants were interviewed from their own school in a multipoint synchronous multimedia interview. The focus group interviews were also digital audio taped and transcribed.

3.3.3 Issues relevant to both interview methods

The data that were gathered from both methods were a range of oral, written and diagrammatic forms and were recorded digitally and converted to written transcripts, with attached digital images (drawings and annotations). The transcripts consisted of qualitative and synchronous responses to interview questions and discussion points. Generated and constructed from both individual and collective perspectives, these responses were of the tacit knowledge of the students' and teachers' lived experience.

It was anticipated interviewing participants using SMC would stimulate respondents into sharing their lived experiences in more detail. Being interviewed in the same environment as their learning context also provided participants with *real* and *lived* examples within the actual interview of experiences they had within their SMC online courses. Using this strategy, it was believed, would enable participants to draw more readily on and share their prior experiences.

The interviews were recorded via digital audio recordings and subsequently saved to a computer digital audio file. Pictorial responses shared by respondents within the interviews were recorded within the online SMC whiteboard capability and then subsequently copied as a .jpg image to the interview transcript and then into the NVivo® software. The purpose of audio recording and image transfer was to ensure that the oral accounts and diagrammatic representations were recorded as accurately as possible.

The researcher transcribed all the interviews as it was believed that the researcher would have a greater chance of engagement with the responses through *re-living* the interview during the transcription process (Gillham, 2000). Although researcher transcription was extremely time consuming, it was believed that the researcher became more immersed in the individual and collective participant experiences, became more familiar with the interviews and interviewees, and therefore capable of greater transcription accuracy and interpretive rigour (Oliver, Serovich, & Mason, 2005; Seidman, 2006).

The interview schedules for Phases 1a, 1b, 2a and 2b (see Appendices K-N) consisted of targeted questions and were informed by the literature review and previous sub-phase transcript data coding. During the interviews the interviewer endeavoured to establish a climate in which a fruitful collection of information could be gathered. The strategy of audio recording and subsequent transcription was undertaken as it was believed note taking during the interview would be less accurate and result in a smaller data set. Specifically, it was considered that interviewer effectiveness would be reduced through a reduced ability to listen and interact supportively (Seidman, 2006; Tuckman, 1978).

Transcriptions were completed almost always within one day of the interview. It was found that the nearer the transcription process was to the interview, the easier it was to

remember the context of the interview and interpret more accurately the audio recording of what was said in the interview. Transcripts were then posted to the participants for correction or confirmation of accuracy. After participants signed a release of transcript form, transcripts were uploaded into NVivo® data analysis software for coding (see Appendix I). The coding analysis of transcriptions was used in the development of subsequent interview schedules within the overall iterative research strategy.

The shared responses of participants within the focus group, compared with the individual interview perceptions, provided a valuable comparison of data. The use of the two methods, therefore, enabled the interpretation of both collectivistic and individualistic responses in a complementary approach enhancing the value of the data (Denzin, 2003; Madriz, 2003).

3.4 Field notes

An additional dataset of field notes was collected in the form of a reflective research diary. These notes represented the researcher's daily research diary, written during the research data gathering phases. The researcher notes were a valuable resource as they enabled reconstruction of participant experience in context rather than reliance purely on the verbal recording. These researcher notes recorded the observations of the researcher, personal reflections on the research process, and contextual information relevant to the interview and research. These reflections also contained insights related to the research that influenced its direction. They were also a means of prompting and recording reflexive inquiry of the themes as they emerged along with monitoring the research strategy. This diary also provided a record of the research for reference in supervisory meetings. Discussions and reflections within supervisory meetings, SMC collaborations, emails, and telephone contacts with participants and supervisors were also recorded in the reflective diary (Ajjawi & Higgs, 2007).

3.5 The role of the researcher

The role of the researcher within the hermeneutic interpretive approach of this research is to try to take the perspective of the respondents. The objective is to minimise the distance between researcher and research participants and 'get to know' respondents

below their rational façade to access their deeper understandings (Fontana & Frey, 2003; Seale, 1999). To achieve this, the objective of the researcher was to work alongside and support the participants to express their individual and shared understandings (Denzin & Lincoln, 1994). The researcher was also informed about process, interpretive strategy and outcome from within a hermeneutic perspective. This involved participants making meanings of lived experiences through dialogue with the context. It was, therefore, the role of the researcher to engage participants in dialogue with these experiences (Sammel, 2003). After these experiences were coded, later analysis involved the interpretation of multiple realities merging them into thematic understandings. It was then the role of the researcher to ground these thematic understandings in the context in which they were explored (Charmaz, 2003).

The researcher is an educationalist and a distance educator, and is also working within the New Zealand secondary education sector. Familiarity with the context, therefore, facilitated greater trust in the researcher/participant relationship. As an experienced user of SMC, the researcher was able to establish insightful access to their world and thoughts. Being an educator also enabled fluent access to the language of the students and teachers, reducing the need for clarification and thus limiting misinterpretation. These benefits extended to the process of researcher transcription, where there was a greater hermeneutic alertness in the sense of being able to step back and reflect on meanings given from the researcher contextual knowledge. The opportunity for reflexivity for the researcher was therefore built into the research process through the reflective diary entries and strategic coding processes (Ajjawi & Higgs, 2007).

The involvement of the researcher in the process of conducting, collecting, and interpreting data can create the potential for significant researcher influence and potential distortion of data (Adler & Adler, 1994; Angrosino & Mays de Pérez, 2003). During the data coding process, value-laden assumptions, views, and beliefs were expected to be present (Denzin & Lincoln, 2003). This can be further exacerbated if the results are of interest to the researcher, which they were in this study. Therefore, throughout the gathering of data, the reporting of the results, discussion and conclusions, transparency was of great importance. There was also a focus on presenting sufficient information for the report to be easily accessible for critique (M. Z. Cohen et al., 2000). The mode of operating of the researcher in this case became one of disclosure and descriptive

reporting. This enabled the findings to be quality verified by cross-reference and triangulation (Creswell, 2002; Crotty, 1998). It was also important for the researcher to have critical engagement of the content and context of the data during this process for this critique to occur (Craswell, 2005; Wallace & Wray, 2006). This occurred primarily in two ways. First, there was critical reengagement with the responses given in subsequent interviews. Second, through the utilisation of a hermeneutic alertness, the researcher was able to reflect critically on the meanings of the situations, rather than accepting pre-conceptions (van Manen, 1997).

3.6 Selection of data sources

The selection of data sources for this investigation involved the purposeful selection of case study contexts. First, the manifestations of empathy were grouped into categories and summarised within the literature review (see Table 2.1). These manifestations were then used to identify criteria for the selection of potential synchronous multimedia conferencing research contexts. The criteria identified from this process were:

1. A relationship is expected to build between participants,
2. Helping behaviours, compassion, a sense of belonging, and other manifestations of empathy are expected to exist within these relationships,
3. There are a series of conferences or an on-going conferencing community (*not a one-off conference with the primary aim of information transfer*), and
4. The researcher is able to collect the experiences of all participants.

Four potential case study contexts were identified from a range of users of synchronous multimedia conferencing within New Zealand educational settings, including:

1. A national e-administration training programme,
2. Online training support from a national software provider,
3. Online secondary courses offered by one of New Zealand's distance learning clusters, or
4. An online tertiary training programme offered nationally and internationally.

Each of these contexts was then analysed against the criteria to assess their suitability as a potential research context. Of these potential contexts, the online secondary school courses offered by the Southland Interactive Learning Community (SILC) cluster were selected as the most appropriate for this research.

3.6.1 Case study contexts

Case Studies (SILC)

Participants: Teachers and senior secondary students (*from schools other than my own*) who participate in online senior (Level 3) New Zealand National Certificate in Educational Achievement (NCEA) subject classes as part of the SILC programme. Two separate case study contexts were selected using literal replication, which involved the selection of two cases expected to have similar characteristics with respect to empathy within SMC (Yin, 2003a).

3.6.1.1 Case Study 1

Course: National Certificate in Educational Achievement (NCEA) Level 3 New Zealand History

Participants: Four female students, two male students, one female teacher. Total = 7
Geographic Distribution of Participants: Participants located in three provincial areas of the South Island of New Zealand.

3.6.1.2 Case Study 2

Course: National Certificate in Educational Achievement (NCEA) Level 3 Art History

Participants: Three female students, four male students, one female teacher. Total = 8
Geographic Distribution: Participants located in five provincial areas covering both the North and South Islands of New Zealand.

The two case studies represented two separate online classes linked through their enrolment within the Southland Interactive Learning Community (SILC) online distance learning cluster. The SILC cluster involves secondary schools providing online SMC distance learning opportunities to each other and other schools involved in the New Zealand Virtual Learning Network (VLN).

In total, thirteen student participants and two teachers were invited to participate in the research. All participants were 16 years of age or over. The students from each of the case studies were included in separate focus groups. An additional focus group consisting of the researcher and the teacher from each case study was also convened.

3.7 Initial selection and contact procedure

Once Massey University Human Ethics Committee (MUHEC) approval was obtained (Southern B: Application 10/01), formal contact was made with the lead school Principal for the Southland Interactive Learning Community (SILC) programme. The SILC programme is a cluster of high schools that provide a range of senior subjects online to other schools to extend each school's subject choices through access to courses provided by other schools. The SILC Principal (*the principal of one of the cluster schools*) was given an information sheet and consent form (see Appendices A and B). Upon interest confirmation and consent approval, the SILC Principal and the E-Principal (*manager of the SILC programme*) were asked to identify teachers who had previous successful experience teaching distance programmes using SMC. They were also requested to identify teachers whom they believed may facilitate a relational/empathic learning environment. Two teachers were identified and were approached in the first instance by the E-Principal. The teachers expressed interest to the E-Principal and were then approached by the researcher and given an information sheet (Appendix D), teacher consent form (Appendix E), and focus group consent form (Appendix H).

Subsequent to teacher interest and participation confirmation, the students enrolled in these courses were approached by the E-Principal to gauge their interest. The E-Principal was used for this initial approach as their role within SILC is as an independent facilitator of online courses. It was believed the students would feel less obliged to participate if an independent request was made, rather than direct contact from their teacher, or the researcher. Confirmation of interest to participate was then obtained from students by the E-Principal. Letters of information and consent forms (Appendices F, G and H) were then sent to the students at their various schools. A letter of information (Appendix C) was also sent to the principal of each school, followed by

a courtesy telephone call to establish contact with the school principal to introduce myself and to answer any questions.

As part of the informed consent process, all teachers and students received an information sheet and consent form that outlined their commitment to the research, including the interviews, both one on one and focus group. Although agreement to participate was made through a consent form, additional verbal consent was also obtained from each participant prior to the commencement of Phase 2 and is outlined in the interview schedule (see Appendix M).

Detailed within the information letter and at the commencement of each of the interviews, participants were offered the opportunity to have a support person and were made aware of their rights whilst being interviewed. These included the intention of the researcher to record the interview, the right to decline to answer any question, to have the recorder turned off at any time, and the right to stop the interview at any time (Fontana & Frey, 2003; Warkentin, Sayeed, & Hightower, 1997).

3.8 Interview participation

A total of 36 interviews were conducted over the course of the research. 18 interviews were completed within Phase 1 and 18 in Phase 2. Sub-Phases 1a and 2b consisted of 15 one on one interviews and Sub-Phases 1b and 2a consisted of 3 focus group interviews each. All of the participants who were involved in the initial one on one interview also participated in the research right through to the end of the data gathering. None of the participants approached by the E-Principal initially, chose not to participate in the research.

3.8.1 Research participant involvement in research phases

All 15 participants who gave initial consent to participate in the study were interviewed in the one on one interview and were available again for the final one on one respondent validation interview. This generated 30 one on one interview transcriptions, fourteen from Case Study 1 and sixteen from Case Study 2.

The relative ease of coordination for the one on one interview method was not the same for the focus group interview method. Coordinating a focus group interview that involved all students in the case study respondent group was extremely difficult, as not all the students were available at the same time. Added to this was the need to ensure the timing of the focus group interview did not impact negatively on student learning. Within their courses, both the case studies (classes) held two online sessions per week so that the students could participate in at least one of these sessions. Having two sessions per week also gave flexibility to the teacher to respond to individual school related events, such as school sports or timetable changes. When this occurred students only missed one online session in that week. These challenges resulted in not all students participating in all the focus group interviews. The teachers' focus group was easier to coordinate, as there were only two teachers involved. Consequently, both teachers were able to be involved in both focus group interviews. For the focus group interviews, out of the total 15 participants across the two case studies, 11 participants were involved in at least one of the focus group interviews. Seven of the respondents were able to participate in both the focus group interviews.

There were implications with regard to the number of participants who were able to engage in two or more interview methods. These implications involved the degree to which participants were able to participate in the iterative research strategy. Fortunately, eight of the respondents were able to participate in all four interview methods, 10 of the respondents in three or more, and all participants were able to participate in two or more interview methods. Participants were, therefore, able in varying degrees to engage in the iterative research strategy as summarised in Table 3.3.

Table 3.3 Case study participants' involvement in research phases

Case Study 1 <i>(Pseudonyms used)</i>	1a One on One Interview	1b Focus Group Interview	2a Focus Group Interview	2b One on One Interview	Total Interviews
Mary (T)	✓	✓	✓	✓	4
June	✓	✓	✓	✓	4
Lucy	✓			✓	2
Susan	✓	✓	✓	✓	4
Peter	✓			✓	2
Jessica	✓	✓	✓	✓	4
Edmond	✓			✓	2
Total	7	4	4	7	22
Case Study 2					
Kathryn (T)	✓	✓	✓	✓	4
Sophie	✓	✓	✓	✓	4
Harold	✓	✓	✓	✓	4
Jimmy	✓	✓		✓	3
Sally	✓			✓	2
Rita	✓	✓	✓	✓	4
Jack	✓			✓	2
Joshua	✓	✓		✓	3
Total	8	6	4	8	26
Interviews	15	10	8	15	48

(NB. Pseudonyms used)

3.9 Interview transcriptions

The interview transcriptions that were generated from these interviews provided a significant amount of data from which coding was possible. In total just over one hundred thousand words of transcript were recorded from the 36 interviews, along with a diagrammatic model from each of the respondents. The level of response from these

interviews was analysed and compared across respondent groups, interview method and respondent type to analyse patterns of response levels (see Appendix Q).

Uploaded into the NVivo® software, transcripts were coded into individual cases and sub-coded into finer grained data sets (see Appendix R). Uploading these transcriptions into this file structure enabled the grouping of the data into case studies, interview method, and interviewee type (such as gender and participant roles – teacher/student).

3.10 Data coding procedures

The coding of the data during the research served two main purposes. First, preliminary data coding was used to develop subsequent interview schedules within the iterative research strategy. This was achieved through the identification and coding of themes (units of understanding) and areas of interest for subsequent clarification and development. Second, the coding of data was used to identify responses relevant to the research questions developed from the literature review (see Appendix R).

Each transcript was initially coded as an individual case within digital files. Coding transcripts as independent cases enabled later identification and comparison of cases within each of the respondent groups, within each of the research methods, and for each of the respondent types. When the individual cases were uploaded they were also automatically coded into areas of interest, developed from the two research questions. The auto coding process was used to highlight the relative level of interest participants gave to each aspect of the research questions. A subsequent process of manual coding and sub-coding of themes was also undertaken using the same areas of interest. An on-going strategic approach to the coding of the data with NVivo® was used to ensure the results of data coding were able to be used to support the identification of emergent themes from the data (Ozkan, 2004) (see Appendices R-U).

3.10.1 Phase 1: Auto and manual coding of areas of interest

Subsequent to coding the transcripts as separate identifiable cases within the NVivo® software, transcripts were auto coded into pre-determined areas of interest, in a tree node structure. This process enabled an analysis of the relative level of importance research participants placed on each of these research areas of interest (research sub-

questions). This interest level was automatically calculated within the software by comparing the percentage of response within each auto coded section compared to the entire transcript. Although this was a useful tool to quickly obtain an indication of the relative importance participants placed on each area of interest, it did not take account of participants who discussed areas of interest within other sections of the interview (Fillion, Limayem, Laferriere, & Mantha, 2009). In order to undertake a comparative coding analysis that took this into account, each transcript was also manually coded against these pre-determined areas of interest. The analysis was undertaken by comparing the auto versus manual coding of the transcripts for Phase 1a to identify the length (word count) of participant responses. This analysis indicated there was a very similar length of response when comparing the two coding methods (see Appendix W).

The initial auto and manual coding of the transcripts from Phase 1a and 1b enabled the data to be aggregated into a range of nodes for later finer grained analysis. These nodes related directly to the two research questions. The coding procedure also enabled a greater ability to analyse all 15 individual Phase 1a interviews, and the 3 Phase 1b focus group transcripts within individual areas of interest (nodes).

3.10.2 Phase 1: Thematic coding, coding analysis and thematic modelling

A strategic data coding approach was undertaken to identify, analyse and model the themes emerging from understandings and explanations gathered within Phase 1. The objective within this process was to facilitate the identification of themes and sub-themes from the data, interpret and summarise these themes, and finally, if possible, organise these understandings into a structure or an overarching model that could then reengage research participants with deeper dialogic engagement (Ozkan, 2004).

The coding procedure to facilitate this ongoing engagement involved first coding all interview transcriptions and field notes into emergent themes. These themes were not pre-determined and were established as each new idea required a new category to encapsulate its essence. This resulted in the establishment of twelve initial thematic categories. The contents of these categories were then recoded into one of three overarching categories that were believed by the researcher to both encompass and simplify the contents of these themes and thus the general understandings of empathy

within SMC. These overarching categories being: i) The participant (*the individual, their characteristics motivations and skills*), ii) the physical environment (*the physical SMC configuration and tasks set*), iii) the social environment (*the learning community and learning context*). These overarching categories were further coded using a finer grained analysis into characteristics of the participant, their experiences and their thoughts. The contents of the physical environment were also recoded into what the physical environment facilitates and the challenges it creates. It was the contents of these sub categories and an overarching exploratory model of empathy that were used to restimulate participants' ongoing dialogic engagement of their deeper understandings of empathy.

Overall the intention of this coding procedure was to allow the emergence of understandings throughout the research. Through the coding and organisation of these thematic findings into overarching descriptive categories it was believed deeper dialogic engagement of participants would be possible. It was hoped that these exploratory categories and model would stimulate deeper multiple perspectives of participants in relation to their deeper experiences of empathy within SMC, such as *feelings of being in someone else's shoes, or thinking like another*. It was also believed that the establishment of a descriptive model of empathy within SMC may stimulate a range of participant models of empathy within SMC leading to a much richer outcome from the research overall. Figure 3.4 summarises the emergent theme coding strategy used to create the overarching categories and descriptive model of empathy to stimulate this ongoing dialogic engagement.

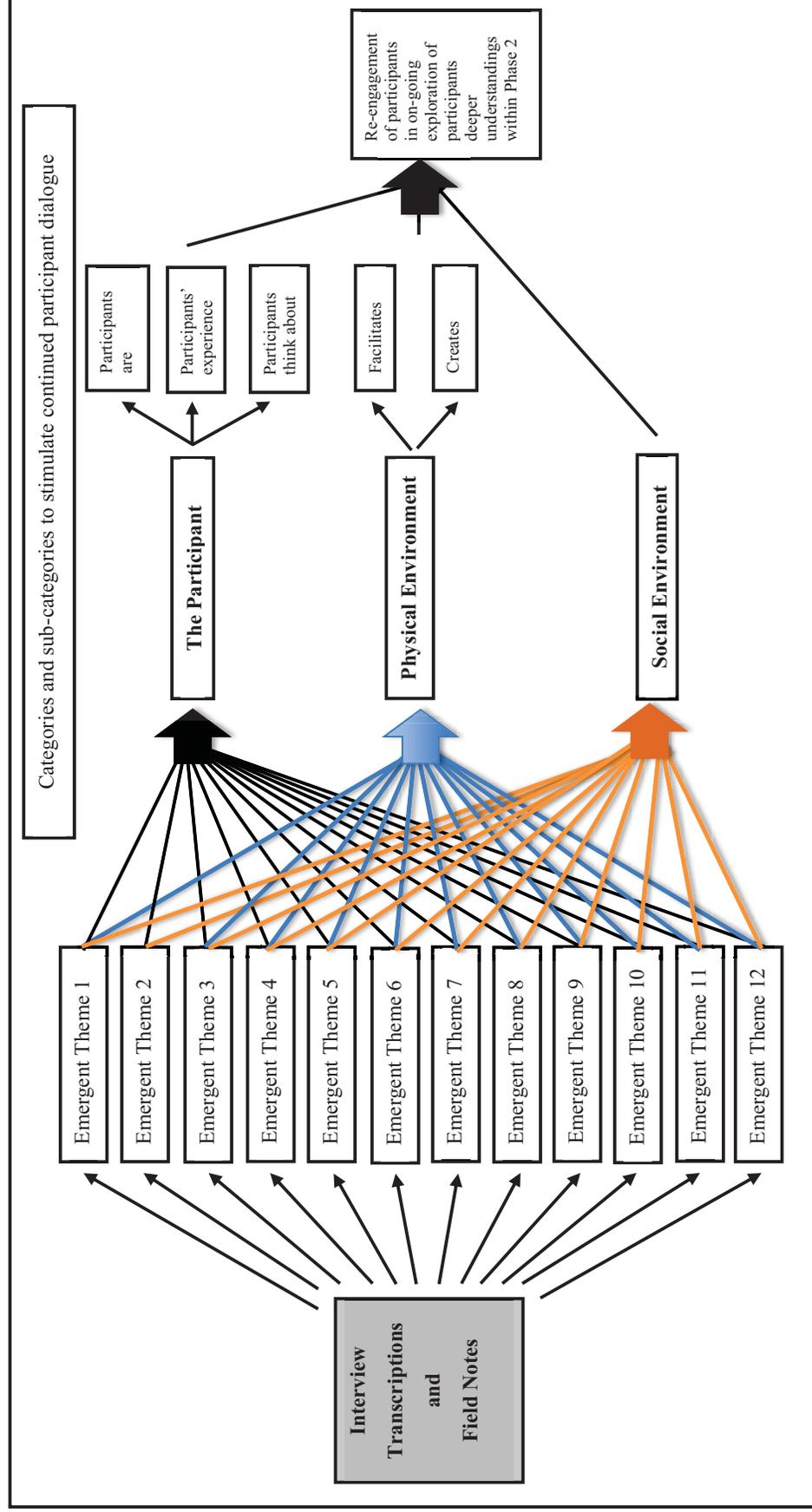


Figure 3.4 Summary of data coding procedure to create discussion categories and sub-categories for continued dialogic engagement

Through the use of this strategic data coding approach, it is believed themes were able to be identified through critical engagement with the data in an iterative dialogical approach. By coding units of meaning into general categories or themes as these were identified, the research retained its exploratory focus. The coding process did not have a preconceived analysis framework. The objective was to look for themes and patterns within the data even though it was unknown what these may be. Through a process of systematically coding and sub-coding transcripts from start to finish, one transcript at a time, into whichever tree and branch nodes the specific participant experiences related, an increasing number of themes and sub-themes became identifiable (see Appendices R-U). As these themes were identified overarching categories and relationships between these categories became evident. Understandings were built upon previous understandings through the hermeneutic construction and reconstruction process through the coding and sub-coding process (Dilthey & Joshuaon, 1972; Ozkan, 2004).

3.11 Data analysis

The analysis of the data was in line with interpretive principles. Successive interrogation of the *text* within successive coding and sub-coding of the data has ensured the on-going interpretation of the *text*. There was immersion in the data sets and an on-going interrogation of this data in a cyclical approach. This cyclical approach was driven through the iterative dialogical interview strategy where participants engaged and reengaged in their understandings throughout the research process. This process also involved grounding interpretations in the data.

Themes that were identified and subsequently coded were checked at each subsequent sub-phase by participants through reuniting them with these interpretations through the iterative research process. The hermeneutic circle was a focus of the research approach as it sought to move the participant from part to whole understandings as they revisited the data in an iterative circular motion. The focus was to encourage participants to generate initial explanations based on their interpretations of the phenomena. Through support and/or resistance from alternative discourses, these understandings were encouraged to evolve and allow explanations to shift. Understandings, therefore, emerged over successive cycles of dialogue, critique and debate (Calder & Brown, 2011).

A second process of analysis was undertaken within the results section (chapter four). Using NVivo® software, researcher theoretical and personal knowledge, and findings from the literature review, the data underwent a critical interrogation through the writing of a shared *story*. This analytical process occurred as the voice of the participants and researcher were blended together into the findings within the research section to answer the research questions and create emergent understandings of empathy within SMC. This process allowed for the generation of richer understandings, incorporating the voice of both the participant and researcher, thus enhancing the authenticity of the findings (Guba & Lincoln, 1989).

As the focus of the research was to encourage participant understandings to emerge over successive cycles of dialogue, the results were reported in the results chapter to portray this process. The aim within the presentation of the results was to convert participant *lived* experience into textual expression and diagrammatic representation. The results section, therefore, forms another process within the hermeneutic circle through presentation of the intersection of the voices of the researcher and participants. From these intersected understandings, the researcher discusses the findings in chapter five and explores the implications of these findings in chapter six (Ajjawi & Higgs, 2007).

3.12 Quality of data

The first step in assuring the quality of these data has been the selection of a research design, techniques and methods that are consistent with the philosophical and methodological assumptions of interpretive research from a hermeneutic perspective. To enhance the credibility, dependability, and confirmability of the findings, it is important to enhance the rigour with which the research is planned and conducted. Through a systematic approach to data collection, data coding and subsequent analysis, there has been a consistency in operation, along with a transparency of reporting the strategy (Ajjawi & Higgs, 2007; Denzin & Lincoln, 2003).

The alignment of qualitative research methods into an iterative research strategy has enabled greater confirmability of the data. This has been achieved through a research technique of repeated individual and focus group interviews where participants can

clarify, confirm, and/or refute understandings over successive interview sessions (Guba & Lincoln, 1989). The iterative dialogical research strategy also allowed for the development and checking of interview and focus group interview schedules through transcript analysis and data coding analysis (Thomas, 2003).

The dependability of the results was enhanced through a number of strategies including:

1. The use of an iterative dialogical interview research strategy (Thomas, 2003),
2. Triangulation of respondent groups, participant types (teacher/student) and interview method data (Bochner & Ellis, 2002),
3. Prolonged engagement with the participants and phenomenon (Bassegy, 1999),
4. The use of mutually supportive and converging interview methods (Yin, 2003a),
5. Comparing results from the interview transcriptions for similarities of language and description across participants and methods (Oliver et al., 2005),
6. Providing the opportunity for multiple constructions of understandings reducing systematic bias (Denzin & Lincoln, 2000),
7. Feedback from respondents in the last one on one interview respondent validation interview (Thomas, 2003), and
8. Ensuring the records were auditable (Gillham, 2005).

The use of two methods across two case studies groups in an iterative approach and using triangulation, “is a strategy that adds rigor, breadth, complexity, richness and depth” to qualitative research findings (Denzin & Lincoln, 2003, p. 8). This approach also allows the opportunity for alternative discourses from multiple perspectives, which also aligns with the interpretive paradigm (Crotty, 1998).

Taking these approaches to improve the quality of data into account will not completely eliminate influence and bias. There is a critical relationship between the interviewer and the respondent that can and does influence outcomes. Within both the one on one interviews and focus group interviews there is a need to understand the influence of the interviewer and acknowledge it (Miller & Cannell, 1988). There is always the potential for ambiguity in the spoken or written word from the interview tapes and transcriptions, leading to inaccuracies in data (Fontana & Frey, 1994). Although checking of transcripts by participants for accuracy was undertaken, there is still potential for error.

Therefore, it was important to ensure that responses were not only checked for accuracy but also checked through the reengagement of participants with the interpretations made of these responses in subsequent interviews.

It is also important to note that when using qualitative methods in a case study design the results will produce situated understandings of empathy specific to SMC (Denzin & Lincoln, 2003). The findings should always take into account the context in which they were explored and acknowledge that the understandings are situated in the interpretive understandings of participants' meanings (Charmaz, 2003).

3.13 Ethical considerations

Ethical approval for this investigation was granted by the Massey University Human Ethics Committee (MUHEC: Southern B application 10/01). The main ethical considerations of this proposal were related to the involvement of students in this research. Although all students involved were of senior secondary age (over 16 years of age), special considerations needed to be taken into account with respect to these and other participant welfare issues. Informed consent, ensuring participants were not exposed to harm, and ensuring students' learning was not adversely effected were all considered as part of a comprehensive ethics approval process.

Initial approaches were made to participants by the E-Principal to ensure no undue influence to participate was made by the researcher. Information sheets, which included the aims of research and participant rights, were given to potential participants and the opportunity to ask questions was offered (see Appendices A-H for information letters and consent forms). Participants were not selected from my own school and participants could also withdraw from the study without negative consequences. Written approval was obtained from participants prior to the interviews, which included separate research participation and focus group consent forms. Participants were also asked for their oral consent to participate in Phase 2 of the study. All participants originally offered participation in the study by the E-Principal provided written consent.

Students were informed of the opportunity to have a support person within the one on one interview. They were also briefed prior to each interview of their rights during the

interview (see interview schedules in Appendices J-N). Participants were asked to check interview transcripts for accuracy and sign a release of transcript form (see Appendix I). The potential negative effects of participants' involvement in the research were also considered. The degree of commitment required of participants was considered along with the need to ensure students were not missing learning opportunities through their involvement in the research. Potential conflicts of interest were considered and reduced as a result of all participants coming from schools other than my own.

Consideration was also taken of the confidential nature of the content of the online classroom contexts studied and the data generated from the interviews. Pseudonyms were used along with the removal or alteration of specific contextual details that could reveal the identity of the participants. Digital audio recordings were secured under username and password protected hardware storage and hard copies secured in locked cabinets for a period of three years as specified in the information letters.

3.14 Chapter conclusion

Within chapter three the methodological considerations of this research were presented. The chapter began with an outline of the research questions along with the theoretical underpinnings in which those questions were investigated. Structured from within an interpretive paradigm, understandings of the phenomenon of empathy were informed from a hermeneutic circular perspective. These underpinnings lead to the use of an iterative dialogical research strategy being applied to the two respondent groups in order to access the *lived* experiences and understandings of participants within Synchronous Multimedia Conferencing.

Case study methodology using literal replication for the selection of case studies was applied in a purposeful selection process so that respondents were selected that could be expected to have experienced empathy within SMC. The two interview type methods were used to enable participants to construct and reconstruct understandings over time. A data coding strategy using NVivo® software was also aligned to this iterative approach so that data coding supported the on-going dialogic re-engagement of participants with these understandings.

Chapter four presents the findings of Research Questions 1 and 2, along with a discussion of the themes that emerged and were identified within Phase 1. The chapter then moves on to the participants' responses to three exploratory branch node categories that were developed by the researcher to encompass the emerging patterns of data, including: i) the participant, ii) the physical environment, and iii) the social environment. The chapter also includes participants' responses to an exploratory SMC empathy model developed to describe the relationship between these categories and stimulate the development of their own models. The chapter poignantly concludes with a selection of participants' own metaphors for empathy within SMC and selected diagrammatic representations of their own models of empathy within SMC.

CHAPTER 4.

RESULTS

4.1 Introduction

Within this chapter the results are presented in a manner that reflects the hermeneutic circle approach in which the data were gathered and interpreted. The *text* gathered from within field data is integrated into a written narrative to encompass the shared understandings of the participants and the researcher. The written narrative is supported with examples of textual data, personal drawings, and models originating from interview transcripts, research field diary and relational models developed within the NVivo® modelling software. A significant proportion of the results are the participants' own words or drawings. It is believed these more accurately capture the essential meanings of the respective themes and understandings that were developed by participants. The act of integrating these examples into a linked narrative is, therefore, another interpretive step in a circular hermeneutic approach (Ajjawi & Higgs, 2007; M. Z. Cohen et al., 2000; van Manen, 1997). It is believed that using this approach has allowed the emergence of a *story* that speaks with and alongside the *voices* of the participants (M. Z. Cohen et al., 2000).

The results of Research Question 1 (How do synchronous multimedia conferencing participants in the secondary school sector experience the manifestations of empathy?) are presented in section 4.2. Collective understandings are built up through the presentation of sub-themes combining with, and contributing to, the presentation of findings for each research question. In order to reflect the iterative nature of the research processes, data are presented in a Phase 1a one on one interview, followed by Phase 1b focus group format. The purpose of this approach is to demonstrate the linkages between, and development of, understandings that occurred over successive interview methods. Research Question 2 (How do such participants experience the functions of empathy within SMC?) is presented using the same presentation strategy within section 4.3.

During Phase 1, many additional themes were identified that informed the research of *how* participants experienced empathy and these are presented in section 4.4. These findings sometimes fell outside the research questions, a result quite consistent with the intent of exploratory research (Bassey, 1999; Hancock & Algozzine, 2006; Yin, 2003b). The analysis and coding of the pertinent themes resulted in the emergence of three overarching categories (the participant, the physical environment, and the social environment). Section 4.5 outlines in diagrammatic form the results of this coding and modelling process along with a descriptive analysis.

Section 4.6 presents a summary of the Phase 2a and Phase 2b dialogic engagement with these categories, their thematic composition, and the overarching model of empathy developed within the NVivo® software. The interpretation of participants' understandings of these three areas is supported with participant responses from the Phase 2 interview methods and the research diary. Section 4.7 also presents a selection of relevant textual and diagrammatic metaphors developed by participants within the final one on one respondent interview. Participants were asked to develop these metaphors in relation to their *lived* experiences and understandings of empathy within SMC and to offer a model of their understandings. These metaphors and models represented the culmination of the development of understandings throughout the entire iterative research process and were used in the subsequent modification and reinterpretation of the findings and SMC empathy model.

4.2 How do synchronous multimedia conferencing participants in the secondary sector experience the manifestations of empathy?

Research Question 1 explored *how* participants experienced empathy, specifically, compassion, encouragement and helping behaviours within SMC. This question also explored how participants experienced these manifestations through verbal communication, non-verbal expression including facial expression, gestures and actions and finally through emotion.

4.2.1 Experiencing compassion

4.2.1.1 Phase 1a: Initial one on one interview

All of the participants believed they had experienced compassion or caring of some form or another during the online sessions. For some of the participants, this compassion or caring was interpreted as acts of understanding or an acknowledgment of personal discomfort, sickness or inability to participate. This compassion was experienced from and by, both the teacher and the students.

Peter (CS1) Mary has shown me a lot of compassion when I was sick or I had to play ██████. I missed a lot of Tuesday sessions when I was playing ██████ and she said “nah that is fine”. (29th June 2010)

Jimmy (CS2) ... especially when I have had big coughing fits and everyone is saying “Oh, are you okay?” “You are not going to die on us are you?” (4th June 2010)

Interviewer: Did you say you had that compassion or caring from other students?

Jimmy (CS2) Yes from everyone, from the teacher and students. They sort of jumped in and said “are you okay?” “Do you feel okay to keep going through with this?” “Do you want to leave or whatever?” So they put their two cents worth in to make sure you are okay. (4th June 2010)

[Research Diary: Thursday 3rd June 2010

I was due to have an online session with Jimmy however he was very ill and we agreed to have the interview on Friday. I found it easy to *feel for* Jimmy and interpret his feelings of illness.]

For some other students the experience was about feeling that the teacher or other students were interested in them. There was a sense that caring and compassion could be conveyed through the types of questions and how those questions were asked.

Joshua (CS2) Maybe not compassion but definitely interested in me succeeding in the class I guess. Yes, definitely caring. It was the manner of questions that were asked. Asking where I was at with time and time management and homework that we had been set. (20th May 2010)

For the teacher there was a belief that compassion and caring could also be described as some form of understanding or patience.

Kathryn (T): I don't know if it is compassion or caring but they have certainly been understanding and patient. Today was a really good example of that. We had a lot of people coming in and out of the meeting and two students couldn't have access to it. There were five students in the classroom but there were two who were in and out of it and Phyllis [SILC Principal] was coming in and out as well, so I kept on making sure the others were OK with it. They were saying "yeah, yeah, we are alright with it, it's OK". There is understanding, there is patience. (17th May 2010)

This interest was also interpreted from the act of others asking about them through conversational chatter, being personally interested in them, asking questions about them and events outside the class.

Edmond (CS1) Asking how the day was and everything like that. A bit of brief chatting and stuff before we got on with the work like that ... They are worried about how I am feeling. It would seem to me that they would care. (15th May 2010)

Lucy (CS1) Before we get into the session we have about five or ten minutes talking about our weekend or she is interested in what we have been doing or how we are going in our other subject. (17th June 2010)

Rita (CS2) If I have missed a thing and let her know why I have missed a thing and she will be like “oh yeah” and be really understanding and send me the work. Yeah, that’s sort of the same thing. (17th June 2010)

As Rita outlines, one of the ways participants experience this compassion or caring is through the tone of another participant’s voice.

Rita (CS2) You can tell that she means it. You can tell that she wants us to succeed and she wants to help us by the tone of her voice. (17th June 2010)

This compassion appears to be experienced more intently when there is a shared experience. To highlight this, Susan was able to draw on a personal experience of this with Mary.

Susan (CS1) Mary and I have had conversations, like, we had to put dogs down and stuff like that, so sharing sympathy between each other.

Interviewer: You had to put dogs down, or she had to put dogs down?

Susan (CS1) Both.

Interviewer: So was there a shared experience?

Susan (CS1) Yep, Yeah. (5th May 2010)

There is also an acknowledgement from nearly all the participants that the compassion or caring is not confined to the online session. Participants noted that this compassion came in many forms from what others have said orally, what they have written within the text chat, or discussed later within email correspondence and even within social networking sites such as Face Book. Therefore, it appears the participants believe compassion is expressed both synchronously and asynchronously and that experiences of compassion can be linked.

4.2.1.2 Phase 1b: Initial focus group interview

An initial researcher observation within the student focus group interviews was that students appeared reluctant to share the depth and detail of experiences related to compassion and caring than they did in the one on one interviews. There appeared to be a reluctance to respond which is believed was influenced by peer group pressure. Non-response or limited confirmation responses were frequent when discussing issues on this topic, especially at the beginning of the Phase 1b student focus groups. The example below from Focus Group 1a, the students from Case Study 1, indicates an example of these limited responses from within a group setting and is representative of both student focus groups initially.

Interviewer: June, what do you think about those?

June (CS1) I definitely agree with that. Not much to add really.

Jessica (CS1) I agree with it as well. Not really anything to add.

Susan (CS1) Yeah I agree too. (Focus Group Interview 1 – 22nd June 2010)

In comparison, the two teachers appeared less influenced by the other members of the focus group. The teachers readily expanded on many of the ideas developed in the one on one interviews in relation to the issues of compassion and caring. The teachers appeared comfortable sharing their ideas on these concepts, not being hesitant of possible negative reactions their responses may generate. One particular aspect, in

relation to compassion that was expanded on by Mary, was the use of the tone of voice as a method to identify how they may be feeling.

Mary (T)(CS1) I think it's this personalisation thing again isn't it. We are aware now that we know what their voices sound like. (Focus Group Interview 1 – 29th June 2010)

Mary raised a particular point that was representative of the views of several participants. This related to the sound of the voice and how with experience it could be used to infer the emotional state of another participant. As Mary intimated, as participants become more familiar with other participants' range of voice patterns, greater accuracy in interpreting personal emotional states occurred.

Although many ideas and discussion points were covered within the focus groups, those that merely provided confirmation of points raised within the one on one interviews have not been re-presented. Ideas that are expanded in a significant manner or a manner that gives an alternative perspective are included. These are usually presented through the participants' own *voice* or their own personal response accompanied by a researcher interpretation of that response.

4.2.2 Experiencing encouragement

4.2.2.1 Phase 1a: Initial one on one interview

Compliment formed the basis of the encouragement that was experienced by a number of participants. Predominantly through the compliment of what students are able to do, or have achieved, participants felt that the vast majority of this compliment was presented orally.

Interviewer: How did you know it was encouragement?

Joshua (CS2) The terms used like “good work with the homework” and “nice points made when discussing the topic” and things like that. (20th May 2010)

This encouragement was even evidenced by Kathryn, one of the teachers, from her students.

Kathryn (T): Generally they will say “thanks that was great” or “cheers” or whatever. So there is mentioning of it at the time, or I am getting an email, or I am getting a little smiley face in the conversation box at the side or whatever. (17th May 2010)

For many of the participants, this encouragement was not restricted to the online session. This encouragement was experienced after the online session as part of associated asynchronous communication.

Interviewer: Have you found the encouragement extending outside the online session?

Jack (CS2) Yep feedback from homework. I have had compliments through that. (18th June 2010)

This encouragement also has been experienced through acts of support or how passionate the teacher becomes in explaining the questions. For Jimmy, who is representative of many of the students, it appears acts of support and the teacher getting “right into the questions” was encouraging for him.

Interviewer: Is there anything she has done for you that you may feel is encouragement?

Jimmy (CS2) Personally I have asked for other examples of stuff and she has very happily emailed me all sorts of examples. She gets right into the questions, explaining them in detail, which I suppose is quite encouraging, knowing the teacher actually wants to help you. (4th June 2010)

Rita is representative of several students who also experienced enthusiasm as encouragement.

Interviewer: How have you experienced that encouragement?

Rita (CS2) She is like sort of persistent. She really encourages us to share our ideas and opinions, even if they are not exactly the right ones, then we like to shed light on what we are thinking ... She is really always enthusiastic about things. Even if we have said the wrong thing, she is enthusiastic we are giving it a go, which is really good because it makes you comfortable saying other things, even if you weren't comfortable before. (17th June 2010)

When this encouragement was given orally, the participants felt that they experienced a change in tone, energy level, or a passion in the voice.

Jimmy (CS2) You can understand it through the voice. When she says "hey it's pretty cool you know", you do get that feeling she is actually encouraging me. It's something you can understand, you know where she is coming from. (4th June 2010)

Harold (CS2) She has a real positive voice that makes you kind of just want to get into the work. She has got a welcoming voice so you are not really afraid of answering any questions ... The tone that she gives her speech in ... You kind of picture it in your mind that she is smiling or whatever. (20th May 2010)

Edmond (CS1) Everyone was speaking in a nice tone of voice and everyone was being pretty polite [laughter]. I suppose inflections in the voice and everything like that. It would have been part of it. (15th May 2010)

Lucy (CS1) She sounds like she actually cares about how you are going. She cares about you and the work you are doing, like she actually wants you to pass. (17th June 2010)

This encouragement has not only been experienced from the teacher but also from other students, as June outlines.

Interviewer: Have you ever been encouraged by others when you are online?

June (CS1) Yeah I have. Especially the girls. (13th May 2010)

4.2.2.2 Phase 1b: Initial focus group interview

The students from Case Study 2 discussed the idea that the majority of encouragement came from the teacher, because the majority of interaction was between the teacher and students. It was also suggested the students did not really have time to offer encouragement.

Harold (CS2) It's pretty much how it runs. We don't really have time to interact with each other. (Focus Group Interview 1 – 18th June 2010)

An interesting aspect of giving encouragement from the teachers' perspective was that over time it became easier to give encouragement. The reason for this, as outlined by Kathryn and Mary, was due to the teachers gaining a greater knowledge and experience of the students.

Kathryn (T) (CS2) He is good at giving other information as well. So by doing that and knowing a little bit about them, knowing they have been off doing [REDACTED] competitions or whatever, you can get a good idea of what type of person they are. Yeah, they have a much more kind of personalised conversation with you while you are going through and doing your class ...

Mary (T)(CS1) I would agree with that ... I have got hockey kids and hockey, and hockey and hockey, so you are getting to know

them, you are getting to know what is important in their lives and hearing about them and talking to them at a different level. (Focus Group 1 – 29th June 2010)

4.2.3 Experiencing helping behaviours

4.2.3.1 Phase 1a: Initial one on one interview

Additional work from the teacher, helping with understanding, or offers of assistance at a later date, from both students and the teacher, were the predominant forms of helping experienced by participants.

Joshua (CS2) Yes. I have had assistance with sites to go to for homework and stuff with the Art History class ... Maybe friends over sites and things we might have talked about things and helping about homework and helping with it later. (20th May 2010)

Rita (CS2) She sent me an email a couple of weeks ago after I had missed half of the class and she said she would fill me in on what I had missed. She always does it, if I miss a class she will let me briefly know what we have been doing so I can go over it before the next class. (17th June 2010)

Sophie (CS2) Yeah, the teacher has given us lots of things to download and extra web sites to look at that helps us to understand what we are doing in class. (7th May 2010)

As indicated below, the helping can also be experienced synchronously within the text chat environment. Participants, therefore, experienced the integration of both synchronous and asynchronous written language as the medium of receiving help.

Harold (CS2) When we are in our online classroom, we have a chat area box where we can ask questions ... when we have questions

and stuff, like the teacher or other students might be able to help us. (20th May 2010)

June (CS1) I'll have questions and I will put them in the wee chat box and she will answer. (13th May 2010)

As June additionally noted, the students even appear to be negotiating the helping they give to each other.

June (CS1) We will all have conversations together about what we can do to help each other. (13th May 2010)

Kathryn, the teacher of Case Study 2, even found help from students in relation to the course content. Mary, the teacher of Case Study 1, similarly noted the help from the students, from a technical perspective.

Kathryn (T) (CS2) He was looking at something in a different class completely and he thought of our class and me and he sent it along to me and it was something that was relative to what we were looking at. It was, it was really interesting, but he just said "I thought you might be interested in this". I was chuffed. I thought, "oh excellent he is not only thinking of the class, he is connecting it to another class", which is often never done, but he is going for the extra point and flicking it on, so I was quite chuffed with that. (17th May 2010)

Mary (T)(CS1) Sometimes the students will help me because I'm not great on the computer stuff, so they will tell me what to do and that's cool. I am more than happy for that to happen. (28th April 2010)

For a number of the students, helping was experienced in the form of the teacher being prepared to 'go the extra distance'. For June there was an additional level of salience in this support as she had never expected this level of assistance.

June (CS1) She said to a few of us who are within a couple of hours drive if we were having trouble we could meet up somewhere in between. I don't think any other teacher would go out of their way like that, which is pretty amazing. (13th May 2010)

Lucy (CS1) She quite often emails me at home on my home email address. If I have a question I have at school I will quite often email her at home and she will reply within a couple of hours and so I can get everything done that night before the next session. (17th June 2010)

4.2.3.2 Phase 1b: Initial focus group interview

One aspect of helping that came through from the student focus group was a belief that additional social interaction may promote additional helping. A point made by Sophie is representative of a discussion around the idea that more social interaction may promote helping behaviours because of the benefits it provides to their own learning.

Sophie (CS2) Just more social, because like I said before, it helps me with homework and stuff like that. (Focus Group Interview 1 – 18th June 2010)

The teachers supported the findings but also extended the discussion into more specific explanations of their experiences of the help they gave to the students. One of the main problematic issues was the lack of informal contact for participants with the teacher after class or outside the class during the week.

Kathryn (T) (CS2) Because of the nature of the class, I don't see my class finishing at the end of the period. It is only a short period of time and I only get to talk to them two periods a week ... They can't catch me during the week and they can't catch me in the hall way and that sort of thing. (17th May 2010)

The teachers also found that as the relationship developed so, too, did the helping of the students toward them, as the teacher, and the students toward other students in the group.

Kathryn (T) (CS2) I get photos of kids, trying to get the relationship going even more, “oh this is us doing bla ... bla ... bla ...” I think I told you about the one where I got “this is kind of off topic but I think it was kind of interesting”. So I think it is just this personalisation thing, where you make a connection that way.

Mary (T)(CS1): Yes it probably has as we have got to know each other more. (Focus Group Interview 1 – 29th June 2010)

4.2.4 Experiencing emotional contagion

4.2.4.1 Phase 1a: Initial one on one interview

All participants either shared experiences of, or agreed that they had observed emotional contagion (a spontaneous spread of emotion) in the form of humour spreading around the group. June and Kathryn provide examples of this from a student and teacher perspective, respectively.

Interviewer: Have you ever had a laugh or joke that has gone around the whole group, sort of spontaneously?

June (CS1) Definitely when Mary says something and we laugh because she is a funny person. (13th May 2010)

Kathryn (T) (CS2) One person goes “I was way off wasn’t I” and the others would have a little giggle but it wasn’t malicious. You could kind of tell again by the inflections I guess, or the way they laughed with it. Not like a joke as such. (17th May 2010)

As Edmond and Harold suggest, this humour didn't always require the presence or stimulation of the teacher.

Edmond (CS1) Yeah. We had no teacher and cracked a couple of jokes about how it was kind of silly the way some of the missionaries set up their posts in New Zealand. (15th May 2010)

Harold (CS2) When I was transferring the phone it was kind of weird because we were making jokes like "Oh can't see it" and all this sort of stuff and when I finally got onto a computer that worked I said "I can see!" and everyone had a laugh. (20th May 2010)

The spontaneous emotion, for a significant number of participants, is seen as important for creating a stronger bond within the group. Rita's perspective is representative of these views.

Rita (CS2) It kind of brings us together as a group because we understand what each other are laughing about. (17th June 2010)

Rita goes on to suggest the spread of emotion can occur from a pause in speech as everyone experiences the same understandings of the awkward silence with uncanny synchronicity. This experience is especially representative of the shared empathic understandings of each other.

Rita (CS2) ... so everyone is silent for a while and then everyone starts cracking up because we don't know who is talking to who. (17th June 2010)

Many of the participants noted that they experienced challenges in interpreting humour that may be present in the session, because of a predominant task orientation of the sessions. For Harold, this challenge was created through the rapid transition from

getting online to a direct focus on the learning content.

Harold (CS2) ... as soon as we get into the classroom we are straight into it. (20th May 2010)

More serious tones or expressions were also able to be spread around the group as emotional contagion and, as Kathryn outlines, the students were able to pick this up.

Kathryn (T) (CS2) You know I got the stern face on, sort of thing and they could hear it and said "you are almost telling us off, aren't you?" and I said "how could you tell?" [Laughter] So that sort of thing came through. (17th May 2010)

Several of the students also believed they had experienced tension that spread as participants become more uncomfortable, especially when students were unsure of an answer.

Jack (CS2) I have noticed when a question is asked and there seems to be, I don't know if I am imagining it, but there is a lot of tension when nobody knows the answer, maybe it is just that people felt uncomfortable. (18th June 2010)

4.2.4.2 Phase 1b: Initial focus group interview

A significant point that was expanded on was by the students in Case Study 1 regarding the role of the teacher. June, who was representative of the majority of students, suggested the locus of the humour was predominantly the teacher. For both June and Susan this was slowly changing as participants' familiarity with each other was increasing.

June (CS1) I just think when we have a laugh or a joke it is nearly always initiated by the teacher, like she is the one who always laughs first, like pretty much she is the joke. It's not like between us the students, she initiates it. At first I didn't really know the other girls but I think over time it improved. I still don't

really know them very well and you girls probably understand that, but I still feel at the moment I have trouble. But at least now I can tell when they are joking or serious or something by the tone of their voice.

Susan (CS1) It certainly is growing, like at the start of the year if there had been a joke we wouldn't have all got it, we do now that we are getting to know each other a bit more. (Focus Group Interview 1 – 22nd June 2010)

Another issue that was expanded, this time by the students of Case Study 2, was the limitations created through technical problems. Sally's view was representative of the discussion of the focus group and the beliefs of the other respondents.

Sally (CS2) Everyone else is just trying to listen into what everyone else is saying. ... on the phone you can't really hear that sort of stuff. Like the audio isn't good enough to hear that sort of thing. (Focus Group Interview 1 – 18th June 2010)

Within the teachers' focus group, Kathryn's view regarding the lack of visual cues and how this may contribute to a reduction of intensity experience was a view held by Mary as well.

Kathryn (T) (CS2) I don't think it is as intense as an actual classroom. I suspect it is because you are not seeing them. It may be just the voice thing. (Focus Group Interview 1 – 29th June 2010)

A very personal *lived* experience for me, as the researcher, with respect to emotional contagion, occurred within the Phase 1b teachers' focus group interview. This experience consisted of an uncanny simultaneous *linkage* between the teachers and researcher with respect to the way Kathryn responded to a particular statement by Mary. There was a simultaneous *knowing or understanding* of exactly what Kathryn meant by the other interview participants through the inflections in her voice. It was at that point that all three of us broke into simultaneous laughter. It was an experience all three of us

lived together within the interview and provided a shared experience of the phenomenon.

Mary (T)(CS1) They're good.

Kathryn (T) (CS2) They will be fine! [said in a tone with humorous inflection] [Laughter spreads around the three participants, the interviewer included]. (Focus Group Interview 1 – 29th June 2010)

Unfortunately even the exact text and notation of inflection of what was said within this exchange is unable to encapsulate exactly *how* this phenomenon was experienced.

4.2.5 Technical problems stress and workload

4.2.5.1 Phase 1a: Initial one on one interview

The main point stressed by all the participants related to the effects of technical problems on limiting their ability to sense the attitude and thinking of others. Technical problems create empathic experiences of others almost like a *fog*, shielding participant's ability to fully perceive others. Technical problems were an occurrence for all of the participants, a regular occurrence for some and frustrating for many.

Sophie (CS2) I don't know what has happened with the audio, but it makes everyone's voice echo so you can't really hear their different tones in their voices. (7th May 2010).

Edmond (CS1) ... if you can pick up they have more heat or anger in their voice you can naturally pick up they are not enjoying it. You cannot pick that up at all due to technical difficulties. (15th May 2010)

Susan (CS1) ... you can't really sense what anyone else is feeling or anything like that. (5th May 2010)

Rita (CS2) ... it is really hard to pick up peoples' attitude toward what we are talking about because sometimes you can't really hear them that well. (17th June 2010)

For many of the participants these problems created the need to focus on the specific words rather than the tonal inflections or context with which they are shared.

Harold (CS2) ... You are trying to listen to the words, than how their tone of voice is, and you are not able to get their expression. (20th May 2010)

Sally (CS2) ... my conference phone, it's not very loud and I spend half my time trying to concentrate on what she is saying, not picking up everything else. (19th May 2010)

These problems often materialised in feelings of frustration. This related to the additional effort required by participants to reach an acceptable level of interpretive ability. Participants also felt disappointed if they did not achieve what they expected in sessions because of reduced understanding or taking longer to understand.

Jimmy (CS2) When there are technical problems you can definitely pick up on frustration that other people are feeling. You can sort of empathise with them. You have been through it yourself and you know that has been a frustrating thing. (4th June 2010)

Lucy (CS1) You are getting frustrated yourself and you feel they are getting frustrated as well. (17th June 2010)

Mary (T)(CS1) I get frustrated because I feel that I haven't got done what I expected to do by the end of the lesson. (28th April 2010)

For some participants, the challenges to interpret others *looking through the fog*, they believe, facilitated the development of new and/or refined interpretive skills and strategies. These new skills were developed through the need to compensate for a lack

of information or confusing information. This necessitated the need to interpret others using other sources or cues or more intensively using interpretive skills they already had.

The effect of stress and workload was perceived by participants to have both positive and negative effects. For some participants, like Edmond, it produced a distraction and reduction in his ability to interpret others.

Edmond (CS1) ... it's just like any regular conversation. If you are more focusing on something else then you don't pick up on things that you would subconsciously pick up. Like people's emotions, they don't generally display. So yeah, I do find that if I am a bit pressured or I am working a bit harder at something, I don't pick up on them as well. (15th May 2010)

For others, the stress and the workload stimulated an emphasis to concentrate more and may have resulted in heightened attention to detail that led to actual improvements in interpretive abilities. Susan, who was representative of this view, believed her ability may have even been heightened through this effect.

Susan (CS1) ... when you are stressed you are probably a little more aware of what is going around. (5th May 2010)

4.2.5.2 Phase 1b: Initial focus group interview

For Susan and the other students within the Case Study 1 focus group, the effect of needing to concentrate on what was said, rather than how it was said, was of significant importance and facilitated significant discussion.

Susan (CS1) Yeah I agree with that, especially that you concentrate on what is said rather than how it is said. If you are trying to concentrate on listening rather than how it is said and you are just trying to hear it. (Focus Group Interview 1 – 22nd June 2010)

June, within the same focus group, provided another reason frustration was evident. For her, feelings of wasting other people's time and effort were a concern. June felt that the necessity for the teacher or other students to do extra work for her, because she was having technical problems, made her feel a nuisance to other participants.

June (CS1) At times like it's like that frustration one really gets me. It makes everything a whole lot harder and difficult for everybody else because she has to type everything out for me. (Focus Group Interview 1 – 22nd June 2010)

Mary was of the view that the level of frustration was not expressed sufficiently by respondents when exploring the feedback of the one on one interview. She felt the frustration was significant and was exacerbated by the limited time resource they have as an online programme.

Mary (T)(CS1) We have found it incredibly frustrating. I think it is really frustrating and it really frustrates the kids because they are there for a particular time and then it doesn't work and it gets quite annoying for them. (Focus Group Interview 1 – 29th June 2010)

The frustration of technical problems was also noted in the field diary. With respect to one specific online interview, technical problems occurred. This particular experience was frustrating and *lived* by the researcher. The technical problems experienced led to deeper personal understandings of how frustration may have been experienced by participants.

[Research Diary: Monday 21st June 2010

I had a disaster today trying to hook up an audio and computer link for the interview with Peter. Not the interview, I didn't even get to that. Firstly, we had no computer access and his cell phone kept on cutting out, we couldn't use a phone in his school because they had a toll bar on it and then the school didn't know what the extension was. I have experienced and now

understand the frustration experienced by the students and teachers when the technology doesn't work.]

4.3 How do participants experience the functions of empathy within SMC?

The focus of Research Question 2 was on *how* participants experience the functions of empathy within SMC. Areas of interest were established to specifically focus on the sub-questions of Research Question 2. These included how participants experience a supportive environment, the bond or relationship between participants, the ability to predict others, a sense of belonging, and cues used in language modulation. In the same approach as section 4.2, the focus group discussion represents a re-engagement of participants with the responses from the initial one on one interview in a hermeneutic circle approach.

4.3.1 A supportive environment

4.3.1.1 Phase 1a: Initial one on one interview

For some participants a supportive environment is created by the particular way the teacher structures the online environment and conducts the class. This is most vividly experienced by feelings that they are treated as individuals and shown patience and caring by the teacher.

Joshua (CS2) The way in which the classes are conducted. The focus isn't spread out, they talk to you separately as well, and they don't talk to you as a group. They mention names and they talk to individuals as well as the group. You know that you are actually part of the group and being included as well. (20th May 2010)

Rita (CS2) If we don't get the right answer she won't tear it out of us, she won't get angry about it, she will ask why we don't understand it. Then she will put it in a context that we will

understand it. It is really supporting knowing she is there helping us and she wants us to learn. (17th June 2010)

A supportive environment is also experienced through knowing others are taking a personal interest in you. Jessica's view was representative of what a number of participants expressed.

Jessica (CS1) She just sort of asks how it is all going and makes conversation about how I am feeling about the whole thing. (3rd June 2010)

The supportive environment is not only created by the teacher, but also by other students. As Jimmy and June outline, there is a feeling of being backed-up by other students which also comes from being part of a collaborative or team effort.

Jimmy (CS2) I feel supported when you give an answer and everyone else is with you. You feel that everyone is backing you up. This is especially when they chip in with their two cents worth as well. (4th June 2010)

June (CS1) My teacher and I really liked one of the questions, but we needed to re-write it, but didn't have any idea of how to do it. So we threw it out to everyone and three people gave three different versions of what they would say. I actually used one of them. (13th May 2010)

Another indicator of a supportive environment came in the form of actions or behaviours of the teacher that participants knew were not compulsory. Examples of this included offering additional support after class, or even the offer of additional contact with students that they knew was beyond what they normally expect from their teacher.

Jack (CS2) Yeah the teacher always offers extra if there are any questions at the end. But I have noticed that when she does that, everyone is still there. (18th June 2010)

June (CS1) I don't think any other teacher would go out of their way like that. (13th May 2010)

4.3.1.2 Phase 1b: Initial focus group interview

These ideas were built upon during each of the focus group interviews, mainly highlighting that the support was growing from both the teacher and the other students. This, they also believed, was the result of interaction and familiarity increasing with each other. Susan's view was representative of all three focus groups.

Susan (CS1) ... the support is growing as we have gone through the year, as we are getting to know each other more. Probably as a group we are getting supported a bit more from the teacher. (Focus Group Interview 1 – 22nd June 2010)

The discussion of the Case Study 2 student focus group moved to the potential effect of increased visual interaction. Discussion was focused through the exploration of the role that increased visual cues may play on the support within the online session. The culmination of this discussion was succinctly expressed by Joshua, who managed to summarise in just two words what the other participants were trying to explain about how this may help.

Interviewer: Do you think that a video linkage would make a difference to how you feel supported?

Joshua (CS2) Yep.

Interviewer: How?

Joshua (CS2) Facial expressions. (18th June 2010)

For the teachers, the creation of a supportive environment was also important. It was about creating an environment that focused on personalisation for participants that facilitated a more encouraging approach.

Mary (T)(CS1): It is individualised [referring to video image], even making sure you are saying their names when you are online.

Kathryn (T) (CS2) I agree completely. I have got eight kids in this class and it is individualised because I do have to prompt them. By calling their names and jollyng them along that way. (Focus Group Interview 1 – 29th June 2010)

4.3.2 The strengthening of a bond between themselves and others

4.3.2.1 Phase 1a: Initial one on one interview

Although the participants experienced a strengthening bond, this bond appeared to be growing faster between those who interacted most often. For nearly all participants, this meant the bond grew stronger more quickly with the teacher rather than other participants, because it was with them that they interacted most often and to the greatest extent.

Joshua (CS2) The teacher takes up the majority of the talking in the class and you relate more to what they are saying because you don't really hear the other students ... Yes [said with confidence] I am starting to feel that I am part of a group. (20th May 2010)

June (CS1) ... conversations and stuff do make you feel part of a ... like a wee club I suppose ... I am more, like, going from having no relationship whatsoever with them to being sort of acquaintances. (13th May 2010)

For many of the participants, there was a belief that the more interaction or inclusion the greater the feelings that a group appeared to be developing.

Kathryn (T) (CS2) So yeah, the more often we have a session the better it is ... there is a feeling of a community of sorts I guess ... and being included. (17th June 2010)

This perspective is also supported by those participants who have experienced less bonding through less interaction.

Jessica (CS1) Yeah, I feel closer. Not as close as the other ones are to each other because they have twice as many online sessions.

Interviewer: Do you think the amount of closeness is related to how much online time you spend together?

Jessica (CS1) Yes definitely. (3rd June 2010)

There was strong support from numerous participants for a contention that a significant component of building a bond is social interaction and not just task-based interaction.

Interviewer; Do you think the 'off topic' social interaction is a key factor in that closeness?

Jessica (CS1) Yeah definitely. (3rd June 2010)

One way participants perceived they had experienced a strengthening bond is through how they were getting to know the personal characteristics of the other person. Within the interview with Jack, it became evident that both Jack and the researcher were getting to understand each other better. In this case, it was through our shared understanding of another participant.

Jack (CS2) I've just picked up a few things. Just minor things with her personality, like when there is not a lot of interesting information she sort of goes bla ... bla ... bla ...

Interviewer: Bla ... bla ... bla [said with the same tonal inflections that I as the interviewer had experienced in my interview].

Jack (CS2) [laughter] Yeah [said with a shared understanding of my meaning]. Yeah. She does it a couple of times but you get that she is easy going. (18th June 2010)

For nearly all the participants, a cornerstone of the strengthening bond is an increasing familiarity with the other participants. This is often perceived to occur most readily during shared personal beliefs, values and experiences.

Rita (CS2) I suppose we have grown closer because we kind of know how that person knows and how passionate they are about the subject. ... That is what is making us a group, because we are learning together. (17th June 2010)

Mary (T)(CS1) You get to know them, you get to know what they enjoy, what they are doing in terms of subjects and what things are happening in their lives. (28th April 2010)

For many of the participants, the context for increasing understandings of each other was in relation to their lives outside the online session. For participants, increasing familiarity meant learning more about who they really are.

Mary (T)(CS1) They talk about camps they have been on ... the tournament next week ... Peter is right into [REDACTED] ... We hear about field trips in Geography. (28th April 2010)

For at least some of the participants, learning about each other is not just a result of casual social interaction, but a conscious intent to get to know the other participants. For Sally and Harold, who represent several participants in this belief, it is an objective driven by a motivation to improve the ability to interpret others.

Sally (CS2) ... we put a lot of effort into getting along with each other even though we don't know each other. (19th May 2010)

Harold (CS2) ... when we are like chatting or talking to each other you want to get to know them because they are in your class.

Interviewer: Do you think that makes you more open to sensing their tone of voice and those sorts of things?

Harold (CS2) Yeah! Yeah! Yeah! That's it! [said with strong confidence]. (20th May 2010)

As Joshua outlines, there are, however, greater challenges creating this bond in online environments in comparison to face to face environments. The major reason Joshua and other participants believe this to be the case, may be the lack of eye contact.

Joshua (CS2) ... it is easier to communicate with the teacher in a normal classroom with eye contact and face to face talking. (20th May 2010)

4.3.2.2 Phase 1b: Initial focus group interview

Susan and Jessica from Case Study 1 believed that with the increasing bond there were increased shared understandings that made it easier to interpret each other. The example given below suggests there are a great deal of subtle aspects of jokes and humour that familiarity with the other person is required to get the full underlying meaning.

Susan (CS1) ... like at the start of the year if there had been a joke we wouldn't have all got it, we do now that we are getting to know each other a bit more.

Jessica (CS1) Yeah I definitely agree with that. (Focus Group Interview 1 – 22nd June 2010)

June believed that although there were groups of students who participated actively within the online class, there were also participants who were not as responsive. The view below was representative of all three focus groups. June, however, was able to outline in more detail the processes the teacher was trying to go through to engage these students, especially the male students, through probe questions and prompts.

June (CS1) When the boys were online I didn't hear anything from them. I hardly heard anything from them really. The only thing I heard from them was when Mary asked them a direct question. (Focus Group Interview 1 – 22nd June 2010)

The participants also emphasised that increasing one's familiarity with others not only occurs with respect to oral communication. Through interpretation of their written language and text language, mannerisms and personalities can also be gauged.

Jimmy (CS2) When they are typing things down you get to see their mannerisms and all that sort of stuff. (4th June 2010)

This strengthening bond also appeared to be gaining its own momentum with the students becoming more proactive and engaging in each subsequent online session. As outlined in the example below, Kathryn identified that there appeared to be a number of proactive acts by students to build stronger relationships through trying to increase social interaction.

Kathryn (T) (CS2) I think there is some other stuff going on. Like one student uploaded the URL address for a YouTube video that his school had made and he was telling the other kids to log in and check it out. There is some wider stuff going on there which is encouraging. (Focus Group 1 – 29th June 2010)

The increasing bond or relationship was also detailed in the research diary. First, through the use of an initial pre-interview familiarisation and technical check session and through the iterative online interview methods, a strengthening bond was experienced by the researcher toward the research participants.

[Research Diary: Monday 17th May 2010

The 5 min session has been fantastic for enabling the first interview to be more fruitful. It is almost like we already know each other.]

[Research Diary: Tuesday 27th July 2010

The relationship is certainly building and this is after one 5 min session, a one on one interview and two focus group interviews – 4 sessions. It appears from the last one on one interview that our relationship is starting to grow in familiarity with each other and the development of shared understandings.]

4.3.3 *An ability to predict the behaviours and/or attitudes of others*

4.3.3.1 *Phase 1a: Initial one on one interview*

Participants reported a number of factors that influenced their ability to interpret others online. It also appears they had some understandings of *how* these processes worked. A wide range of participants from both case studies reported these factors and their understandings of the processes involved.

Sophie (CS2) ... if you know somebody is going to be happy they are going to have a happy, joyful uppie downie voice [all said with higher pitch happy inflections] and if they are sad then they will have a real monotone voice like this [said in lower monotone voice]. (7th May 2010)

Joshua (CS2) ... it depends on how much their attitude is portrayed through their voice. (20th May 2010)

Rita (CS2) Some people are really animated in their discussion and some people are really hard to pick up because they only give one word answers. (17th June 2010)

Sophie (CS2) You can 'hear' if they are angry or sad. (7th May 2010)

June (CS1) ... when they don't seem interested, their voices turn off. That's not a very good way to say it but they don't sound interested any more. Yes, like your tone of voice, like you are quite interested in what I have to say. (13th May 2010)

Edmond (CS1) ... if you can pick up they have more heat or anger in their voice you can naturally pick up they are not enjoying it. (15th May 2010)

Rita (CS2) You can pick that up, like when you can't see someone. (17th June 2010)

A significant factor in increasing interpretive accuracy appeared to be the experience of previous interactions. Many of the participants believed those with whom they had interacted with most, were the easiest to predict.

Kathryn (T) (CS2) If I have heard them, or they have responded to me in some way I think generally I can pick where they are at ... from the way that they respond. (17th May 2010)

Sally (CS2) The teacher is probably the easiest to pick up on because we hear her so much, so we have sort of got familiarised with what she is saying. (19th May 2010)

The challenge for many of the participants with respect to interpretive accuracy is the negative effects of technical difficulties. These create a narrower band of interpretation and therefore the potential to miss other important contextual information.

Sally (CS2) Like I said before, it is really hard because you are concentrating so hard on what everyone else is saying that you are not really bothered about other things, just what they are saying. (19th May 2010)

Edmond (CS1) ... it's just like any regular conversation. If you are more focusing on something else then you don't pick up, on things that you would subconsciously pick up. Like people's emotions they don't generally display. (15th May 2010)

A significant point discussed by several participants was the effect of the lack of visual cues on interpretive accuracy. As Jimmy and Edmond note, a lack of visual cues makes it more difficult to interpret others. This view was held by many of the respondents.

Jimmy (CS2) It's difficult without actually seeing them to get an idea of what they might be thinking, or want to say, or might feel about the subject. (4th June 2010)

Edmond (CS1) You can't read peoples' facial expressions through the telephone. (15th May 2010)

As Jack, June and Harold outline, it appears in the absence of these visual cues, SMC participants create their own visual representation of what the other person may be like.

June (CS1) ... when I am online I imagine her as if she is in front of me when I talk to her. (13th May 2010)

Harold (CS2) Because you can't see them, you get a picture in your head. (20th May 2010)

Jack (CS2) That kind of visualising, getting image or perspective of who somebody is, I think that is an automatic sort of thing people do. It is probably how you recognise people. (18th June 2010)

The ability to interpret others appeared to be sometimes made more difficult by participants shielding their true feelings or emotions. As Jimmy suggests, this is a process he himself has used.

Jimmy (CS2) It's that sort of human thing where people put up these barriers. If they are talking on the phone they are not really going to be going "Oh, no, no." [Said in a depressed voice] they will speak normal, so that nobody will get this, or pick up on things. That happens sometimes. I know I have done it as well. (4th June 2010)

Participants also believed that interpreting others was an important process, as it helps to improve your understandings of their thinking and motivations to learning. The following response by Jimmy is representative of many of the responses in relation to this idea.

Jimmy (CS2) I think it is important. It definitely helps to get the idea of what other people are thinking. (4th June 2010)

4.3.3.2 Phase 1b: Initial focus group interview

The predominant use of the oral medium for communication during SMC sessions emphasised a concentration on the voice as a central tool for interpretation. June from Case Study 1 summarised this idea and the benefits that this provided her the ability to shield her true feelings. She was also thankful she was able to shield herself in some way. She also noted the importance of the voice in interpreting others.

June (CS1) I definitely agree with that. There have been a few times that I thank that I wasn't in a normal classroom. I definitely agree with that one and especially through their voice you can automatically tell if they are stuck. (Focus Group Interview 1 – 22nd June 2010)

The effect of greater experience of others leading to increased abilities to interpret and predict was also a point of general consensus within Case Study 1.

Interviewer: Jessica, do you think there has been an increase in your ability to predict others?

Jessica (CS1) Yes, as I have got to know Mrs Smith better, over time.

Interviewer: ... do you think you are able to predict better than you were able to before?

Susan/June (CS1) Yes definitely/absolutely [simultaneous]. (Focus Group Interview 1 – 22nd June 2010)

For the teachers' focus group, there was strong agreement with the use of the tone of voice to predict others. Kathryn also identified differences between male and female students in their level of interactive engagement within the online sessions.

Kathryn (T) (CS2) Yes it is definitely through voice and tone ... The more interaction with them the better it is. Predicting the attitude side of things, the boys, as you say, excluding Harold, they are pretty much consistently the same but with the girls, they are much more giving of information. They are much quicker at giving answers unprompted. I think that the boys and the girls probably have different opinions of each other in the class as well.

Mary (T)(CS1) I am agreeing with Kathryn. Certainly the voice and the tone especially. (Focus Group 1 – 29th June 2010)

4.3.4 A sense of belonging to a group or online community

4.3.4.1 Phase 1a: Initial one on one interview

A sense of belonging appeared to come from feelings of being part of a group, a community or a relationship with others through shared experiences. In their feelings of belonging, participants described their experiences in a number of ways including feelings of intimacy, community or grouping.

Jimmy (CS2) Somewhat yeah. ... You do feel kind of more intimate with the group. (4th June 2010)

Kathryn (T) (CS2) ... there is a bit of a collective thing there. So there is a feeling of a community. (17th May 2010)

Jack (CS2) I wouldn't call it a social group it's more a learning group at the moment. (18th June 2010)

Rita (CS2) That is what is making us a group, because we are learning together, that's what makes us a group. Because you are going through similar things. (17th June 2010)

Sophie (CS2) Yep, you know there are other people out there and there are people doing the same thing as you so there is a group of you that are probably struggling away on the same thing. (7th May 2010)

Increasing familiarity between members of the group was the main reason participants believed they were feeling part of a group. As Mary outlined, it is not only facilitated by synchronous interaction but also asynchronously via email. For Sophie and June, these feelings of attachment to a group were encouraged by the teacher taking an interest in them and making them feel included.

Mary (T)(CS1)... it's not all online stuff, there is huge number of emails that go between them and me in the course of a week. (28th April 2010)

Sophie (CS2) She will go around the group and make sure everyone is included, so that is why you feel you are part of a group. (7th May 2010)

June (CS1) Mary really brought us together in a way by asking what we did in the weekend and what we do for sport and stuff ... I think that the online group that we have has just brought out different conversations. (13th May 2010)

4.3.5 Cues to help in language modulation

4.3.5.1 Phase 1a: Initial one on one interview

The most clearly distinguishable cue that participants understood to have assisted them in language modulation was the *pause*. The teachers also knew they could structure the interaction through the use of questions and prompts specifically targeted to an individual. They also knew modulation of language was also supported through the timing of questions, and emphasis of questions, graphics or visual presentations.

Kathryn (T) (CS2) I will either throw out a question or I will write up a question on the whiteboard [referring to the online whiteboard] ... the way I usually do it is I will prompt. (17th May 2010)

Joshua (CS2) ... a pause in speech or the mention of my name. (20th May 2010)

Jimmy (CS2) When there is a pause, everyone else is completely silent. They are doing their work, or the teacher is just moving on to the next slide, or finding something else. (4th June 2010)

Language modulation was also experienced mainly through set routines or practices, however, these needed to be established over time and be taught to the participants. There appears an established routine of not talking when the teacher is talking which appears to ensure the teacher is the modulator of the online dialogue. In addition to these strategies, Harold outlines that Case Study 2 students are also encouraged to use the emoticons available within the software.

Harold (CS2) They have this thing like when the teacher is talking you don't talk. They also have these things on the side of the classroom website where if you have a question you can click, 'I am leaving the room' or 'I have a question' or 'I

don't understand', 'could you talk slower or clearer' it helps out the session. (20th May 2010)

For some of the participants, when the routines either had not been completely established or explicitly taught, confusion was experienced in relation to when they could, or should respond.

Rita (CS2) ... sometimes we don't know exactly who she is talking to, so everyone is silent ... That is really difficult because you don't know when to communicate unless she pinpoints you right out. Like "Rita, answer this question bla de bla de bla". (17th June 2010)

Sally (CS2) ... you sit there and you want to ask something but the teacher is still talking and you think "when do I ask, when do I ask" without cutting her off. (19th May 2010)

4.3.5.2 Phase 1b: Initial focus group interview

An idea that was expanded within the teachers' focus group was related to possible differences in the cues used in language modulation between SMC and face to face classroom environments. Most respondents believed many of the cues used in SMC were similar to face to face environments. For Kathryn, who was representative of many respondents, there was a belief that a knowing when to respond was mainly about listening to the *tone* of others' voice.

Kathryn (T) (CS2) It is just the listening to the tone and understanding where they are at with the information as well. (Focus Group 1 – 29th June 2010)

4.4 Emergent themes

Section 4.4 summarises the range of additional understandings and ideas that were identified from Phase 1. These ideas and understandings were identified as being outside, or an expansion on, the two preliminary research questions. The exploration of

these ideas was still in line with the research intent of promoting understanding of the nature and function of empathy in synchronous multimedia conferencing. These findings were also used in the development of Phase 2 interview schedules in line with the overall iterative research strategy (see Figures 3.1-3.3).

Figure 4.1 summarises the categories that were identified and sub-coded from the Phase 1 data coding. It contains twelve branch categories that were ultimately used to code the data. These categories are expanded upon within section 4.4, with each category's location in this section indicated in Figure 4.1 (for example, Comparisons of Empathy are to be found in section 4.4.1). As each transcript was coded, ideas and understandings were identified and coded to representative categories that were developed by the researcher. Each of the thematic categories comprises a collection of ideas and understandings shared by respondents that were found to be related. If new understandings did not match existing categories they forced the creation of a new thematic category. At the completion of this coding process, twelve thematic categories were developed which encompassed the emergent ideas and understandings (themes) from Phase 1 (see Appendix R for examples of NVivo® coding and Appendix S for themes and ideas for sub-coding of each of the sub-categories 4.4.1-4.4.12).

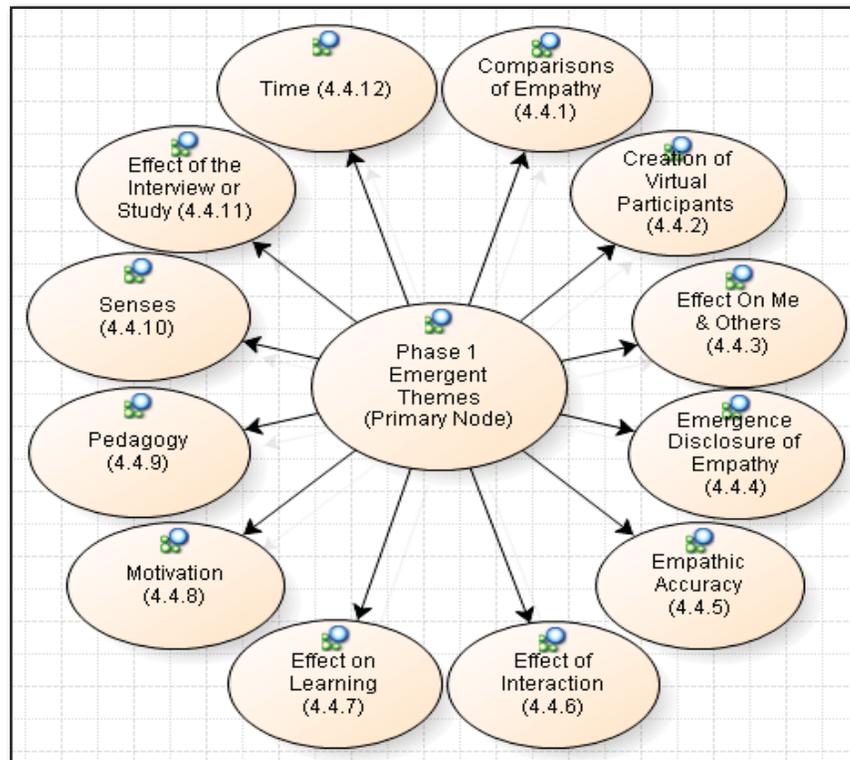


Figure 4.1 NVivo® emergent theme category modelling for Phase 1 data coding

Within the following sections, only examples of participant responses that provide an effective summary, or are particularly pertinent to the thematic category are presented. As opposed to the previous section, focus group contributions are not separated from one on one interview examples but are integrated into the ideas presented.

4.4.1 *Comparisons of empathy: Participants and environments*

For the majority of respondents, the female participants were perceived as more ‘*out there*’ and interactive, compared to the male participants. Females were perceived as more talkative and engaging in social discussion. For June, Rita, and Jimmy, who were representative of responses from the other students, a belief existed that the online environment appeared to socially replicate the social environment of a normal classroom with respect to the male/female social dynamics.

June (CS1) ... the boys will do their ‘shutting off in the corner act’ and only speak when they are spoken to. (13th May 2010)

Rita (CS2) Occasionally you will get a guy who will put his two cents in, but a lot of the time the guys don't do it as much as the girls. (17th June 2010)

Jimmy (CS2) ... the girls seem as they are a bit more, 'perky', whereas the boys are the type to sit in the back and keep quiet about what they are thinking. There is your normal sort of social groups within an online classroom. The boys are your ones who keep to themselves and the girls are out there and doing their own thing. (4th June 2010)

At least for Harold, this type of response pattern is what he expects is normal for boys and merely how males tend to understand and not specific to the SMC environment.

Harold (CS2) Girls seem to be more interactive, whereas the boys, if they get asked a question they will answer it, but if not, they will like just kind of sit back and wait for the answer to be given, that's how they understand. (20th May 2010)

Comparing the empathy online to a normal face to face classroom, it appears that students generally felt a greater perceived *distance*, less connectivity and less intensity within the interaction.

Joshua (CS2) I think you feel a little bit more distant in the conferencing class rather than a normal classroom. You feel a little more connected in a normal classroom with the teacher and the other students. (20th May 2010)

Mary (T)(CS1): I don't think it is as intense as an actual classroom. (Focus Group Interview 1 – 29th July 2010)

For some participants, the face to face classroom in comparison to the SMC environment offered less opportunity to *hide* from giving responses because the online SMC teacher is more proactive in engaging them within the interaction. This may have

important implications for the size of groups and the role of this influence on student engagement.

Jack (CS2) I think that when a question is asked in the classroom it is far easier to wait for someone to say something because there is not that direct question. Online, if someone is asking you a direct question you are more inclined to answer. It is a lot easier to hide [referring to a face to face classroom]. (18th June 2010)

In comparing SMC online and face to face classrooms, students also believed that because of less off-task social interaction in SMC environments, time spent within SMC sessions was proportionally more productive for learning.

Harold (CS2) There's a lot less social time [referring to SMC]. ... You are keeping yourself focused more than if you have friends next to you in a classroom. You start socialising and getting out of work [referring to face to face classrooms]. In these online sessions you are able to stay on work. (20th May 2010)

Sally (CS2) It's not like in a normal classroom where you can talk to the other people and stuff. Because you sort of have to listen harder, so you can hear what everyone else is saying. In a normal class you would be able to talk to other people and still pick up on what the teacher is saying, if you know what I mean. (19th May 2010)

However this reduction in *background* social interaction may, in turn, have a negative effect on the formation of a social bond. Participants also believe this bond is important to the overall effectiveness of interpreting others.

Jessica (CS1) Interpreting the teacher is quite similar, but interpreting the classmates is a bit different. We don't talk about social things like I do with Mrs Smith. (3rd June 2010)

There was also general belief that the use of less obvious social cues within SMC may also create problems. Without access to explicit social cues, a teacher may end up embarrassing a student who does not know the answer to a question. During a face to face interaction a teacher can see visually when a student is not ready to respond or a student who could make a potentially embarrassing response. It appears that a lack of access to these less salient cues may therefore reduce empathic accuracy within SMC.

Even though respondents identified less salient interpretive cues, many were also still able to recognise many similarities between the empathic cues used within online and face to face classroom interactions. It appears for many, the main difference is not the environment but the perceived time constraints, which leads to a greater focus on the task as opposed to social interaction.

Jimmy (CS2) Yeah. The same borders yeah. (4th June 2010)

Edmond (CS1) It is more or less the same. It's regular interaction with people ... It's not as close a group as a regular classroom sort of a group ... interaction is more purpose orientated than it is social. (15th May 2010)

A comparison of interaction between the online text environment and oral communication produced an interesting finding. For Kathryn, the teacher of Case Study 2, there was a belief that the male students tended to share their understandings more freely within the private text chat environment rather than orally.

Kathryn (T) (CS2) I can probably gauge their emotional side of things a lot more within the chat box than I can with their 'harrumphs' and 'yips' and sighing. ... They are more willing to talk in a chat room than they are verbally. (Focus Group 1 – 29th June 2010)

As Kathryn outlined, the boys appeared more prepared to engage with the teacher within the text chat environment rather than in verbal dialogue. The texting environment

may, therefore, be empowering for certain groups of students. This finding may also be influenced by student's prior experience and confidence with cell phone text chatting. This finding may in turn have important implications for how teachers attempt to engage their students within SMC.

There was also an interesting point made about the comparison between the focus of a SMC session, in comparison with the experiences of those students who had been involved in video conferences. For these students, of whom Jack was representative, SMC sessions, they believed, facilitated 'a focus on the visual learning content' as opposed to 'talking to each other about the learning content' in video conferencing. Within the SMC environment, students reported that their attention was continually drawn to the shared digital object, such as a word document, image or presentation. Those students who made comparisons with video conferencing believed the experience had less focus on this digital content and more on personal interaction. There was a belief the learning content came through other people and the teacher in video conferencing as opposed to the learning content coming through a focus on the learning content itself within SMC.

The facilitation of a focus on the oral and visual content presented within the SMC sessions was also recorded in the research diary. The observation below was specific to the SMC facilitated online training the researcher received for using the NVivo® software.

[Research Diary: Friday 4th June 2010

I find that there is not the distraction of overloaded sensory information. When we are online I am only concentrating on what she is saying, the software package, what she is doing and how she is saying it. Therefore I feel I am able to focus more concentration on the learning concept and not be side tracked by the looking or smelling or proximity sensing.]

A number of participants who had experienced video conferencing also believed that having the video on them whilst they were discussing learning content made them a little nervous. It appears the use of video imagery of individuals within synchronous

conferencing has both positive and negative effects and these are dependent on the specific context in which the video image of the person is used.

4.4.2 Creation of virtual participants

Due to the lack of a visual image of other participants, it was the experience of many of the respondents to create their own ‘visual picture’ of other participants. It appears these images are generated from the range of factual and interpretive information participants have already gathered about the person, such as, tone of voice and response type, as Rita and Lucy outline.

Rita (CS2) I imagine her to be a little bit tired. She always sounds a little bit tired you know ... it's really cool because you can hear when she is really excited that someone's got something right or someone is on the right track or people are doing stuff. You can tell by her tone of voice it gets higher and she gets happier. (17th June 2010)

Lucy (CS1) ... you can kind of hear her smiling, if that makes sense ... She has expression and it is all not just one tone. (17th June 2010)

These virtual characters seem to be easier to create the more *out there* the students or teachers are.

Jimmy (CS2) For a few of them, yes. For a few of the more outspoken ones, Yes! (4th June 2010)

Jack believes this is a natural process that is just being used within the SMC context.

Jack (CS2) That kind of visualising, getting image or perspective of who somebody is, I think that is an automatic sort of thing people do. It is probably how you recognise people. (18th June 2010)

In creating this image, Harold and Lucy suggest students match previously experienced emotion and facial expression with an online emotion and therefore create an expected visual representation. For other students it is matching a previously experienced person with a similar personality and transposing that person to the visual perception of the other online participant.

Harold (CS2) You kind of picture it in your mind that she is smiling or whatever ... I wouldn't say a full-on confident picture what she looks like, just a warm person, kind of like giving positive vibes ... you can match the tone of her voice with how her facial expressions might have been. (20th May 2010)

Lucy (CS1) She reminds me of another teacher I have at school, so I kind of assume they will, not look the same, but look alike. (17th June 2010)

June went on to express how this process appeared to help her in her learning, creating a more personal experience for her.

June (CS1) It's actually helped me because when I am online I imagine her as if she is in front of me when I talk to her. (13th May 2010)

The building of a visual image of other participants within the SMC sessions was also noted in the research diary. Many of the ideas expressed by participants related to the visual image generated of another were also experienced by the researcher in the course of working online with the NVivo® trainer.

[Research Diary: Thursday 3rd June, 2010

I am developing a visual image of [REDACTED] as I am having more online sessions. As more interaction occurs I am building a stronger and perhaps more reliable picture. I haven't actually seen an image of [REDACTED] yet. I am also certainly finding that I have a sense of focusing more interpretive energy into the senses that are being used like the content of her discussion,

offers of help and compassion and also the way she is talking such as the tone and inflections.]

With respect to the two teachers involved in the research, interesting observations were also made in the research diary about how a visual image of them developed over time.

[Research Diary: Tuesday 29th June

I felt that I have been able to establish a rapport with both Mary and Kathryn and that there is a degree of visual imagery that develops when one is online. In reflection, I also find that this imagery is developed through the words spoken, tone of voice, actions offered or done for me. These all seem to be combined into a match with a person or persons who I have previously met or who have similar characteristics, thus giving a picture of them in relation to age, facial expression, etc. Kathryn has been different as I already had met her in person. However, I am finding that the interviews with her are adding not from a visual aspect it is adding from a personality perspective.]

4.4.3 The effect of empathising on me and others

For many participants, being able to empathise online had many positive benefits. This was not only in terms of learning but also in terms of their motivation to learn.

Interviewer: Do you feel that interpreting others online and finding out what they are like influences your learning?

Jessica (CS1) Yes definitely, because you have got to know what they are saying to understand what you are learning. (3rd June 2010)

Joshua (CS2) Not being able to interpret what they are saying or what they are trying to get across might make it difficult to complete tasks if you are not sure about their view on it. (20th May 2010)

Harold (CS2) It makes you want to pick up your game and answer questions as well. (20th May 2010)

The encouragement experienced by Jimmy led to a boost in confidence and better feelings about his success. For Rita, a shared enthusiasm improved motivation, and for Kathryn, it was being able to assess that she was on the right track.

Jimmy (CS2) You do get that feeling she is actually encouraging me. It's something you can understand, you know where she is coming from ... I definitely think I feel supported when you give an answer and everyone else is with you ... You get that boost and you feel better about what you have said. (4th June 2010)

Rita (CS2) It feels good to know that somebody really is enthusiastic about the subject that you are enthusiastic about, as well. (17th June 2010)

Kathryn (T) (CS2) It felt like I was on the right track, I had managed to pick the way they were feeling about it. (17th May 2010)

Mary (T)(CS1): It makes you feel cool, yeah. Good. (28th April 2010)

For the teachers, a significant personal outcome of empathic engagement was improvement in their familiarity with the students and, in turn, the ability to have a more personalised relationship.

Kathryn (T) (CS2) Yes [said very confidently] absolutely. ... Knowing a little bit about them, knowing they have been off doing [redacted] competitions or whatever, you can get a good idea of what type of person they are. ... they have a much more kind of personalised conversation with you. (Focus Group Interview 1 – 29th June 2010)

Other changes for participants that were experienced through empathic engagement involved feelings of intimacy or belonging with a group. It appeared that with those feelings of belonging came feelings of greater trust within the group, as indicated by Mary who believed over time students became trusting enough to share exactly how they felt.

Jimmy (CS2) I do feel kind of more intimate with the group. (4th June 2010)

Sophie (CS2) Um, good feeling yeah ... you feel you are part of a group. (7th May 2010)

June (CS1) ... makes me feel like she is there not only as my History teacher but anything else. (13th May 2010)

Mary (T)(CS1) I think now we are getting to half way through the year they will say "I am not really good today" and say exactly why and they are not actually worried about doing that. (Focus Group Interview 1 – 29th June 2010)

For some participants, like Rita, there was a realisation that she was able to transfer energy or emotion across distance. Rita shared an insightful metaphor of how she experienced this phenomenon.

Rita (CS2) It is kind of like when you are walking down the street and you smile at somebody and they start smiling and then everyone starts smiling, it's sort of the same thing. (17th June 2010)

If the process of learning about others, or what you find out about others is an enjoyable experience, then this appears to have a motivational effect on participants to get to know each other.

Harold (CS2) ... you are thinking "well this person is really cool and I would like to get to know them more". (20th May 2010)

For Kathryn, who was representative of a number of participants, the process of empathising is hard work and exhausting. This may be because participants are using new interpretive skills and strategies they are not used to. They may also be using existing interpretive skills more intensively than in normal face to face interaction.

Kathryn (T) (CS2) It's exhausting. There is a reason why it's exhausting at the end of it. Because you have worked hard to try to figure out what is going on with these other kids. There are not as many cues. You have really got to infer a lot. You do try to, you know. (17th May 2010)

4.4.4 The emergence/disclosure of empathy

For many participants, there was a strong motivation to get to know the other participants. To do this they appeared to be proactive in eliciting responses from others. This was not only with the assistance of the teacher, but also of their own accord. Some participants were also found to disclose their identity actively online in an effort to elicit the engagement of others.

Kathryn (T) (CS2) I often come into my class and there is a huge amount of conversation that has been going on in the chat box. Everything from where about in the country are you again, through to "how did your [REDACTED] thing go in the weekend?" "How are you going with such and such?" (Focus Group 1 – 29th June 2010)

Harold (CS2) What I have been doing is asking the students questions instead of the teacher and wanting to get to know them more and not be strange. (20th May 2010)

Mary (T)(CS1) I get photos of kids, trying to get the relationship going even more. (Focus Group 1 – 29th June 2010)

For some participants, SMC also provided an opportunity to use ‘limited exposure’ as a defence or barrier mechanism. As outlined by Jimmy, the ability to shield true feelings or states of mind enabled his participation without the hassle of others wanting to know more about possible problems.

Jimmy (CS2) It's that sort of human thing where people put up these barriers. If they are talking on the phone they are not really going to be going "Oh, no, no." [Said in a depressed voice] they will speak normal, so that nobody will get this, or pick up on things. That happens sometimes. I know I have done it as well. (4th June 2010)

The ability to selectively disclose one's self seemed to enable participants' greater confidence to participate more fully. Participants believed that the ability to be confident hiding *behind* the technology facilitated their increased participation within it. The use of the text chat environment as opposed to oral discussion for the male students appeared to facilitate this situation. For Kathryn, one of the teachers, the male students appeared more comfortable sharing ideas within this textual environment rather than orally.

Kathryn (T) (CS2) I think the way that they feel about something at a particular time can be elicited by that and probably more so especially with boys. [Referring to the text 'chat room']. They are more willing to talk in a chat room than they are verbally ... I can probably gauge their emotional side of things a lot more within the chat box. (Focus Group Interview 1 – 29th June 2010)

It also appears that participants were able to be more confident within SMC, through being able to create a more confident online persona. Respondents also suggested they felt more confident to put an opinion forward without having to take the risk of personally accompanying their response. The selective disclosure of self to others was also noted in a reflection within the research diary where this effect was identified with respect to the participation of respondents within the interviews themselves.

[Research Diary: Saturday 3rd July 2010

It appears unlike face to face, SMC offers the opportunity for participants to employ emotional hiding and selective personality release and hence control the degree to which they portray themselves within the online environment. The multimedia environment can be used as a rapid empathic distance creator by just limiting the sensory information participants can receive unlike face to face interaction where it is obvious if you try to 'hide'.]

4.4.5 *Empathic accuracy*

There are often errors in interpreting others and, as Jack and several other participants suggest, this may be due to a loss of meaning because of fewer contextual cues available within SMC.

Jack (CS2) In some ways it is taking away the meaning of whatever the context of the information is. (18th June 2010)

This view is highlighted when communication is restricted to an even more contextually restrictive 'text chat' environment. Within this environment, a predominance of segmented written language, codes, and emoticons were experienced.

Jack (CS2) That text chat thing, a few messages have been slightly misinterpreted a couple of times just basically because you can't get their ... what their ... you know ...

Interviewer: Full perspective?

Jack (CS2) Yeah! (18th June 2010)

Alternatively, several participants including Rita also noted that empathic accuracy is positively affected by participants who present emotionally rich responses. It appears that empathic accuracy is reduced through a lack of experiential knowledge of the person.

Rita (CS2) It is very hard, like some people are really animated in their discussion and some people are really hard to pick up because they only give one word answers ... I don't know them enough to know what they are thinking. I don't know enough about these people. I can't tell how they are going to react to something. (17th June 2010)

Therefore, there is strong support from a number of respondents for the contention that the participants who are more easily interpreted are the most interactive, the most passionately engaged, and those that have been experienced most.

When clarity issues arise with the audio, participants have also noticed a narrowing of their attention from experiencing the whole context down to just focusing on one component of the context.

Harold (CS2) ... you are not able to get their expression over the phone. (20th May 2010)

Susan (CS1) If you are trying to concentrate on listening rather than how it is said and you are just trying to hear it. (Focus Group Interview 1 – 22nd June 2010)

4.4.6 Effect of type of interaction

Empathy appears to be influenced by the type of interaction of the participants. A focus on the individual within the interaction, Joshua and Jimmy suggest, is an important factor in increasing the accuracy of interpreting others.

Joshua (CS2) One on one talking. One on one conversation. Questions being asked individually. (20th May 2010)

Jimmy (CS2) I would say that if you had a chance to talk to each other, just each other more often (4th June 2010)

For some participants, increasing interaction may result in increasing experiential knowledge of each other. This, respondents also believe, may lead to a greater ability to predict future behaviour and attitude. This familiarity with others, participants also believe, will lead to a more relaxed and safe online experience. This point is noted by Rita.

Rita (CS2) ... the more you talk to someone the more you feel closer with them because the more you feel safer with them. (17th June 2010)

Although participants acknowledge the importance of increasing social interaction, they also noted that for effective learning, there still needs to be a balance between task related learning interaction and off-task social interaction.

Sally (CS2) ... more social interaction would be all right, as long as we keep the balance between the information and the social. Not one overpowering the other. (Focus Group 1 – 18th June 2010)

4.4.7 Effect on learning

The ability to interpret or understand others is perceived by many participants to help gain different perspectives on ideas, thus giving them a better learning opportunity.

Jimmy (CS2) It definitely helps to get the idea of what other people are thinking. (4th June 2010)

Jessica (CS1) ... because you have got to know what they are saying to understand what you are learning. (3rd June 2010)

Harold (CS2) It gives their perspective of whatever is online and I might be able to understand it because it is in different words. (20th May 2010)

Sally (CS2) ... you are getting different perspectives and different ways of thinking and all that sort of stuff that you are not getting from the teacher. (Focus Group 1 – 18th June 2010)

For some participants, this increased understanding or clarification is facilitated through engagement with other participants and gaining a more holistic perspective of the idea or issue.

Harold (CS2) ... you will be able to understand not only what they are saying but what they are getting out of it as well. You might be able to apply it to yourself from what you are learning. (20th May 2010)

For the teachers, the engagement of empathic interaction appears to enable them to ensure student learning is maximised. This occurs by ensuring they can identify problems within the group well before they negatively influence learning. This is highlighted by Kathryn in the following example where she appears able to predict problems before they surface.

Kathryn (T) (CS2) I can almost hear the dejection starting to come through when they start to get frustrated by the whole thing. (Focus Group Interview 1 – 29th June 2010)

4.4.8 Motivation

A number of respondents felt the ability to empathise was influenced by their level of motivation to interpret others. The responses indicated that motivation to empathise appears to have a positive effect on the level of empathic engagement. Additionally, if participants were able to interpret others successfully, this led to increased motivation to engage in continued interpretive engagement. For those respondents who were motivated to interpret others, the main reasons they believed this motivation existed was that they perceived there were benefits to their learning. This they felt was promoted

through understanding others' perspectives and the ability to monitor their own progress through other participants' feedback.

Sophie (CS2) ... you get an understanding of where everyone is coming from. (Focus Group 1 – 18th June 2010)

Joshua (CS2) It was good to know I was doing well in the class. (20th May 2010)

There also appeared to be a negative effect associated with a lack of motivation. Within both the case studies, some of the respondents believed a lack of motivation from members of the class inhibited the development of more effective empathic interaction within the group.

June (CS1) ... in the first term we had a group of boys and you could always just tell what they were thinking. They just weren't interested ... It's almost as if they don't want to be there, but that's their choice I suppose. (13th May 2010)

For Edmond, this lack of motivation he believed was representative of many of the male participants. The underlying reason he suggested for his lack of motivation, was that there seemed little point getting to know people he wasn't going to be interacting with outside class. Therefore, his focus was on the content rather than the social interaction itself. A lack of focus was representative of many of the male students' responses and is also explained by Jack.

Edmond (CS1) ... we were focusing on getting our study done rather than anything else. I was more worried about my own business there than anyone else's. ... I am more worried about the topic than the people ... I guess part of that is the distance and that I don't really have to associate with these people outside the class ... knowing opinions are always useful, but not so much further than that. (15th May 2010)

Jack (CS2) I just think that socialising, I don't want to sound like cold hearted, but the socialising is secondary to the information and the learning. (Focus Group Interview 1 – 18th June 2010)

For some of the participants it appears their lack of motivation may have also been created from the technical problems they were experiencing. As Peter outlined, technical issues played a significant role in the level of motivation he had in the online course. This was mainly due to feelings of wasting time when he could be doing something more constructive.

Peter (CS1) When it was hard for us to get on at the start I didn't really want to keep doing it because it was a waste of my time. I needed the credits and stuff and I just thought it was a waste of time and I could be spending time in another class because they do conflict with other classes. (29th June 2010)

For some of the students, a lack of motivation may have been related to daily events or issues going on in their lives at that particular time. Mary, a teacher, indicates her awareness of this affect in the following extract.

Mary (T)(CS1) Yeah, you do sometimes sense that they are not very interested today, or not in the mood, or something is going on in their lives, that they are busy with and this is an extra in their lives. (28th April 2010)

Whatever the underlying reason for the lack of motivation, both teachers agreed that it was the male students that generally lacked motivation compared to the female students.

4.4.9 Pedagogy

The online SMC environment created a range of pedagogical challenges and appears to have resulted in changes in teaching approach for the online teachers. Both respondent group programmes were structured in a blended asynchronous/synchronous manner, where learning content was provided for students to engage with before and after the

SMC session. Asynchronous online learning content was supported by the use of online SMC collaboration and discussion in both case studies.

There appeared to be changes over time in the approach both teachers took to the conduct of the SMC sessions. Greater encouragement of engagement and verbal prompting was initially required earlier in the year. This requirement reduced as familiarity developed between the participants within the group.

Kathryn (T) (CS2) The whole first term I will prompt and ask feedback from each student. Now it is getting to the point where I can ask a question and if there is no answer then I will say to them “do I need to rephrase?” (17th May 2010)

It appears there was a perceived need, from the teachers’ perspective, for the SMC sessions to be very task oriented. It was believed that there were time pressures to get through learning content because of: limited online SMC contact time with students, interruptions due to technical problems, and student unavailability at numerous sessions. This forced the teachers to emphasise to students the requirement for a significant amount of the programme to be undertaken asynchronously. Teachers, therefore, believed they needed to ensure they didn’t lose focus of the content they needed to cover during the synchronous sessions. The teachers also believed this forced a significant amount of the empathic communication into asynchronous collaborations. For Kathryn, this meant creating a focus on the content whilst trying to stay in *contact* with the students through as much empathic engagement as possible.

Kathryn (T) (CS2) It is more teaching to the content with social interaction in parallel ... if I am not tuned into listening to them, or if I am not in tune with them, or where they are at, then there is no point in me trying to talk. If I am talking at it, or ignoring them, then I may as well not even be there. (17th May 2010)

The teachers also tried to focus on presenting as much visual support for the learning context as possible. This reduced their focus on using the web cam as a tool to view

facial features, instead focusing on the dialogic engagement with the shared digital content.

Jack (CS2) I guess it's more a visual way of learning I guess ... I find that a lot more useful. (18th June 2010)

For Jack, social interaction using interpretive skills without the use of facial or body language cues is what he believes the current generation is brought up with. This type of interaction, he feels, is not foreign to the younger generation due to their use of such communication tools as phone texting and Facebook.

Jack (CS2) ... the younger generation live like that, you just look at Facebook. People don't really talk on the phone any more it's generally Facebook. It's that sort of, in my view, degraded point of social interaction, where you are not actually talking directly to the person. (18th June 2010)

This response in combination with several other similar respondent views stimulated a personal reflection within the research diary.

[Research Diary: Thursday 17th June 2010

Reflection – I think teachers and our students are thinking from a different paradigm. Students can also live in the *cloud* where they are not only face to face socialisers but also digital cloud socialisers. They are happy to exist in the cloud with texting and interpreting others using limited sensory cues. It is as if they are used to interpreting others with limited cues such as in texting, but they also don't mind doing this, and in some cases find the ability to have anonymity within this environment empowering. ... Perhaps we are in the postal paradigm where we as older teachers want to send and receive communication and also see the optimum interaction to be the re-creation of a face to face interaction via high quality video conference. However, at least a couple of students have expressed that the VC environment made them feel self-conscious.]

4.4.10 Senses

The empathic interpretation of others by participants within SMC was evidenced predominantly through listening to the meanings of the words used, the participants' tonal inflections, and the context in which these were presented. As Rita outlines, when you cannot see someone, you focus on using other senses to compensate.

Rita (CS2) Your other senses kick in. If you were blind, you wouldn't be able to see that person, so automatically you pick up their personality by their smell or by hearing them, and it is the same thing with this. (17th June 2010)

Participants also used the interpretation of written language, text language and emoticons to convey to others their *self* and in the interpretation of others.

Joshua (CS2) ... if they put a smiley face or sad face on the text then I would pick up on it ... it is hard to show feelings through text without making it obvious with emoticons and stuff like that. (20th May 2010)

Kathryn (T) (CS2) ... getting a little smiley face in the conversation box at the side ... Yes, I always use the emoticons at the start. (17th May 2010)

When exploring how participants interpreted the oral language of others, respondents emphasised the tonal inflections and other contextual information that helped contextualise the meanings of the words that were spoken.

Jimmy (CS2) ... The tone that she gives her speech in ... their 'voice'. When they are not sure of the question they are like "ohhhhh ...". (4th June 2010)

Mary (T)(CS1): ... I can almost hear the dejection starting to come through. (Focus Group Interview 1 – 29th June 2010)

When not able to observe facial expressions and body language, participants also appeared to use *experiential* understandings of the behaviour of others. Numerous examples were presented where participants suggested they were able to interpret others' personality by the acts of support or offers of helping during or after online sessions. For the teacher, a lack of response was also used to indicate what a student was thinking and how they might be feeling.

*Kathryn (T) (CS2) The lack of response I take as being a big indicator.
(17th May 2010)*

4.4.11 Effect of the interview or study on empathy

As outlined in chapter three, it was expected that the research itself may have an effect on the participants within this study. In the process of investigating these respondent group contexts, it appears there were changes in these environments through the participants' discussion of issues surrounding empathy and engagement. For Kathryn and Mary this became evident when they both experienced an increase in participation from their respective classes, which they believe was due to their involvement in the research.

*Kathryn (T) (CS2) I also think it is to do with the study. I think after
that last session that you had with them there have been a
number of changes with them and the way they are
interacting with each other.*

*Mary (T)(CS1) I would agree with that. I have seen a big change in some of
the students in the way they have been trying to interact and I
think it is purely because we have been talking about
interacting. (Focus Group Interview 1 – 29th June 2010)*

This may have been as the result of students reflecting on empathic interaction, the potential importance of interpreting others, and the possible effect on their own learning. The effect of the study reported by the teachers is also supported by the

students. Through the discussion of empathy and interpreting others, it appears this has stimulated them into asking more questions and putting more emphasis into their expression online.

Sally (CS2) I know I have got a better understanding of it, because we have been going over it and it makes you think about it. (21st September 2010)

Jack (CS2) I have more of an insight into it. I have taken a bit more of an interest in what it means and how it affects people in a social context. (8th November 2010)

Joshua (CS2) I think I ask more questions and perhaps focus on the class a little bit deeper. (18th October 2010)

Lucy (CS1) I make more of an effort to listen to their voice, their tone of voice. I have started picturing their facial expressions. (2nd September 2010)

Rita (CS2) I am more animated when the teacher asks me something now. (2nd September 2010)

As was noted in the 18th of June research diary, trying to engage the participants in the research questions was an objective of the research process and thus appears to have crossed over to the online classes themselves. The objective in the interview was to take an interest in them as individuals and establish rapport.

[Research Diary: Friday 18th June 2010

They all seem very comfortable sitting *behind* the technology but it is important to help bring them out by offering them social engagement outside of on task activity.]

4.4.12 Time

There was general consensus among the respondents that the time spent interacting appeared to be a factor that enhanced the degree of empathic accuracy when interpreting others. This time also appeared to contribute to greater feelings of inclusion and cohesion within online classes. For the teachers, it was their experience that just as interactions increased, so too, they believed, did their teaching effectiveness increase.

Kathryn (T) (CS2) If you get to know a kid, you can get to know how far you can push and poke and prod to get an answer out of them. So, yeah, the more often we have a session the better it is. (17th May 2010)

The increased knowledge of others and the effect of this on interpretive accuracy may, therefore, be facilitated by the focus on a period of time of initial or targeted social interaction. This view was supported by a number of respondents including Jimmy.

Interviewer: Do you think adding in an extra half or quarter of an hour social interaction/ 'getting to know you interaction', would prove beneficial to later learning?

Jimmy (CS2) Yeah. Yeah! I would definitely say so. (4th June 2010)

4.5 Summary of emergent theme coding analysis

As part of the research strategy, the themes identified and coded to thematic categories in section 4.4 were converted into notation form and then re-coded and sub-coded in an increasingly finer grained analytical process as part of the research strategy. Through the grouping of common themes and ideas within overarching categories, patterns of understandings began to emerge. During this process, three exploratory overarching categories were identified by the researcher that enabled the discrete and encompassing coding of each of the themes and ideas. These categories included:

- The Participant *(themes/ideas related to the participant).*

- The Physical Environment *(themes/ideas related to the online SMC environment).*
- The Social Environment *(themes related to the relationship and social interaction between the participants).*

Appendix R details exemplars of the NVivo coding processes utilised. For details of initial thematic notes see Appendix S and re-coded categories and sub-categories, see Appendix T.

4.5.1 The participant

The first overarching category to be identified from the re-coding process encompassed the range of themes that related to the participant. During the dialogic interview process, participants identified and discussed many experiences related to empathy in which the SMC conferencing participant was the central focus. Once the coding of these experiences and ideas into the participant node and branch nodes was completed, NVivo® modelling software was used to represent the ten sub-themes and their relationship to the overarching participant category (see Figure 4.2).

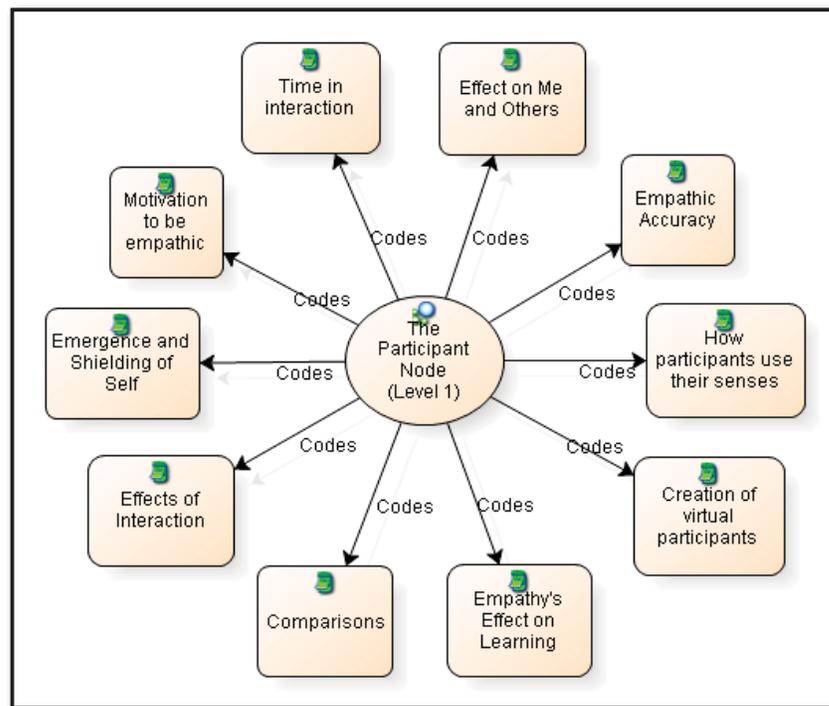


Figure 4.2 Emergent themes coded to the participant

4.5.2 *The physical environment*

The results of the data coding with respect to the physical environment resulted in numerous ideas and themes that were related to the online collaboration environment facilitated through the use of SMC. The capabilities and limitations created by the online SMC environment were a central focus of coding within this overarching category. The themes related to the physical environment were coded into six sub-categories and are summarised in Figure 4.3.

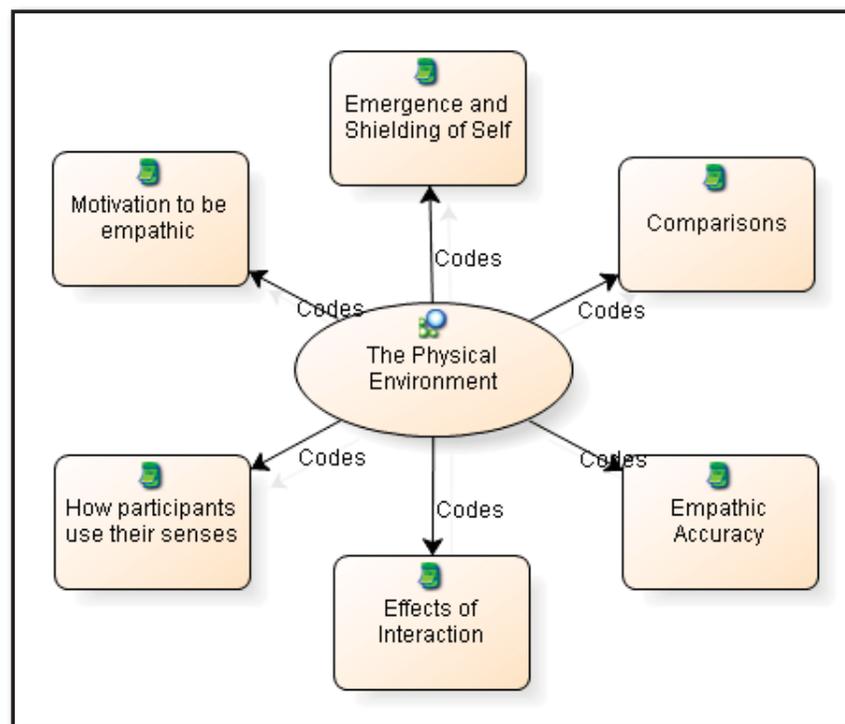


Figure 4.3 Emergent themes coded to the physical environment

4.5.3 *The social environment*

The social dynamics of participants' interaction encompassed the final category in the coding of the notes generated from the Phase 1 data analysis. The social environment was a complex category with ten sub-categories required to encompass all the themes and ideas coded. Figure 4.4 summarises the sub-categories into which the themes related to the social environment were coded.

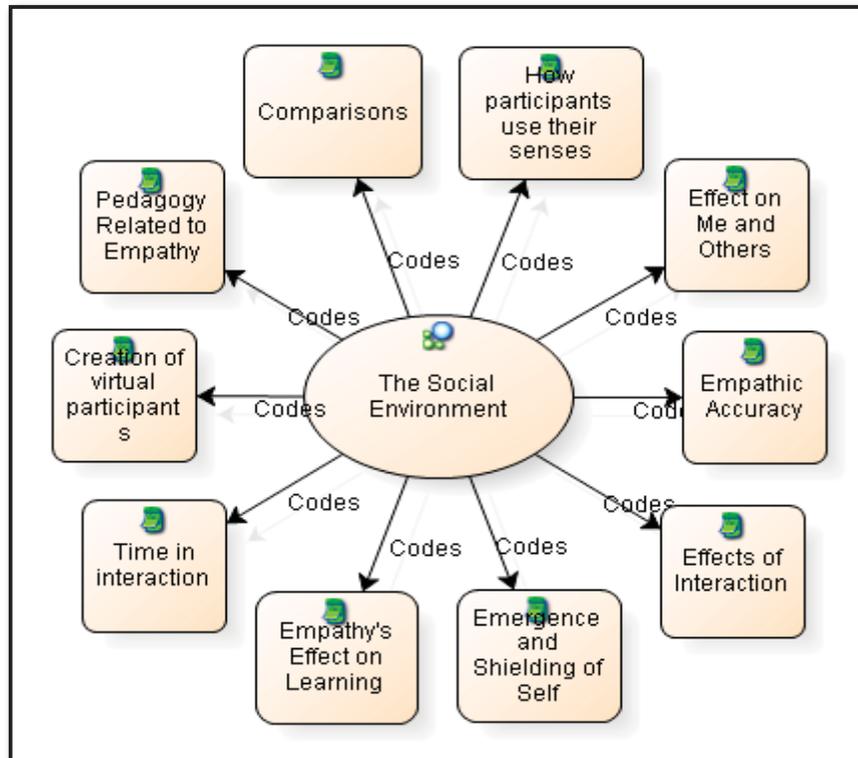


Figure 4.4 Emergent themes coded to the social environment

4.5.4 An exploratory synchronous multimedia conferencing model

As a result of the coding and modelling processes within NVivo®, along with undertaking an analysis of possible relationships between these categories, an exploratory model was developed by the researcher of how these three overarching categories may be related. This model represented a researcher interpretation of the findings up to this point. The model, as presented in Figure 4.5, suggests that empathy within SMC is supported by each of these categories. Empathic interpretation, it is proposed, is supported by: i) the *participant*, ii) the *physical environment*, and iii) the *social environment*. It is also proposed that this relationship is resilient when all elements are in balance and linked within a multifaceted relationship. The bond holding these elements together is proposed to be empathy. Therefore, empathy is not only supported by these elements, but is also the bond between them, binding the relationships together. Like the apex or locking mechanism of a tripod, empathy is the essential relational mechanism holding these three supportive categories together. In the absence or ineffectiveness of one of the *legs*, or the absence of empathy to hold these legs together, the tripod falls over and social interaction is negatively affected.

The exploratory model, utilising a tripod structure to describe how these branch categories related to each other and to empathy, was developed using several strategic analyses. The first, involved a review of the overarching branch code categories with respect to how they related to each other. The next was to review the relative importance of the participant, the physical environment and the social environment within the overall SMC empathy model. The function of empathy as a relational mechanism in relation to these categories was then reviewed. Using these reviews, the researcher then explored everyday structural metaphors that may be able to represent these relationships and the overall structure. This process concluded with the selection of the tripod structure to represent these relationships. Figure 4.5 presents the SMC empathy model in diagrammatic form.

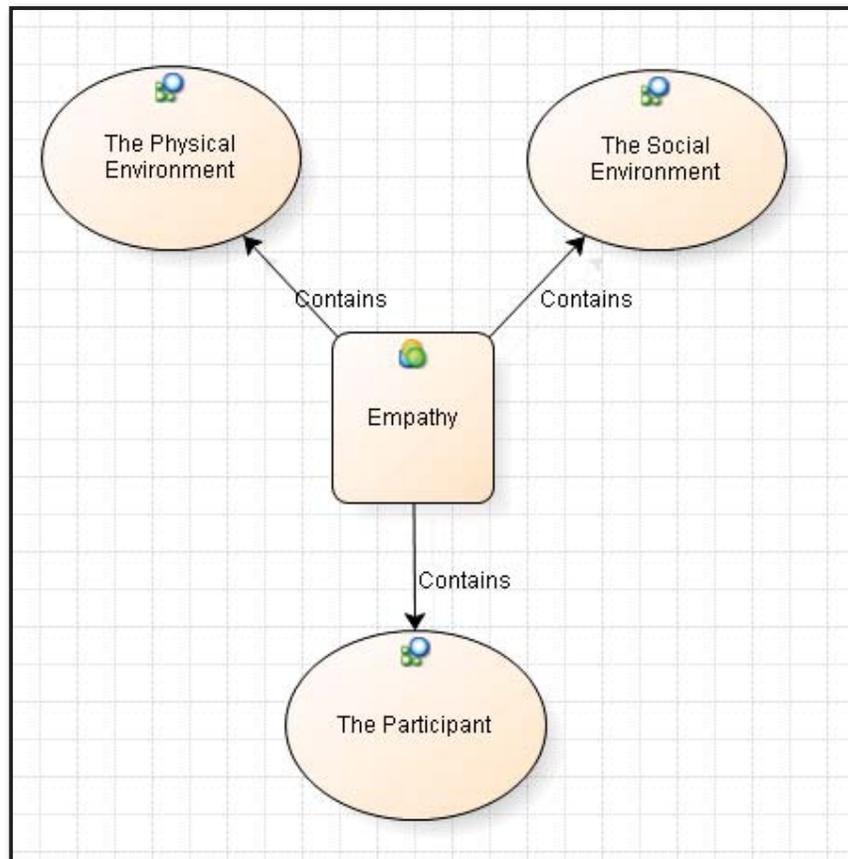


Figure 4.5 The SMC empathy model

4.6 Phase 2: Data coding analysis

4.6.1 Introduction

The purpose of Phase 2 was to re-engage participants with the themes, categories and models developed from Phase 1 and use this reengagement as an opportunity to stimulate the emergence of deeper understandings. This re-engagement was then expected to inform understandings at a deeper level as to *how* participants experience empathy. This was achieved through the continuation of the development of understandings through continued dialogic engagement of participants in subsequent focus group and one on one interview in a hermeneutic circle approach.

Within Phase 2a focus group interviews, participants identified which themes within the categories were supported, which not, and which of these were of most significance to them (see Appendix M for Phase 2a interview schedule). Participants were encouraged to expand and develop their understandings of these themes through continued dialogic engagement with the researcher and other participants.

Although there was support for many of the ideas and themes presented to the focus groups, not all were supported. These alternative discourses gave greater confidence that participants within all three focus groups were critical in their engagement with previously developed understandings and were not just offering compliant responses to the researcher. Subsequent to the series of focus group 2a interviews the responses to these interviews were coded into nodes of agreement/disagreement, themes of most importance, and respondents' personal perspectives (see Appendix U).

The feedback from the focus groups' and respondent validation dialogic engagement of the themes are presented below within the categories of i) the *participant*, ii) the *physical environment*, and iii) the *social environment*, and are summarised in sections 4.6.2–4.6.10 that follow. The intent of the Phase 2 was to explore research question 1 and 2 in greater depth by exploring respondents' experiences of empathy from a deeper alternative perspective. This was not a perspective from the side but a perspective resulting from a coding of the first layer of dialogic engagement of participant understandings from Phase 1. The following categories relate back to the initial

research questions through the continued exploration of how participants experience the nature and function of empathy within SMC.

During the on-going coding process the responses related to both the participant and physical environment were further broken down into:

The participant:

1. The participants are (What are the particular characteristics of participants?)
2. The participants experience (What did the participants experience?)
3. The participants think about (What did the participants think about/reflect on?)

The physical environment:

1. Facilitated (What skills or experiences were facilitated by the environment?)
2. Created (What situations were created by the environment?)

(see Appendix T for full description of sub-coding categories).

Guided by the hermeneutic circle, the results in section 4.6 are also presented in a format that identifies how the theme or idea was further built upon in Phase 2. Each sub-section presents findings from the focus group discussion followed by responses from the final one on one respondent validation interviews. This is undertaken to indicate the progression of understandings. Finally, in sections 4.6.9 and 4.6.10, participants' metaphors for *how* they experienced empathy within SMC, along with respondents' diagrammatic models of empathy in SMC are presented. These two sections represent the personal understandings of respondents in relation to how they experience empathy within SMC at the completion of the iterative dialogical research process.

4.6.2 The characteristics of participants

What are the particular characteristics of participants?

1. Active in selectively shielding or sharing themselves, encouraging of others to share themselves, and manipulate the online environment to assist in interpreting others,
2. Active in focusing their senses to maximise their ability to empathise,

3. Able to create empathic inaccuracies in others, and
4. Motivated, confident and positive.

(NB: The themes above were presented to participants in the Phase 2 focus group and subsequent one on one interviews, see Appendices M and N.)

4.6.2.1 Phase 2a: Focus group discussion

All four themes were supported by the focus groups, with theme one and four the most significant to participants. There was similar consensus across all three focus groups on this support. Additional discussion within the teachers' focus group centred on the ability of participants to *hide* within the sessions. The discussion for the students of focus group 1 centred on the theme of being motivated, confident and positive, and how this had changed over time. As participants gained greater experience of each other within the online environment, the focus group discussion centred on how empathic skills improved. As June outlined, it was this change that seems to have facilitated the students to feeling more motivated confident and positive.

June (CS1) I think the bottom one. For a start, we weren't at all that motivated, positive and confident. In fact it was pretty much the exact opposite. Well it was, or that is what I picked up on, because we didn't know what we were doing online. As time went on, we got more understanding and we have more of that in us. Now we are pretty much there. (Focus Group Interview 2 – 27th July 2010)

4.6.2.2 Phase 2b: One on one respondent validation interview

There was similar support from all respondents in relation to the findings of the focus group interviews. The one on one interview did, however, facilitate a wider range of discussion points about these themes. This was especially evident in Kathryn's perspective on how participants may create empathic inaccuracies in others.

Kathryn (T) (CS2) I think the third point is quite interesting, by creating almost an avatar of themselves or creating a

persona that is different than they are normally like is interesting. (16th September 2010)

Within the final one on one interview, several of the participants expressed in much greater depth the issue of ‘letting their personality out’. An emphasis was made that they did not always see this to be a negative effect, as in some cases it allowed them to ‘not be themselves’ by creating a more confident persona. As Kathryn also outlines, participants still appeared to be in control of this process.

Susan (CS1) You can say something to show a little bit about yourself, but also hide a lot more. (20th August 2010)

Rita (CS2) I have been able to be different than I would have normally been in a classroom. (2nd September 2010)

Kathryn (T) (CS2) They don't want to give out anything unless they really want to. They are in complete control of either shielding or sharing. (16th September 2010)

4.6.3 The experiences of participants

What did the participants experience?

1. Satisfaction enjoyment and comfort,
2. Learning and understanding,
3. A sense of relationship with other participants,
4. Feelings of a social distance (especially when technical problems occurred), and
5. Frustration at not being able to interpret others.

4.6.3.1 Phase 2a: Focus group discussion

Five themes were identified in this sub-category. Of these five it was the feelings of social distance and the frustration at not being able to interpret others that were of most significance. The students of Case Study 1 expanded on how these challenges influenced feelings of social distance by making it more difficult to relate. The students within Case Study 2 believed that, although frustration was of significance to them, the

others were of similar importance. For the teachers, it was the feelings of frustration that were of the most importance.

Kathryn (T) (CS2) When the students are having technical issues and stuff. They get quite frustrated, quite quickly. (Focus Group Interview 2 – 3rd August 2010)

June (CS1) I am tossing up between the bottom two. Because it is exactly right. The feelings of social distance and the frustration that you can't relate to other people, well, you can, but you can't empathise. (Focus Group Interview 2 – 27th July 2010)

4.6.3.2 Phase 2b: One on one respondent validation interviews

The one on one interviews also provided support for these themes, especially the significance of feelings of social distance and frustration. Participants agreed that it was when things went wrong, that it led to the lack of ability to empathise, that led to the frustration. The effect of the frustration was expanded on within the teachers' focus group. The emphasis was on the role schools have in ensuring the schools have the correct equipment to reduce the technical problems students are experiencing.

An important issue for many of the respondents was the learning that they experienced. For June, whose view was representative of a wider discussion, the issue of taking on the opinions of others was a key to this new learning.

June (CS1) I would probably say the learning and understanding. Generally I think when we are all together. We take each other's opinions and learn from that. (1st September 2010)

4.6.4 The participants thought about

What did the participants think about/reflect on?

1. How to improve their empathic accuracy,
2. Their role online as a learner or teacher,
3. The reasons for interacting and interpreting others, and

4. The importance of social interaction.

4.6.4.1 Phase 2a: Focus group discussion

All four themes within this section were supported by the focus groups, with themes three and four of most significance. For the students of Case Study 1, the main points of additional discussion centred on the importance of social interaction and the reasons for understanding your role as a learner or teacher. Whilst some participants wanted to step in to assist in online sessions, especially when technical issues prevailed, existing understandings of their role as the learner inhibited them. The discussion of students in Case Study 2 explored the importance of social interaction and how increasing this interaction would be beneficial. For the teachers, their main discussion point was a continuation of how they believed the participants' thoughts about their online experiences were having a positive effect on their classes. Apart from general agreement with the other points, there was also general agreement that the learning needed to be an active process.

*Kathryn (T) (CS2) I think they are all pretty much on the money. They do have to be active, they can't be passive in this thing.
(Focus Group Interview 2 – 3rd August 2010)*

4.6.4.2 Phase 2b: One on one respondent validation interviews

Participants discussed a range of issues within the one on one interviews, the most dominant of these being the effect of increasing social interaction. For all of the participants, there was a belief that increasing social interaction would increase participants' abilities to relate. As Edmond outlines in detail, establishing a reason for interpreting others forms the foundation for providing the motivation for interpreting others in the first place.

Edmond (CS1) I definitely agree with the reasons for interacting and interpreting others because you have got to figure out what the motivation would be for interacting and caring about the others. That kind of flows on to the importance of social interaction you are trying to figure out if it is actually worth

doing or not. [Laughter] Or why you would want to. (20th August 2010)

For others, however, like Mary, one of the teachers, all four had been experienced and all four were deemed to be of equal importance.

Mary (T)(CS1): I am actually finding it hard to have any most important there because I find them all equally important. I would see them or feel more comfortable with them being equally important rather than pushing one or two. (17th August 2010)

4.6.5 The physical environment facilitates

What skills or strategies or experiences were facilitated by the environment?

1. The selective disclosure of *self* to others,
2. Greater participant engagement (*for example, the boys texting and how that encouraged them to participate more, see section 4.6.5.1*), and
3. New skills in how to interpret others (*i.e. better listening skills*).

4.6.5.1 Phase 2a: Focus group discussion

All three themes were supported by all three focus groups. Equal significance was placed on all three points and this was expressed by all three focus groups. The students within Case Study 1 expanded the discussion related to the importance of the ability to selectively disclose *self* to others and how this facilitated greater engagement in learning, especially for those with less confidence. This theme was also brought up within the teachers' focus group with discussion centred on how the nature of the text chat versus oral response environments suited either the male or female students.

Susan (CS1) I think I more agree with the second one, greater participant engagement. Because we are doing selective sharing. I know I do. (Focus Group Interview 2 – 27th July 2010)

Kathryn (T) (CS2) I still find the boys, whilst they may participate verbally, they will text more due to the fact they can text

anonymously, like no one else will know they are asking me the question ... It could be a great deal of things. It could be because it is brief, it could be just a clarification thing, it could be the fact that they just don't want to look stupid.
(Focus Group Interview 2 – 3rd September 2010)

4.6.5.2 Phase 2b: One on one respondent validation interviews

Within the one on one interviews, a point that was developed more fully and across a number of respondents was the development of new skills. For example, Edmond and Jessica felt they had experienced the development of new skills or abilities due to the SMC environment.

Edmond (CS1) You would develop new skills while listening to tone and that sort of thing. (20th August 2010)

Jessica (CS1) I just feel as though I have learnt to listen to people's tones of voice better to pick up what they are meaning and stuff without looking at them. (16th September 2010)

4.6.6 The physical environment creates

What situations were created by the environment?

1. Empathic inaccuracies (*mainly due to technical problems and participants concentrating on what is said rather than how it is said*),
2. A loss of context when interpreting others,
3. Frustration and loss of motivation to empathise, and
4. A desire for a richer, more reliable multimedia experience and more social interaction face to face.

4.6.6.1 Phase 2a: Focus group discussion

All four themes were supported within this section, with themes three and four of most significance. The focus groups discussed in depth how the effect of technical problems created both a loss of motivation to empathise and at the same time motivation for a more reliable multimedia experience. All three focus groups were extremely similar in

their discussion and support of these themes. Discussion during the research had the effect of stimulating the students of Case Study 1 into trying to create a better experience for themselves back in their online class.

Mary (T)(CS1): The last one, 'the richer more reliable experience' ... they are really into it ... the fact that we have now got each other a picture in front of each other is really great. Being able to talk to each other like that they have enjoyed that. (Focus Group Interview 2 – 3rd August 2010)

4.6.6.2 Phase 2b: One on one respondent validation interviews

The one on one interviews also emphasised the loss of motivation and desire for more enhanced multimedia experiences. Participants expressed a number of reasons for the loss of motivation, from pure frustration at technology not working, to missing out on other classes when their online class was not working technically. It appears that the ongoing discussion of the importance of the multimedia experience stimulated possible future change in approach for Kathryn.

Kathryn (T) (CS2) Well, I am encouraged by that last one. That is a big motivator for me to go off and find out more about this programme and other ways that I can enrich it. Not within the classroom setting and that, but outside of my programme. [Referring to how the SMC is used] I think it is great. (16th September 2010)

4.6.7 The social environment

What are the characteristics of the social environment?

1. Increasing the amount of social interaction improves the empathic accuracy,
2. The most interactive participants are the easiest to interpret,
3. The teacher/student relationship rather than the student/student relationship is more empathic,
4. There is a decrease in formality in the online classroom compared to face to face classroom,

5. There is an increase in personalisation, and
6. There are many social structures that are similar to face to face structures.

4.6.7.1 Phase 2a: Focus group discussion

Only the first five of these themes were supported by the focus groups and not the last. The points discussed most frequently by the focus groups were the positive effects of increasing participation and the decrease in formality and increase in personalisation. These were supported in both the teachers' and students' focus group interviews. With respect to the last point, interestingly, all three focus groups did not support this interpretation. General consensus within the focus groups suggested that using the term 'there are many' social structures, suggested, rather, that there was a great deal of similarity between face to face and online SMC environments. As Rita summarised, the use of the word *many* appears to over-emphasise the degree of similarity between the two.

Rita (CS2) That last one, the normal social structures. It's not the same in our online classroom at all. I don't think there are any normal social structures in an online one personally, compared to my other classes. (6th August 2010)

4.6.7.2 Phase 2b: One on one respondent validation interviews

The one on one interviews all similarly supported the first five themes. The theme predominantly supported by respondents was the belief that the teacher/student relationship was the most empathic. This interaction was considered the most frequent, most engaging, and of the greatest duration. It may also be the case that the observed decrease in formality and increase in personalisation increased empathy between the teacher and students. For June, this change could be compared to her change in status as a senior year 13 student.

June (CS1) There is a decrease in formality and an increase in personalisation. Yes I do think that is a major point there. I have definitely noticed it in year 13 but intensely so in the SILC group [referring to the online class]. (1st September 2010)

The last point that was not supported in this section provided an example of the role of the final one on one interview as a means of respondent validation. All 15 respondents within the respondent validation interviews believed there should be a change in the use of the word *many*. There was widespread support for a change of the wording from *many* to the terms *some* or *a few*. Kathryn indicates the word *many* appeared to suggest a stronger degree of similarity than truly existed.

Kathryn (T) (CS2) It is interesting that that has popped up really because that was the first thing that I noticed as well 'many' was probably too strong a word. 'Some' or 'a few'. It depends. (16th September 2010)

4.6.8 The synchronous multimedia conferencing model

The SMC Empathy Model (see Figure 4.5) emphasises that the participant, the physical environment and the social environment form a basis of support for effective empathic interaction. Empathy, in turn, acts as a pivotal mechanism that links these elements together. In essence, both the supportive elements (participant, physical environment and social environment) and pivotal social relational mechanism (empathy) are necessary for effective social interaction within SMC. This model and the description were presented visually and orally to participants within the Phase 2a Focus Group interview for their dialogic engagement (see Appendix M). The responses to this engagement were then also presented during the respondent validation interviews (see Appendix N). The following is a summary of the responses to the presentation of this model.

4.6.8.1 Phase 2a: Focus group discussion

The model itself was supported by all three focus groups as summarised by the comments from Mary and Kathryn in the teachers' focus group. This general support was also clarified by Susan from Case Study 1, with an acknowledgment that it is a balance between the three components that gives stability to the model and without one component this relationship breaks down.

Mary (T)(CS1): That looks fine to me and I can see where you are going with it. Yep.

Kathryn (T) (CS2) I can completely understand where you are coming from with that one. I can't think of another leg and I don't think there is any more you can add to it. Yeah. (Focus Group Interview 2 – 3rd August 2010)

Susan (CS1) That actually sounds pretty good and I especially like the technology one ... if everyone is right but the technology can't make that bridge then, yes, it is not very good. (Focus Group Interview 2 – 22nd July 2010)

4.6.8.2 Phase 2b: One on one respondent validation interviews

For the one on one interviews, the support for the model continued in two primary directions. Respondents could not think of themes previously discussed that fell outside the three overarching categories. There was also general consensus that the categories that supported empathy had similar and interlinked importance. Edmond and Lucy were representative of the responses given by both the students and teachers.

Edmond (CS1) I would have to say that those three pieces are definitely what make up the pie. I cannot think of anything else though. No, everything we have covered so far definitely fits into those three categories. (20th August 2010)

Lucy (CS1) Yes, because we do have a balance between everything, we can have problems with the physical environment and you have issues with the social environment. (2nd September 2010)

4.6.9 Metaphors for experiencing empathy within SMC

A strategy within the research was developed to use the continued dialogic engagement with the three overarching categories to stimulate additional or alternative views and to

encapsulate respondents' culminating understandings of empathy in SMC. To achieve these aims, participants were encouraged to share an oral metaphor to summarise their *lived* experiences of empathy within SMC. Several metaphors presented below are representative of the range of experiences. Within these metaphors there are indications of problems, challenges, and frustrations that influence participants' experiences of empathy within SMC.

Joshua (CS2) It's like going to a party and you don't know anyone there ... the emotions are harder to distinguish. (18th October 2010)

Rita (CS2) I guess it's like going on a tramp with a whole lot of people who are dumb and blind ... they are wearing a very plain school uniform ... they are all outcast from each other and then occasionally they might get into little clusters. (2nd September 2010)

Kathryn (T) (CS2) It's like riding a horse with really loose reigns. I imagine I am like the person in charge of the horse and making sure it feels comfortable ... There is no doubt there is going to be a snake or something. So it's not a matter of 'if' there is going to be a snake, it's when the snake bites. It is knowing you have got a loose reign, pulling back on it when you need to. (16th September 2010)

Sophie (CS2) It is kind of like we are all different animals and we are put into the same little room and we communicate with each other, but only to a point. (13th August 2010)

Harold (CS2) It's like talking to people with brick walls between everyone and you are talking to people through one pipeline that leads to everyone. That hole could be the size of like a face. So there is the ability to just see them a bit but you can't physically touch them. (31st August 2010)

- Sally (CS2) I guess it would be sort of like driving. You have your ups and downs of your hills and corners and turns and stuff. Sometimes it's good and sometimes it's not so good and sometimes you feel like you are going to get car sick. (21st September 2010)*
- June (CS1) At the start it was like swimming through mud but now it is like there are life rafts that we can rest on. Like those little life rafts are like the places where I can relate to people. (1st September 2010)*
- Edmond (CS1) It's kind of like you would pluck one person from every corner of the country and put them in a classroom where they cannot see one another. Each person is boarded off in their own little cubicle; you can hear one another perfectly, something like that. (20th August 2010)*
- Susan (CS1) You would be there tramping with the group but you are all wearing half masks. You are wearing 'Phantom of the Opera' masks. (20th August 2010)*
- Mary (T)(CS1) Well I am a great card player. It would probably be having all sorts of different hands at one time and not knowing what is going to happen next. They are in the same situation because they are getting all sorts of things all the time as well. (17th August 2010)*

4.6.10 Participant models

The following participant models were developed by participants through their ongoing engagement with understandings of empathy within SMC and the exploratory SMC empathy model. Each respondent's model was critically analysed from the perspective of how respondents presented their own structural metaphor and how the metaphor described the relationships involved. Each model was a personal representation drawn

and annotated by respondents within the online environment using the SMC online whiteboard tools. These were completed as part of the final respondent validation interview. Each of these structural metaphors in some way has enriched the findings of the research. Most notably, it has enriched the multifaceted relationships involved with the nature and function of empathy within SMC.

As part of the process, participants were given the opportunity to describe how they believed the overarching categories of the social environment, the physical environment, and the participant may have interrelated to facilitate or support the existence of empathy within SMC. Participants were asked to share (through a drawing) within the online whiteboard capability of the SMC software, their own understandings of how these components may relate. A range of responses were generated, some of which consisted of a similar structure to that presented within the exploratory SMC empathy model. These were not presented. Several responses, however, either provided a greater level of detail of the relationships involved, or an alternative perspective on how the relationships may be represented. These models were used in further developing understandings of empathy within SMC. The models that created alternative or interesting additional understandings can be found on the following pages.

The Aeroplane Model

Within the Aeroplane Model, Joshua took his existing understanding of the principles of flight and flying an aeroplane and applied them to empathy within SMC. As Joshua noted in discussion about the model, the three components supporting empathy control the flow of air and thus the aircraft in flight. Without air (empathy), effective social interaction (the aircraft) cannot fly. It is a model that emphasises delicate and highly interdependent relationships between the factors that keep the plane in flight. These are the physical environment, the social environment and the participant and their balanced integration.

A key element of this model is that the social environment, physical environment and participant, as represented by the ailerons and rudder, interact with empathy (the air) and exist in highly dependent multifaceted relationships with each other. The influence of this model on the SMC model emphasised the multifaceted nature of the elements and their relationships with and to empathy.

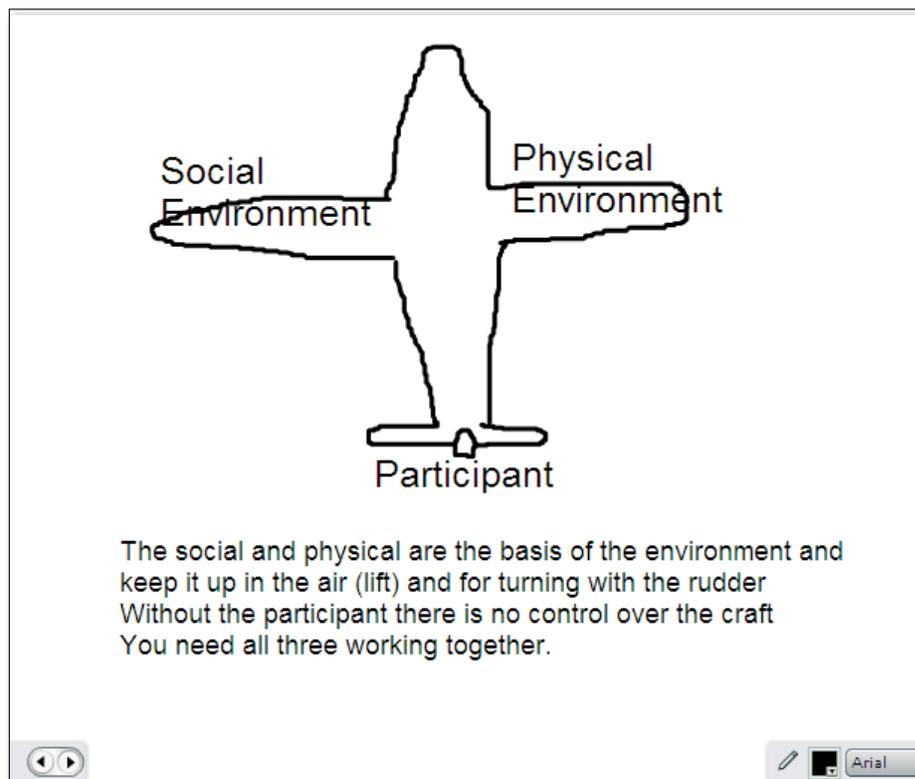


Figure 4.6 The aeroplane model

(Drawing and text developed by Joshua online 18th October 2010)

The Merry Go Round

For Jimmy, a 'merry go round' demonstrated how the three components were related. Jimmy believed if additional pressure or problems exist within the components, then the structure is thrown off balance and the ability to empathise is influenced negatively. Once again, the model suggests empathy exists as a delicately balanced phenomenon that can only exist to its optimum when each of the components is balanced evenly around the Merry Go Round. The relationship between these components is defined by the balanced weighting of these elements. It is also a feature of this model that the platform that holds the three components is empathy and thus the foundation for their support.

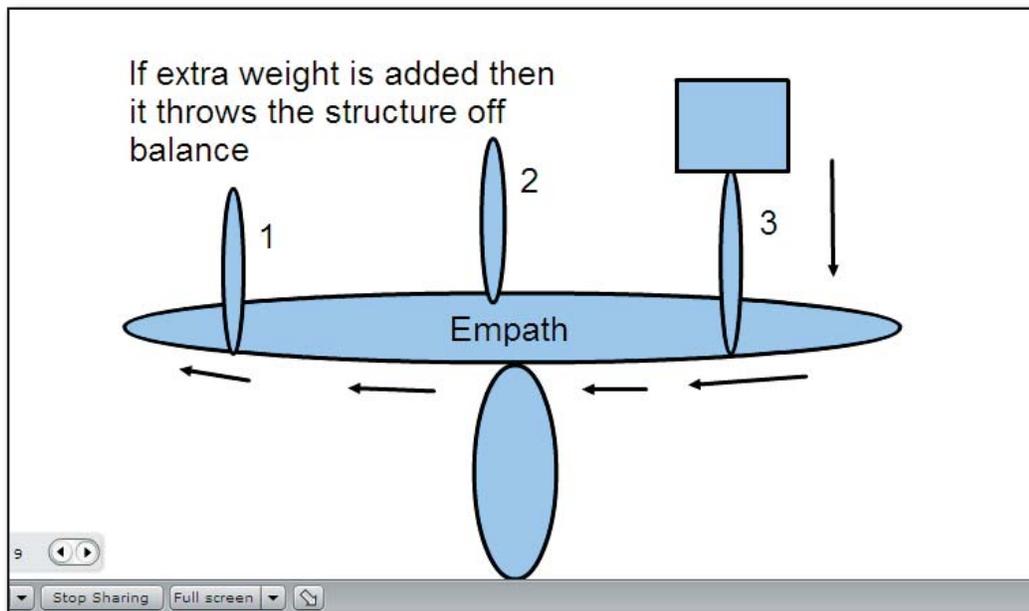


Figure 4.7 The merry go round

(Drawing and text developed by Jimmy online 10th September 2010)

The Keystone

Within the keystone model developed by Harold, there were interesting alternative understandings of how the three overarching categories and empathy related. Harold's model emphasised empathy as the keystone that held together these categories into an arch. It is over this arch that a bridge is created over which effective communication exist. As in a structural arch, where the keystone is the element that locks the structure in place, this model suggests empathy also plays this role within empathic relationships online. Whilst the other components are necessary building blocks in the structure, it is the keystone (empathy) that is the *key* element holding them in place, locking in place the structure, and giving it strength.

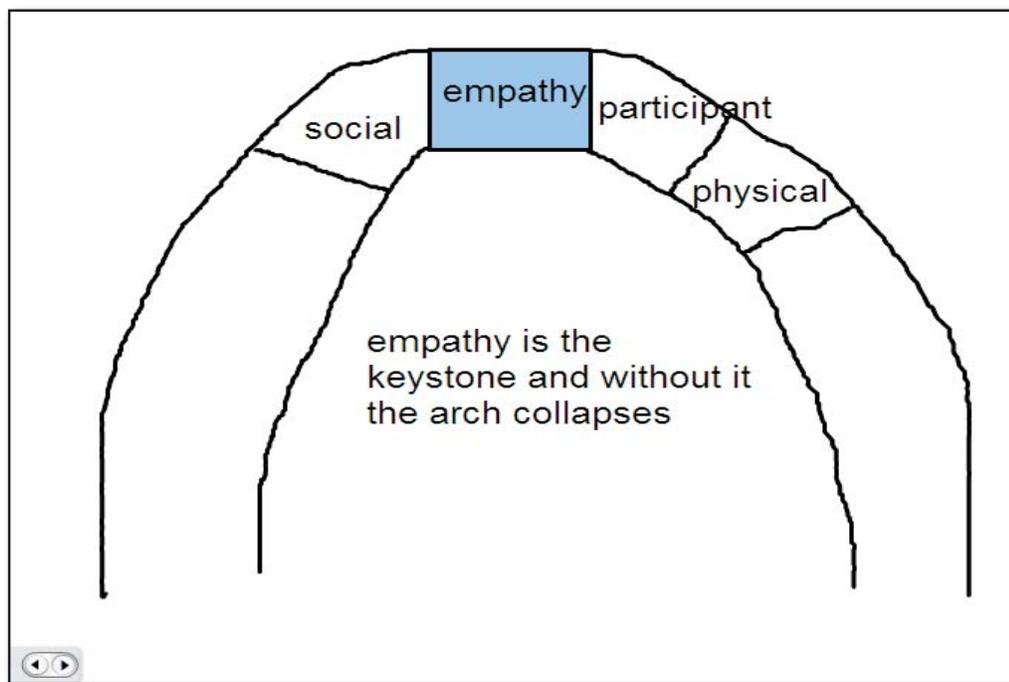


Figure 4.8 The keystone

(Drawing and text developed by Harold online 31st August 2010)

The Expanding Gap

For Kathryn, the emphasis within her model was the role of the three categories in expanding the interpretive gap between participants within SMC. As students became more empathic, through a balanced integration of the three categories, the interpretive abilities of participants increased in a developmental process. The model suggested this was because participants could *sense* more through the widened *gap*. This in turn enabled greater engagement of the components to further widen the gap. Much like increasing the *bandwidth* of an internet connection, this increasing gap increased the richness and range of interpretive cues available. Figure 4.9 details how over time and increasing social understanding of self/others, SMC interpretation is like a sliding door that opens.

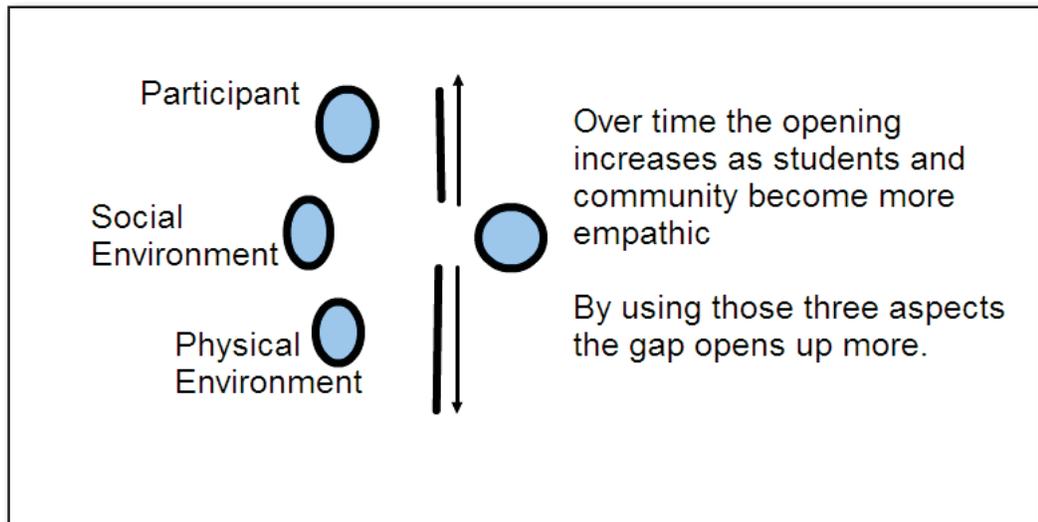


Figure 4.9 The expanding gap

(Drawing and text developed by Kathryn online 16th September 2010)

The Venn Diagram

Edmond used a Venn diagram (Figure 4.10) to explain and describe not only the relationship between the three components and empathy, but also the nature of the relationships. Within Edmond's model was a belief that the relationship between the participant and the social environment creates the interest in other people and hence the motivation to empathise. The relationship between the social environment and physical environment provides the 'model' of empathy to which participants aspire. Finally, the relationship between the participant and the physical environment enables the capacity to empathise. It is only within the interaction of all three of these elements, the motivation, the model, and the capacity, that empathy is facilitated and effective empathic interpretation of others is achieved. This model, once again, emphasises a complex set of relationships that are interrelated and interdependent. This model and the description of the relationships between the main supporting elements of empathy contributed to the research findings, especially the nature of the relationships between the categories.

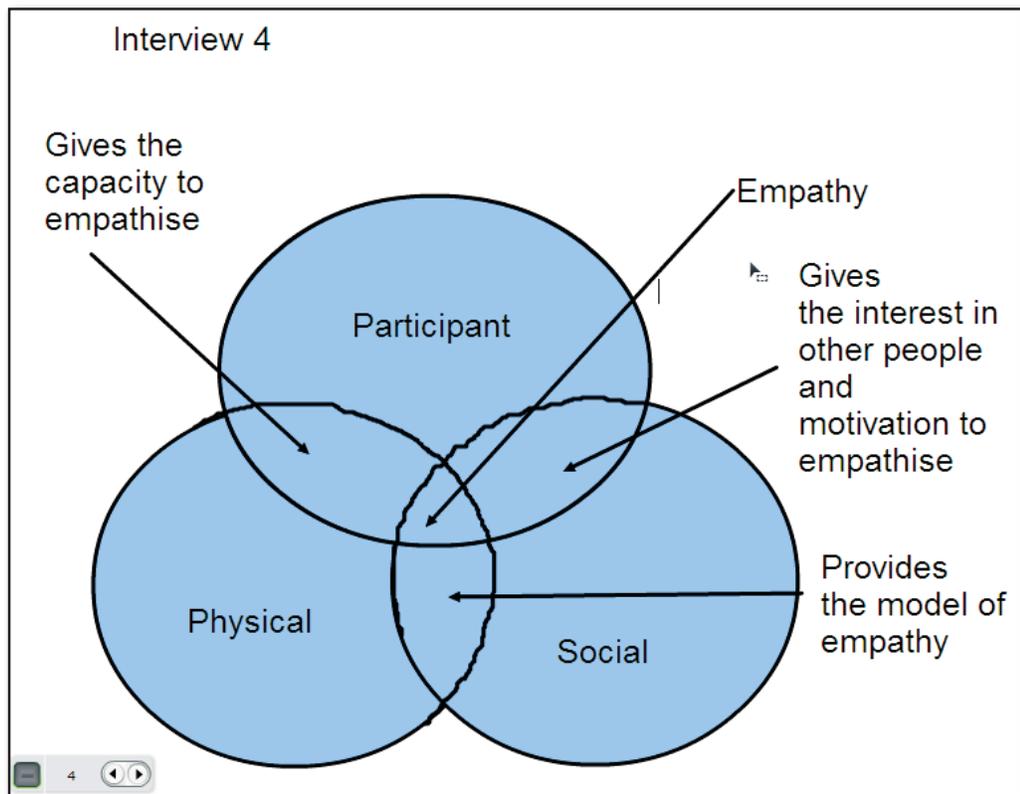


Figure 4.10 The venn diagram

(Drawing and text developed by Edmond online 20th August 2010)

The Spider Web

The spider web, developed by Jessica, emphasised the importance of the relational bonds between the categories supporting empathy. It is these relational bonds that enable participants to *capture* the emotions and feelings of other participants. Like a spider web, it does not matter how strong the web is attached to the foundations and categories, as denoted by the radial structures attached to the wall, it is the intricate and structured linkages or the *web* that is crucial in catching the prey. So, too, for empathy, it is the linkages between these elements, not the elements themselves, which are crucial for *capturing* or successfully interpreting the internal frame of another.

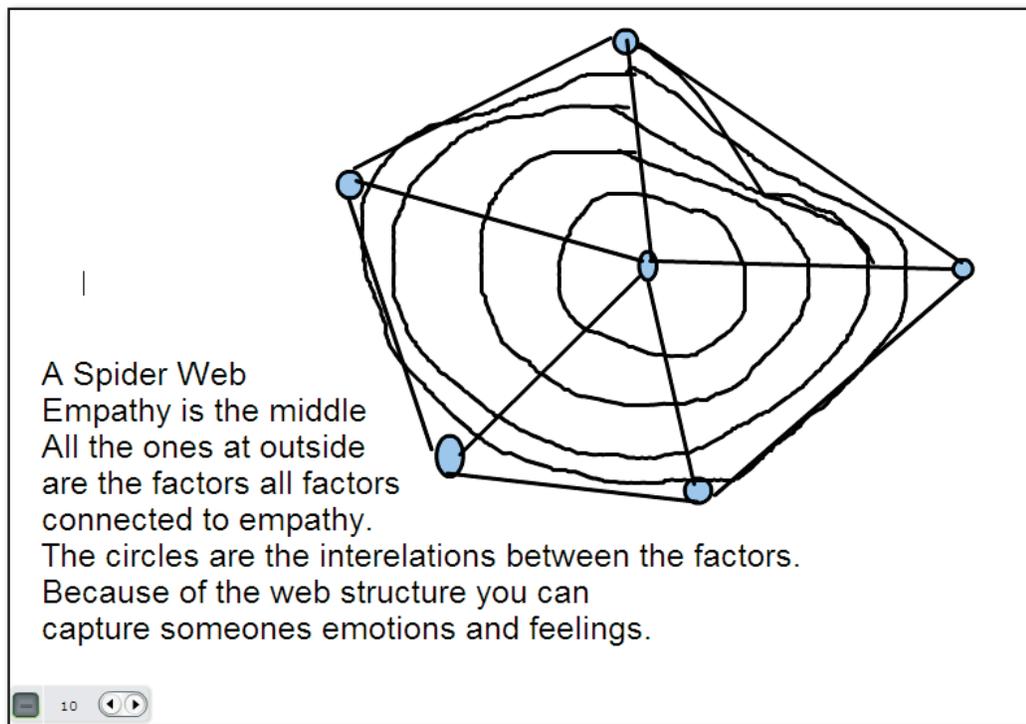


Figure 4.11 The spider web

(Drawing and text developed by Jessica online 16th September 2010)

These models formed the apex of participants' current understandings of how they believe empathy is experienced within SMC and were developed at the end of the iterative research strategy. From a hermeneutic circle understanding of meaning making, participants may have moved on with their understandings after the completion of the research as they continue to develop their understandings over time.

4.6.11 Summary of key findings

1. Empathy was experienced by participants in a range of manifestations within SMC.
2. Empathy formed a range of functions as a relational mechanism for participants within SMC.
3. The participant, the physical environment and the social environment were useful categories to stimulate further dialogic engagement of participants developing deeper understandings of empathy in SMC.
4. Respondents SMC empathy models and metaphors may be useful for understanding the multifaceted nature and function of empathy in SMC.

4.7 Chapter conclusion

This chapter has presented and discussed the findings of the exploration of conferencing participant's understandings of empathy within Synchronous Multimedia Conferencing (SMC). Exploring understandings of *how* participants experience empathy has been viewed from a hermeneutic perspective and has relied on an iterative dialogical research strategy to facilitate the on-going development of these understandings.

The results presented in Research Question 1 (How do synchronous multimedia conferencing participants in the secondary school sector experience the manifestations of empathy?) illustrated that empathy may be experienced in a range of manifestations. These included compassion, encouragement, helping behaviours, and emotional contagion. These manifestations themselves are experienced through a range of verbal and non-verbal forms including tonal inflections and the actions of others.

Research Question 2 (How do such participants experience the functions of empathy within SMC?) illustrated how the functions of empathy were experienced and may have been indicative of empathic engagement occurring. A range of roles of empathy within SMC were experienced, including the creation of a supportive environment, a strengthening bond, a sense of belonging, and cues to support language modulation. These findings suggested that empathy may fulfil a significant and necessary role in effective online interaction.

Participants reported a wide range of experiences that may be indicative of empathy within Phase 1. Some of these fell outside the two preliminary research questions or were developed from them. From these experiences and those from the research questions, twelve emergent themes were identified. These themes were then re-analysed and integrated into three overarching categories developed by the researcher and include: i) the *participant*, ii) the *social environment*, and iii) the *physical environment*. These categories, in turn, were developed into an exploratory model to re-engage respondents in continued dialogue in relation to the understandings of empathy in SMC. Within Phase 2, participants re-engaged with these themes, categories and model and were able to further develop their understandings. The responses from the Phase 2a and 2b interview methods suggested that similar experiences, understandings and support for the categories and exploratory model were evident across both case studies.

The chapter concluded with a final exploration of participants' understandings in a continuing *part to a whole* hermeneutic approach. This was achieved through the collection and analysis of participants' metaphoric experiences and diagrammatic representations of personal models of empathy within SMC. These metaphors and models suggested that empathy within SMC is a multifaceted phenomenon that is highly interdependent on a range of factors that may be grouped into the participant, the physical environment and social environment categories.

Within chapter four, the focus was on answering Research Questions 1 and 2. It was also focused on developing and discussing emergent themes emerging from Phase 1, and the development and discussion of an exploratory model of empathy within SMC. The purpose of this was to stimulate deeper dialogic engagement with respondents of empathy within SMC. In the following chapter (chapter five), the focus is turned to discussing these findings in light of literature in the field. Chapter six explores the implications of the responses in chapter four and discussion in chapter five for the role of empathy within SMC. The focus of these implications is on i) *the participant's conferencing strategies*, ii) *the development and support of empathy in SMC*, and iii) *implications for programme developers and policy makers*.

CHAPTER 5.

DISCUSSION AND CONCLUSIONS

5.1 Introduction

Empathy's importance as a relational mechanism was highlighted in the current study. This finding was first reported by Rogers (1975) through his belief that empathy is "one of the most delicate and powerful ways we have of using ourselves" (p. 1), and later emphasised by Ickes (1997). Ickes believes empathy to be the second greatest achievement of the mind since it gained consciousness. In the view of Biocca et al. (2003), empathy is at the core of how we become social beings; it is at the core of interpreting and relating to others and what it means to be social.

Throughout the research, respondents perceived the feelings and personal meanings of others. This finding is consistent with research in the social presence field where participants experienced a sense of being with another, perceptions of non-mediation and perceptions of others being a 'real person' (Biocca et al., 2003; Kehrwald, 2008; Shin, 2002).

Even though participants could perceive others, they could not as easily articulate the processes involved. This finding is consistent with that of Rogers (1976), who believes that the phenomenon of empathy is easy for people to perceive but difficult to describe. When perceiving others, it also became apparent that participants' understandings originated from a process of placing themselves *in others shoes* rather than making a detached assessment of their feelings. This view is supported by Rogers (1977), who suggested that interpreting understandings of others from the inside is different from evaluative understandings. Evaluative understandings are detached objective assessments that do not involve an experiential component. It is these, *seeing from the inside* understandings experienced by participants, that are believed to be established through the cognitive mirroring of others' internal frames (Gazzola & Aziz-Zadeh, 2006; Harris, 2003; Jabbi et al., 2007; Perry et al., 2001; Rankin et al., 2005; Rizzolatti, 2005; Vonderwell & Fanklin, 2002).

Although interpreting others was found to be an important process when relating to others, being able to detach from this interpretive process was found to be equally important (Halpern, 2003). Participants not only needed to perceive others in the relational process, they also needed to detach from perceiving. As Decety and Jackson (2004) suggest, empathy not only involves the subjective experience between self and others, it also requires not losing sight of whose feelings belong to whom. Therefore, it is believed the empathic process experienced by participants in this study not only involved the perception of others, but also the process of disengagement from perceiving. Without this self-regulation of empathic processes, Bandura (2002) argues, relating to others would lead to cognitive and emotional exhaustion.

The literature places a great deal of importance on the role of empathy in learning. As the most frequently occurring predictor of student self-concept, achievement, attendance and pro-social behaviours (Rogers & Freiberg, 1994), empathy is also believed to be highly influential in the creation of a sense of community among online learners (Tu & McIsaac, 2002). These views were supported by respondents who believed that understanding others' needs, emotions and circumstances, were fundamental to relational processes and development. Again, this is consistent with prior research (Kunyk & Olson, 2001; Pivec, 2006). The importance of the accuracy of interpretation of others' experiences was also noted by respondents and is similarly supported in the literature. As Brna (2006) notes, empathic accuracy is a dimension by which social intelligence is measured. It is not surprising, therefore, that empathy is cited in the transactional distance literature as being sufficiently important to be practised consciously to enhance learning effectiveness (Holmberg, 2003).

In this chapter these general findings are discussed in more detail. The discussion is also structured in a similar format to chapter four (Results) in order to continue the hermeneutic approach in which the findings have been gathered and interpreted. Sections 5.2 and 5.3 discuss the findings of the preliminary research questions, exploring the nature and function of empathy within SMC. Section 5.4 explores the themes that emerged from Phase 1 and leads to section 5.5 for a discussion on the (SMC) Empathy Model that was developed in order to stimulate a range of deeper understandings and participant models. Section 5.6 discusses how the iterative dialogical research strategy aligned with the underlying hermeneutic interpretive

approach and includes the presentation of respondents' representative views on the outcome of this strategy. Finally, the contributions to knowledge (section 5.8) and strengths and limitations of the research (section 5.9) are discussed.

5.2 How do synchronous multimedia conferencing participants experience the manifestations of empathy?

The finding that compassion and caring are two means by which SMC participants are empathic is also supported by others in the field (Darwall, 1998; Ickes, 1993; Woolfolk, 1998). The responses also suggested that particular strategies may facilitate more salient experiences of compassion and caring. Respondents believed that taking a greater interest in others and showing understanding and patience were important in relating to others. Arnold (2005) not only supports these findings but also suggests attuned listening is additionally important. Similarly, the finding that participants' experiences of compassion and caring can be enhanced through making more dramatic changes to their voice tone and inflections, through more *interested* and *engaging* voices, supports the findings of Brna (2006) and Halpern (2003).

Responses that revealed that a compliment could be expressed in many forms were consistent with findings of Baillie (1996). Respondents believed that compliment could be expressed verbally, by the actions of others, in written form, and with the use of emoticons and annotations. The most salient of these forms was shown to be oral communication through such means as *interested*, *engaging* and *energetic* voices. This aligns with the views of Rifkin (2009), who suggests that hearing is the most intimate of the senses. Oral language is "a deeply participatory experience" (p. 204). Alternatively, reading compliments, or viewing them pictorially as ticks or emoticons, are much more individualistic processes, creating a more private medium that encourages private reflection (Rifkin, 2009). These findings are also consistent with literature in the transactional distance field that emphasises the importance of dialogue in the facilitation of empathy through a conversational style of interaction (Holmberg, 2003; Pena-Schaff & Nicholls, 2004).

There were additional factors in online conferencing that participants also reported as influencing the experience of compliment. The level of participant engagement and

familiarity with each other was particularly noted in the responses. Familiarity with others was found to play a role in improving the effectiveness of the compliment given. This may be explained from research by Feng et al. (2004), who suggest familiarity of others can lead to compliment being experienced as more natural and trustworthy. In Feng et al.'s view this may result from the greater empathic accuracy in interpretation of others, leading to more trustworthy and natural responses from the interpreter.

Similar to the findings of Park and Bonk (2007), who utilised the same type of SMC software within their research, helping behaviours were found to be expressed orally, within the text chat environment, or later as follow up emails. Park and Bonk's research also noted that participants held positive perceptions when instructor feedback was immediate. The immediacy of feedback, along with the *extra mile* teachers go for their students, were also positively reported by respondents within the current study. Respondents suggested feelings of being helped were experienced within tasks that had a group or collaborative focus. One role collaborative or group tasks may have in this process, Brownell, Zerwas, and Balaram (2002) have suggested, is to force participants to reason about the feelings of others. This is consistent with research by Murphy (2004), who believes the joint production of artefacts promotes socially interactive engagement and counteracts any tendency to remain an individual. Collaborative or group tasks, therefore, may serve as a unique mechanism for the engagement and development of empathy (Tu, 2004). This point raises an additional question; do collaborative tasks support the development of relational mechanisms such as empathy, or is it that empathy supports an increase in interaction and the facilitation of collaborative tasks?

The perception of others' emotions is an important process in the ability to empathise and a process that respondents believed had occurred within SMC (Pivec, 2006). This sense of being with another 'real person' is also reported in previous social presence research (Biocca et al., 2003; Shin, 2002). Responses suggested that affective empathy (*when perceived state in another evokes an emotion in the observer*) occurs in addition to cognitive empathy (*an awareness of another's state*) (Dias et al., 2006). This view is supported through respondents not only noting they were able to interpret others' emotions, they also experienced some of these emotions as their own, such as humour and tension. When considering the particular emotions that were experienced, Anderson

and Keltner (2002) believe they should be those that specifically facilitate social bonds and not just any and all types of emotion. This is a finding that was also observed in the current research.

Responses also indicated that emotions were not independent from the context within which they were experienced. Humour was reported by the participants within the context of a joke, humorous story or event. This finding is consistent with Seidman (2006), who found stories and language held great importance in the meaning making process and in interpreting the emotions of others. It is believed stories or events enable participants to take the perspective of others, build a context or experience around the emotion, give the emotion more salience, and hence increase the opportunity for participants to experience the emotion as their own (Acaster, 2000).

The need for a balance between social interaction and the focus on learning content was discussed and promoted by a number of respondents within the research. Many respondents suggested that because of perceived time pressures to get through content, the learning task-oriented focus precluded social interaction. The finding of a predominantly task-oriented focus within synchronous conferencing was also found in similar research by Park and Bonk (2007). One of the challenges of a predominantly task-oriented focus is the increase in time required to build effective social bonds and create a sense of community (Tu & McIsaac, 2002). As respondents supported a contention that social interaction is a key mechanism in the development of social bonds, it appears logical to assume that reducing social interaction by replacing it with task-focused interaction may increase the time required to build social bonds.

Apart from the negative effects of technical problems, stress, and workload, respondents also noted a number of positive effects. The development of more refined listening and interpretive skills to overcome these problems was consistent with findings of both Baillie (1996) and Park and Bonk (2007). Respondents also emphasised the need to mitigate the technical problems that remained. One of the key strategies supported by the literature, and emphasised by respondents, was the integration of synchronous and asynchronous collaboration tools within a blended learning environment (Vonderwell & Franklin, 2002). This strategy gave flexibility to users to continue collaboration when synchronous tools were not working and feelings of belonging and attachment to the

group could be retained. These additional collaboration opportunities were noted by respondents as enhancing feelings of satisfaction, a finding also consistent with prior research (Richardson & Swan, 2003).

5.3 How do participants experience the functions of empathy within SMC?

Respondents emphasised the importance of patience, caring and understanding in the development of a supportive environment. Park and Bonk's (2007) findings are also consistent with these findings, noting that support from other participants, especially the teacher, was valued. The importance of support from others is also emphasised by Rifkin (2009), who suggests that our most cherished *possession* over distance, or reflection on past social interactions, is our support from, and relationship with, others. It appears, therefore, that through our primary aim to build and maintain social bonds (Anderson & Keltner, 2002), our value of the support of others may motivate us to engage with others to seek that support and relational environment (Vonderwell & Franklin, 2002).

Respondents also indicated that these social bonds and relationships developed over time and are related to the degree of interactivity of the participants through a range of conferencing strategies. This finding is supported by research in the social presence field (Kehrwald, 2010a, 2010b). A particular strategy, the use of terminology such as *group*, *community* or *club*, to assist in participants' identification with a group, is also supported by the research of Caspi and Blau (2008). The respondents and prior research also document the importance of maintaining a curiosity in the personal lives of other participants in building relationships (Halpern, 2003). It is believed this personal curiosity may result in increased exposure to, and familiarity with, others. This, Ickes, Marangoni, and Garcia (1997) suggest, leads to a greater sense of relatedness and social bond. Brna (2006) believes this personal curiosity means knowing others as a person, including their confidence levels and knowledge. With this knowledge one is able to engage relational strategies for nurturing and building the relationship.

Respondents also reported that a lack of motivation to empathise appeared to be a factor that influenced participants' degree of interaction and learning engagement. Although

Biocca et al. (2003), within social presence research, believe there is a deep-seated motivation to interact socially, this motivation was not experienced by at least some of the participants in the study. Some of the participants, particularly the male students, had little motivation to get to know the other students. This lack of motivation to know and hence empathise with others was also found in previous research by Vonderwell and Franklin (2002). In that research some students were more interested in course completion than in social discussion. Of concern for those teachers and students trying to create a community of learners is that if interest in socially interacting with others is limited, so, too, may be the development of understandings (Dilthey & Joshuaon, 1972).

Those participants who were motivated to get to know others cited a number of reasons including learning from other perspectives, increasing familiarity with others, and reducing tensions in the group. The view of respondents that tension and workload can reduce motivation (Hartnett, 2010), and become a barrier to empathy, is consistent with prior research by Halpern (2003). Respondents' belief that increasing familiarity with others can lead to increases in trust and social bond, is also similarly supported by previous research (McAllister, 1995; Stueber, 2006). Participants also reported that successful empathic interaction and in turn the development of a positive learning relationship, were motivators to continue to engage empathically. Therefore, motivation to engage with others appears to serve both as the origin of empathic engagement and also serve as an *engine* to sustain participants' continued empathic engagement (De Vignemont & Singer, 2006). Both intrinsic and extrinsic motivation also appeared to co-exist within SMC. Respondents reported that they held their own internal reasons to empathise. Motivations were supported through situational factors such as teacher feedback and support. The contribution of teacher feedback and support to the development of motivation is also supported by Hartnett (2010).

The use of a range of social cues for interpreting others was cited by a number of respondents as being helpful for successful social interaction. This view is consistent with prior research (De Vignemont & Singer, 2006). Incorrect inferences of others may lead to inappropriate responses, culminating in social isolation or a lack of social intelligence (Brna, 2006). Respondents suggested that increasing the range of cues that could be used may also support more accurate empathic engagement. Respondents within the research suggested that a greater range of interpretive cues may become

available through i) specific empathic training (Acaster, 2000; Arnold, 2005), ii) learning from experience (Baillie, 1996; Preston & de Waal, 2002), and iii) specific training in the use of the range of SMC media channels including audio, video, text box chat, annotation over image capabilities, status indicators, and emoticons (O'Connor & Madge, 2001; Park & Bonk, 2007).

Empathic accuracy was important to the participants within this research. It is also an issue of significant interest in empathy research (Eisenberg, Murphy, & Shepard, 1997; Ickes, 1997). For example, in the context of the telephone, the ability to manipulate perceptions of the words of language is important. With fewer contextual cues around the oral language of the spoken word, users are able to more easily manipulate how they are perceived by others (Rifkin, 2009). Respondents in the research also noted the potential for manipulating how you could be perceived and the potential errors in interpreting others. Consequently, respondents support the literature in expounding the benefits of maximising the accuracy with which interpretations can be made (Hughes et al., 2007; Ickes, 1997). Whilst there can never be an objective interpretation and completely accurate interpretation of others (Denzin, 2003), research suggests improving the accuracy of interpretations enhances the quality of relationships and therefore enhances learning (Bissonnette, Rusbult, & Kilpatrick, 1997).

Many of the respondents believed they had improved their empathic accuracy as their familiarity and experience of others increased. Respondents believed they were becoming increasingly confident with the accuracy of their interpretations and also more confident that they could predict what others may be like in an increasing range of contexts. These findings are consistent with the work of Ickes (1993), who believes accurate interpretation of another person's state must precede perception of their traits. Familiarity with a trait, therefore, relies on expected responses from a person's states (Bissonnette et al., 1997). Through increasing experience with others, participants appeared to improve their interpretive accuracy of both states and traits, and their access to a greater range of knowledge of the person (Amin & Roberts, 2008). Research by Colvin, Vogt, and Ickes (1997) suggests that this familiarity is based on the accumulated observations across varied situations and over an extended time frame. This aligns with the finding that participants' experienced greater familiarity with others as the year went on and greater interpretive accuracy was experienced of those they

interacted with the most, especially the teacher. The findings of a progression of relations are supported in the social presence literature (Kehrwald, 2010a). The developing nature of the bond between participants as a result of familiarity is also noted in the transactional distance literature (Dron, 2007; Holmberg, 2003; Moore, 1993), and cognitive distance literature (M. D. Cohen & Levinthal, 1990; Nooteboom, 2004; Petruzzelli et al., 2007).

Some respondents believed that an image, *avatar* or feelings of their own could be created in the mind of others. This view is supported by research suggesting that feelings or emotions are interpreted and matched with prior experience to create an image of another (Jabbi et al., 2007; Perry et al., 2001; Rankin et al., 2005). In mirror neuron research (e.g., Gazzola & Aziz-Zadeh, 2006; Harris, 2003; Rizzolatti, 2005), empathy is believed to map the feelings and emotions of others into the internal cognitive constructions of the observer. Observers feel the same feelings as the target using the same neurons they would use if those feelings were theirs.

Some of the respondents experienced *sensory deprivation* and feelings of *distance*, which they believe limited their engagement. Irwin and Burge (2006) also found students withheld their input in online exchanges because of the impoverished social nature of online discussions. This view of sensory starvation is supported by Tu (2004), who suggests online interaction is different from traditional encounters because of the *lean* channels of communications.

Perceptions of distance are reported in social presence, transactional distance, and cognitive distance literature. These perceptions of *distance* are reported within social distance literature as a *social distance* that is created by mediating technologies (Biocca et al., 2003). Within cognitive distance literature, it is *cognitive distance* that reduces the absorptive capacity (or ability to access the thinking of others), that leads to perceptions of *distance* (Albino et al., 2008; Nooteboom, 2004). Within transactional distance understandings, *distance* is experienced as a psychological rather than physical chasm to be crossed (Dron, 2007; Moore, 1993; Saba, 2003).

5.4 Emergent themes

The first emergent theme identified was the attention participants drew to the differences in their experiences of the manifestations and functions of empathy in different learning contexts. Two of the most frequent comparisons made by respondents were between i) SMC and face to face classrooms, and ii) differences in the engagement of female and male participants. Respondents believed that the online SMC environment created a range of challenges not evident in face to face classrooms. For example, respondents noted less contextual cues and a greater scope for empathic inaccuracies. The finding that the online synchronous environment appears to be more complex than face to face interaction is also consistent with findings of Tu (2004). With respect to gender comparisons, the current study appears to suggest female participants generally appeared more empathic than male participants. Preece (2005) has suggested that the presence of females tends to encourage empathy. The situation that both of the teachers were also female may have also contributed to the establishment of empathic online learning environments in both case studies. Again, this is consistent with prior research on the effect of gender on empathy (Dias et al., 2006).

Perceived time pressures in relation to covering sufficient content were experienced by participants in the research. It was also experienced by respondents in similar research undertaken by Park and Bonk (2007). Although time pressures may result in reductions in empathic engagement, Halpern (2003) believes these reductions may result more from a psychological barrier than an actual barrier. In support of this contention were respondents who believed that although there was less *contact* time, they believed they were more engaged when they were online compared to face to face classrooms. It appears, therefore, that focus should be directed toward the management of online interaction, including group work and collaborative tasks, to ensure active engagement is maximised rather than be too concerned with time pressures in covering content (Decety & Jackson, 2006).

Respondents also indicated that in the absence of face to face cues, such as facial expression and body language, participants may be more likely to place others in potentially embarrassing situations. This view is supported by Darwall (1998) who believes that without a full range of interpretive cues, participants may be unable to feel

what one imagines the other person feels. This may lead to a misinterpretation of states of anxiety in other participants. Consideration should therefore be made of how additional cues may be used to confirm predictions of what one believes the other feels. Often this confirmation comes from comparing one contextual cue with another and observing a disparity. The answer *yes* may not match with a wavering voice and look of concern. Without a range of contextual cues, the ability to confirm these interpretations may therefore be limited. As Hughes et al. (2007) found, if the emotions and feelings of others are not assessed accurately, feelings of anger and isolation can lead to withdrawal, conflict and reduced learning.

The responses also indicated that the ability to empathise, as well as the accuracy of empathic interpretations, was influenced by the type and duration of interaction. Within transactional distance literature, interpretive accuracy can be enhanced if there is a teaching-learning conversation approach (Holmberg, 2003). The iterative dialogic research strategy used within the current study may have led to this type of approach, allowing a range of opportunities for confirmation of accuracy of interpretations. Respondents, most especially the teachers, also believed that the skills learned from being a participant in the research appeared to cross over to their online class. The teachers believed these learned skills led to more active empathic engagement of participants in the SMC sessions and may have also contributed to greater trust of each other. The influence of the type of interaction is supported by McAllister (1995), who believes empathy and trust within dialogue form feedback loops that result in an upward spiral of social bonding and, in turn, motivation. This effect was also shared by respondents who likened the developing relationship to something that grew over time. The role of building positive relationships in promoting motivations is also supported by Hartnett (2010).

As Ickes (1993) notes, people are generally motivated to understand each other, and this appeared to be the case for the vast majority of the respondents. It is through empathic engagement that access to others' understandings is achieved (Amin & Roberts, 2008). The benefit of synchronous tools, as Finkelstein (2006) suggests, is that they turn the spotlight squarely on the personal interaction, the human factors, and the personal stories. These personal stories and understandings were evident in both case studies and more representative of those participants with the strongest social bond. As Park and

Bonk (2007) suggest, these interactions are meaningful interactions; they are interactions that help build and solidify social bonds. They are personal interactions where participants are able to increase the accumulated observations and interpretations of others (Colvin et al., 1997). They are also interactions where participants can develop their representations of others with increasing experience and accuracy (Preston & de Waal, 2002). These representations are not fixed. They are dependent on context and, as far as Nezlek, Feist, Wilson, and Plesko (2001) are concerned, are subject also to temporal variation. That is, they can and do change over time.

5.5 An exploratory model of empathy within SMC

The SMC model of empathy presented in Figure 5.1 was developed as part of the exploratory research as understandings of empathy within SMC emerged, were identified and the overall understandings required simplification. The purpose of the development of the SMC model was to stimulate ongoing participant engagement to access deeper understandings of empathy within SMC. The model therefore held a strong exploratory nature and value within this research.

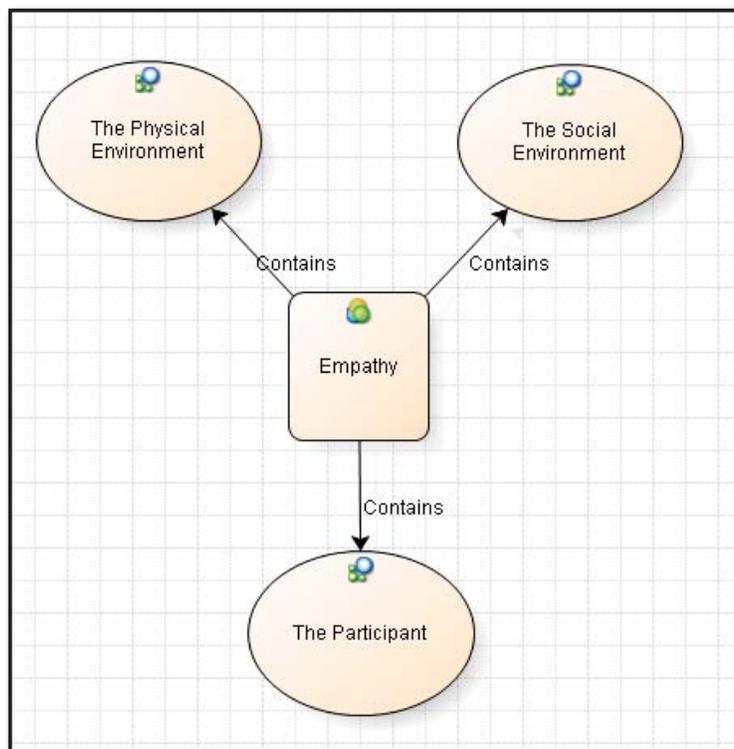


Figure 5.1 The synchronous multimedia conferencing empathy model

Within the exploratory model the first category represented is the participant. Elements of the participant branch node of most importance to respondents appeared to be the ability of participants to monitor and manage their empathic engagement. Selective disclosure of self to others and the engagement and disengagement with others empathically was also of significance. The importance of the ability to manage empathic processes is supported by others in the field (Decety & Jackson, 2006; Vonderwell & Franklin, 2002). The processes of empathic engagement shared by respondents included the selective sharing or shielding of themselves, the ability to focus their senses on the particular medium/s of most benefit to interpreting others, and the creation of alternative personas or *avatars* of themselves. The degree of regulatory capacity, especially the ability to engage with and disengage from interpreting others whilst deciding on and adjusting their own responses, appears an important skill in this process (Hodges & Wegner, 1997).

The participant branch node also incorporated how respondents thought about how to improve their empathic accuracy. Reflection about their empathic accuracy and how to improve empathic accuracy was not reported in the research by Park and Bonk (2007). The importance of reflectiveness, as reported by some respondents within the current research, may have been due to their involvement in the iterative dialogic research strategy. The research may have developed respondents' interest in empathy and the positive effects of increasing empathic accuracy. The participants also thought about their role as a teacher or student within SMC. Many students reported that they avoided *taking over* as the leader of the online session when they felt the teacher was lacking technical confidence. Students knew it was not their role to take over, even though there were times when they felt inclined to do so. This is highly relevant given the work of Preece (2005), who suggests the presence of a teacher or moderator appears to encourage empathy and the importance of the management of this role.

The physical environment is the second branch node category of the model represented. Respondents believed the physical environment had the potential to support or become a barrier to empathic engagement. The view that SMC can support empathic engagement is supported by research suggesting synchronous tools can personalise the interaction, thereby enabling a more intimate community of learners (Carabajal et al.,

2003; Woods & Ebersole, 2003). As opposed to face to face classrooms, the act of going to another classroom or office and *logging on* begins a process of voluntary active interaction. Students are also given more autonomy than in timetabled face to face classrooms, which may serve to develop self-motivated engagement. Students are also required to manage their own learning and behaviour, nearly always not being supervised in their online classes. The SMC environment also promotes active engagement during the online session, as there is a need for participants to actively interact with the software to conference with other participants. Within both case studies there was also a focus from both students and teachers on interaction, rather than purely the transfer or receipt of knowledge. It was the active engagement that promoted the positive aspects of SMC, a finding similar to other research (Park & Bonk, 2007).

The physical environment within the exploratory model emphasises the importance of the way in which active use of the functionality of the software can be used to enhance empathic engagement. As Tu (2004) suggests, it is not which functionality to use but how it is used that is of most importance. To ensure the best use of the functionality, emphasis should be on strategies that place the students in an interaction that involves themselves, other students, the teacher, and the activity (Lave & Wenger, 1991). A number of researchers similarly suggest that if synchronous conferencing functionality is used appropriately there is potential for enhanced individual participation and group collaboration (Hrastinski, 2006; Park & Bonk, 2007). This is not to overlook the role synchronous tools may have in complementing asynchronous learning and teaching (Hatzipanagos, 2006).

One of the concerns expressed about the physical SMC environment, reported by a number of respondents, was the loss of context due to the *lean* channels of communication. This loss of context and associated frustration was also noted in the research undertaken by Park and Bonk (2007). Research by De Vignemont and Singer (2006) emphasises the importance of context in the interpretation of others and point out that context often requires multiple channels to get the *full picture*. Respondents expressed this belief in their desire for richer, more reliable multimedia experiences. Motivation for greater social presence within interactions is also consistent with social presence literature (Biocca et al., 2003). Whilst the SMC environment can facilitate a richer multimedia experience, it also offers a great deal of flexibility, freedom and

personal control. However, commensurate with this freedom is a level of anxiety that for some students may lead to a sense of isolation and discomfort (Irwin & Berge, 2006).

The social environment, the third branch node category of the SMC empathy model, is the relational environment that is necessary for a community of learners to be built (Carabajal et al., 2003; Woods & Ebersole, 2003). The belief amongst both the teachers and the students was that increased social interaction along with the correct type of interaction would improve the social environment and empathic accuracy. This finding is supported by research (Colvin et al., 1997). The social environment is, therefore, of significant importance in supporting empathy within SMC as it is from here that a learning community is built (Feng et al., 2004; Carabajal et al., 2003; Stueber, 2006; Watson, 2003).

The social environment has significance for the teacher, as it is believed the teacher has the greatest influence on developing the social environment. It is the teacher, as Woods and Ebersole (2003) suggest, that is the *architect* in the creation of an effective relational environment. For Tu (2004), however, the teacher's role should be closer to husbandry than architecture in an understanding of the relationship that emphasises the human element as opposed to a structural understanding of the relationship. This view also aligns with transactional distance literature that emphasises the interplay between structure and dialogue (Dron, 2007; Pena-Schaff & Nicholls, 2004). Increasing the dialogic conversational style of interaction, it is believed, will help facilitate empathy (Holmberg, 2003). A final note in signifying the importance of the social environment is provided by Brown and Duguid (2000), who suggest that without the creation of an effective social environment, understandings can have no existence.

These three branch node categories provide the basis from which empathy within SMC may be supported. The SMC Empathy Model and its structure emphasises a multifaceted relationship between the participant, social environment and physical environment. The use of this exploratory model, it is believed, stimulated deeper thinking and dialogue among respondents regarding the interlinked nature of the relationship between these three elements. The result of this deeper dialogic engagement was shared by the respondents through the individual diagrammatic models of empathy

developed within the respondent validation interviews. It is believed that these diagrammatic models emphasised the importance the interrelatedness of the relationships involved. Understandings presented such as the *web* of interconnectivity, the interrelatedness of *flight principles*, and the relationship of the elements in the *Venn diagram*, stressed the importance of the multifaceted and interlinked relationships involved. The view that empathy is situated in a wider multifaceted relationship is supported by several other understandings of empathy in distance education, including social presence (Hughes et al., 2007), absorptive capacity (M. D. Cohen & Levinthal, 1990), and cognitive distance (Nooteboom, 2004).

The SMC models presented by respondents may also provide deeper understandings of empathy within the transactional distance, social presence and cognitive distance understandings of empathy within distance education. Within social presence, empathy's role as a relational mechanism affecting the social dynamics of technology-mediated environments may be enhanced (Kehrwald, 2007, 2008). Within transactional distance understandings, the empathy creating conversational style may be supported (Holmberg, 2003). Finally, within cognitive distance understandings, the role of nature and function of empathy within absorptive capacity may also be enhanced (Nooteboom, 2004; Petruzzelli et al., 2007).

5.6 The significance of the hermeneutic circle to the research

A key component in the research strategy used to gather and analyse respondents' understandings, has been to understand the *whole in terms of its details* and the *details in terms of its whole*. This research approach has emphasised an iterative circling of the phenomenon of empathy, drawing the lens of interpretation in and out from parts to whole as understandings deepen in complexity and breath. There has been a shared immersion in the hermeneutic circle from both respondents and the researcher. As a result, there has been the re-interpreting and integrating of understandings into our most recent (*but never final*) understandings (Gaudelli, 2009).

The research strategy allowed participants to share their lived experience and the meanings they made of that experience (Seidman, 2006). The process of engaging with participants within a dialogic interview process facilitated an opportunity to get to know

participants below their rational façade and access many of their deeper understandings (Fontana & Frey, 2003). In this way, the open, continually re-interpretive foundation of hermeneutics has been aligned with an iterative dialogic research strategy within this research (Gaudelli, 2009)

Through the use of this research strategy, the creation of a multi-layered interpretive dialogue with the research participants has eventuated (van Manen, 1990). The research diary has also facilitated a hermeneutic alertness, enabling the researcher to step back and reflect on the meanings of the situations, rather than accepting these pre-conceptions at face value (van Manen, 1997). Both June and Edmond, representative of the majority of respondents, note the success of this iterative, reflective, dialogical, research strategy. Both these respondents believe the process allowed them to construct their understandings of how they experienced empathy through the research approach used.

June (CS1) From what was said, what I have said, and the group, what has been added together you have interpreted that and formatted it into your research and I can definitely see that ... as a metaphor I would probably do a flow diagram ... Or walking along a road or a pavement and each block in the pavement is another step or understanding or bit of research that has been figured out or interpreted. (1st September 2010)

Edmond (CS1) From the start we were kind of working from the cold, we don't know one another ... we don't really know where we are coming from. Once you got your initial parts in the interview we developed them within the focus groups and you brought them back. We can see how you have narrowed down how everyone else thinks, what the main ideas are, the important things, and things like that ... you have reviewed your ideas through other people's work ... I have been able to see how you have been thinking on the topic ... perhaps you have been able to tell what I am thinking from what other people have given you. (20th August 2010).

CHAPTER 6.

IMPLICATIONS

6.1 Introduction

This chapter engages with the responses given within chapter four (Results) and the discussion of those responses in chapter five. This engagement is undertaken through the lens of the implications of these responses for the role of empathy within Synchronous Multimedia Conferencing (SMC).

The implications of the findings have been presented in sub-categories within section 6.2 to section 6.4 and include:

1. The implications for SMC conferencing participants' conferencing strategies,
2. The implications for the development and support of empathy within SMC, and
3. The implications for software developers and policy makers.

Within section 6.2, the focus of this discussion is on the implications of these responses for the specific conferencing strategies participants utilise when using SMC as a conferencing tool. Section 6.3 discusses possible implications of the responses for the general development and support of empathy within SMC. This section focuses on the general approaches, attitudes and initiatives for developing and supporting empathy as a relational mechanism, as opposed to specific participant conferencing strategies.

Finally, within section 6.4, possible implications for computer software developers and education policy makers are discussed. Within this latter section the focus is from a wider perspective, looking at potential implications of the results for the development of computer software characteristics such as functionality and reliability. In addition, within this section, the implications for educational policy development are discussed and include considerations of the findings from this case study research.

When reviewing potential implications of this research, the nature of the research context and research strategy needs to be carefully considered. The current study was of a highly situated nature. What the research does show is that for two case studies or

other contexts that are very similar to them there are improvements that can be made and implications that can be considered. The results are not generalizable to a wider population; they are merely transferable to similar contexts. The research presented is intentionally and deliberately of very limited scope. That is not to suggest that the implications that follow may not be of use for the improvement of learning and teaching and also the stimulation of dialogue around other similar SMC contexts.

6.2 Implications for conferencing strategies

Responses within chapter four suggest, compassion and caring are both expressed and experienced by SMC participants. It appears also that particular strategies used by participants facilitate more salient experiences of these phenomena. Encouraging the use of specific strategies may be beneficial in the experience of compassion and caring. These particular strategies include: i) *taking a greater interest in other participants*, ii) *showing understanding of them and their situation*, and iii) *practising patience and understanding when there are challenges to those situations* and is supported by existing research (Arnold, 2005).

Participants may also find it beneficial to use dramatic changes in both the tone and inflections in their voice. This may increase the potential for other participants to interpret with greater ease their internal frame. Responses suggest the use of *interested* and *engaging* voices and positive written messages appears to do much to put a compassionate and caring context around the specific words that are spoken or messages written and is supported by others in the field (Brna, 2006; Halpern, 2003). Teachers and students may also benefit from ensuring that compassion and caring are not restricted to within synchronous collaborations. A supportive asynchronous email or offer of help after the synchronous session was experienced by participants as supporting feelings of compassion and caring within SMC. Whilst the findings and existing research support the existence of teacher/student and student/student relations in SMC, respondents also reported these relations were also experienced over other media such as phone and face to face (Vonderwell & Franklin, 2002).

The responses of participants suggested that the main forms in which compliments were experienced was verbally, in written form, and with the use of emoticons and

annotations. Complimentary responses like “well done” and “nicely put”, and the use of ticks and smiley emoticons appeared to encourage participants. Another interesting strategy to express compliment that emerged from the research and is supported by prior research, was through participants signalling their passion about a subject or topic through an *energetic voice* (Baillie, 1996). Another particularly useful strategy may be to ensure that this compliment is not just teacher-generated. The responses may indicate that the support of students in their attempts to provide encouragement to each other as well may facilitate encouragement. This may be achieved through engaging students in discussions regarding how they can encourage each other within their online class. Gaining greater familiarity with others may also enable encouragement that is given appear more *natural* and genuine for those giving and receiving it and is also supported by others in the field (Feng et al., 2004).

With respect to helping students, the findings suggested teachers who are able to demonstrate that they are prepared to *go the extra distance* to help students to succeed, may create stronger student perceptions of being helped. This additional help was experienced orally, within the text chat environment, or later as follow up emails. Encouraging students to help each other and the teacher also has the potential to create a more supportive environment. The act of students helping the teacher may also become empowering for the students and cross over to more active engagement in learning tasks. The development of helping behaviours may also be facilitated by structuring learning tasks to incorporate a group or collaborative focus (Tu, 2004).

Humour appears to be a very effective strategy to assist in the creation of a stronger sense of belonging, or social bond within the group. Actively *lightening* the mood may serve to relax participants, allowing them to express themselves, their thoughts and emotions. To achieve this, the use of humorous stories and events, or identifying the funny side of a response, may facilitate a spontaneous spread of emotion such as laughter. This view is supported by Seidman (2006). The responses within chapter four also appeared to associate an enhanced capacity to interpret humour with a growing bond or familiarity within the group. For this humour to be successfully interpreted, participants may need to place greater emphasis on the presentation of jokes, comments, or stories. Participants may also find the spread of emotion more difficult to achieve within SMC compared to face to face interactions.

A particularly important strategy the teacher may need to develop within SMC is the management of an appropriate balance between task-focused interaction and off-task social interaction. The responses suggested teachers may feel pressured to get through the learning content because of less contact time with the students compared to a face to face classroom. The responses also suggested that this, in some cases, led to a predominant learning task oriented focus within the SMC sessions which may reduce the building of relationships (Murphy, 2004; Tu & McIsaac, 2002).

The responses also indicated that a pause, silence or non-response may signify a situation of awkwardness or tension within the group. Having an awareness of these *silent* cues may assist in avoiding the development of negative emotional feelings within the group. Preparing a range of strategies to *keep the session going*, such as additional discussion points, presenting visual stimuli (photos or animations), and supportive prompting, may be some effective strategies to overcome awkward silence.

Discussing frustrations that may arise when there are technical problems may help participants develop greater patience and understanding when such problems occur. Being prepared to ensure technical problems are eliminated, reduced as much as possible, or mitigated, may also be desirable. Another useful strategy may be to discuss with participants possible reasons for their frustration. The responses indicated that participants could become frustrated with the additional effort resulting from technical difficulties required to interpret others and not being able to achieve as much as they expected. Looking at technical challenges from an alternative perspective may also prove beneficial. SMC users could consider exploring possible benefits of experiencing technical problems. For example, some participants found they developed more refined listening and interpretive skills by needing to listen and focus more intently when there were problems. Consequently, this may create more accurate and/or acute interpretive skills, not only for this particular course, but subsequent online interactions, or even in general face to face social interaction (Baillie, 1996; Park & Bonk, 2007).

Developing conferencing strategies to mitigate the effects of stress and workload may also prove beneficial. As was found in the research, there may be both positive and negative effects of stress and workload when participating in a SMC session. Strategies

such as uploading content for the online sessions and taking time to have a break just before the online session may also help. Greater understanding of the effects of stress and workload may facilitate more patience and understanding, which facilitate empathy. Alternatively, it may be advantageous to encourage students to explore how additional stress and workload may heighten their focus on detail and even improve their interpretive skills. Through the utilisation of these strategies, students may see a degree of stress and workload as a positive effect on their ability to empathise.

In order to create a supportive environment it may be of benefit to place greater importance on treating participants more as individuals and remembering to be patient and caring. When teachers offered support that was beyond *what may be normally expected*, participants experienced increased feelings of support. This is tied in closely to being prepared to *go the extra distance*, which was found to be associated with feelings of being helped by the teacher a finding consistent with other research (Park & Bonk, 2007). The experiences of helping behaviours and a supportive environment indicated the interrelatedness between the manifestations and roles of empathy within SMC.

As was also found in the results, those who interacted to the greatest degree appeared to experience the largest increases in feelings of a social bond or relationship. This finding is also consistent with the findings of Kerhwald (2010a, 2010b). It appears that if the predominant interaction is between the teacher and students, we may conjecture that the teacher/student bond will become the strongest. Encouraging student/student interaction may help develop more uniform social bonds across the group. This strategy may reduce the predominance of the teacher/student bond that was experienced in both case studies. Participants in the study described the bond or relationship in terms such as the *group*, *community* or *club*. Using these or other similar terminology for describing or referring to the *class* may also increase feelings of a bond and attachment among its members (Caspi & Blau, 2008).

Strategies such as group discussion, joint problem solving, or peer tutoring that encourage participant social engagement, may also prove useful in building social bonds. An important conferencing strategy that was shared by participants was the positive effect of building greater familiarity with others. This appeared most successful

when experiencing other participants' personal lives and trying to get to know their characteristics and personalities. Encouraging participants to share personal stories and experiences related to personal events occurring outside the online classroom may enhance the effectiveness of this strategy (Brna, 2006; Ickes et al., 1997).

Positive motivations toward wanting to get to know others appeared to be a factor in creating an effective social learning group. A conferencing strategy to achieve this may be to discuss with participants their motivations for getting to know each other. As was experienced in both case studies, the discussion about empathy appeared to have a positive influence on later motivations to engage socially. This discussion may extend to discussing the potential benefits of getting to know each other, such as understanding where others *are coming from* and being able to learn *from their perspective*. This may assist participants to rationalise reasons to engage actively within the sessions, and kick-start a motivation to engage. It may also be helpful to encourage participants to understand the possible negative effects of those who may lack motivation to build learning relationships. Participants' negative motivations may stifle discussion, limit responses and create tension in the group. It may also be important to discuss how for some participants there may be greater challenges in building these relationships within SMC compared to face to face interactions, due to a lack of eye contact and facial expression. Increasing participants' understandings of how these factors may reduce motivation may also serve to stimulate interest in trying to engage more actively (Halpern, 2003; Vonderwell & Franklin, 2002).

There appear to be many social cues used by participants within SMC to predict others and many of these are used in face to face interaction. It may be beneficial for teachers to develop conferencing strategies that can facilitate as many of these cues as possible. Allowing sufficient social interaction and using the range of *media* channels including audio, video, text box chat, annotation over image capabilities, status indicators, and the use of emoticons, may assist in allowing participants to express themselves more fully and interpret others more easily and with greater reliability. The use of these *multimedia* channels of interaction, simultaneously, may require the enhancement of existing communication and interpretive strategies, and/or the development of new strategies. An important step to ensure that these strategies can develop may be through specific instruction in how to improve or develop these strategies through professional

development programmes, exemplars, and specific training for students and have been found to be effective by researchers in the field (O'Connor & Madge, 2001; Park & Bonk, 2007).

It may be helpful to discuss with students possible inaccuracies in interpreting others. If they are unsure of how they have interpreted an answer, response, or attitude, it may be helpful to encourage participants to ask questions of others to seek clarification.

Discussing within the group about how increasing experience with each other and their improving interpretive accuracy may also assist in their motivations to be more interactive online. This may lead to further improvements in their interpretive skills and learning outcomes as they include other perspectives in dialogical learning. Hughes et al. (2007) and Ickes, (1997) similarly found that improvements in interpretive skills led to better learning outcomes.

It may also be of benefit to discuss with students how they may be able to use the SMC environment to be more outgoing and interactive in their learning. If they are typically shy in face to face classrooms, the SMC environment may be able to facilitate their ability to create an online *avatar* of themselves, one that is more confident, positive, and engaging. As was found in the research, for some participants the SMC environment was empowering for their engagement in learning and social interaction.

As pauses in discussion were a predominant cue used for the modulation of language, it may be helpful to make this strategy explicit to all students. Telling students “*when I pause I want one of you to answer, otherwise I will say your name*” may establish greater clarity in the use of this cue. It may also serve to reduce any awkwardness when there is a silence. Through teaching explicitly more subtle language modulation cues, a greater range of cues may also become available. However, teachers may need to understand that this will require negotiating and establishing clear routines and practices over time. Organising students to respond in order, using the status indicators, or posing questions in the private chat box, may be examples of some of these practices. As it may be more challenging for some participants to interpret others because of a perceived *sensory deprivation* or feelings of *social distance*, this may result in it taking longer to interpret these cues with accuracy. Explicit teaching of strategies and providing understanding and support to those who may be experiencing feelings of

distance are strategies suggested in the literature to help in this area (Irwin & Burge, 2006; Tu, 2004).

6.2.1 Implications from Phase 2

Teachers may find it beneficial to discuss social interactions within SMC compared to other learning environments such as face to face. As Tu (2004) suggests, building a community of learners online may be more challenging than face to face. These discussions may also benefit from a focus on general approaches to learning by male and female students. Discussing how SMC may be different from face to face interactions, video conferencing, a telephone call, or even just texting, may promote thinking around the strategies when using SMC. From another perspective, when comparing the gender of users of SMC, teachers may find that, generally, female students may be interpreted more easily because of their more *out-there*, talkative interaction style. As was found in the research, teachers may also find, generally, that male students may be more *stand-off-ish*, or sit back during discussions. This is not to say it will be the case for all students; however, the two case studies indicated this pattern. A useful strategy to encourage engagement may be to discuss with those students who tend to refrain from interacting (*male or female*) the benefits of greater engagement, or strategies that may help them to engage.

Although teachers may become concerned that they have less time to cover instructional material, many students reported that when they were within the SMC session they were more engaged compared to face to face classrooms. This being the case, teachers should be encouraged, not discouraged, to facilitate social interaction as opposed to a solitary focus on content delivery. This may be especially important for distance teachers of secondary students, as there are numerous pressures to cover certain curriculum content. These pressures may influence decisions regarding a task versus social interaction. An important conferencing strategy to develop, however, may be to monitor and manage the balance between learning task requirements and the benefits of building a learning community through social interaction, a suggestion similar to that of Decety and Jackson (2006).

Compared to face to face interactions, there may be greater potential for embarrassing students who do not know an answer, or those who give an incorrect response. If the teacher is unable to pick up facial cues and body language, indicating awkwardness or anxiety, the teacher, or other students, may request a response when they would not normally. As Hughes et al (2007) suggests when this occurs, embarrassment or humiliation may be the result. This challenge may be overcome through the integration of the webcam video capability or status indicators like the *hand up* or *question mark*, indicating they are unsure or have a question. Similarly, the use of private chat messages can further personalise the interaction. When integrating the video component within the SMC sessions, teachers should also consider the purpose of the video image. As participants reported, although seeing a video image may be helpful for facial cues and greater contextual information about another person, it may also become a distraction from the content. This was a finding within the research diary. For some participants, the potential of using a video image made them more nervous of being online. Therefore, the purposeful selective use of the video capability appears the most appropriate strategic approach to the application of this feature of the SMC software.

Another specific conferencing strategy may be actually seeing (*video/photo*), or meeting other participants at some point. It appears that with an image of others, or a physical meeting, participants believed the process of building social bonds occurred more rapidly and their interpretations of each other may be more accurate. One approach for teachers to do this may be to encourage participants to post their photo within the session or utilise periods of video interaction to build this familiarity. If possible, a face to face class meeting may also be helpful to later online synchronous collaborations. Encouraging greater initial social interaction using personal images early in the year may build the learning relationship more quickly. These strategies may assist participants in creating more accurate interpretations of others through a greater range of contextual information from which to draw. Sharing these images may also create more personal experiences of each other, as was experienced by some of the participants in both case studies a finding consistent with other research (Finkelstein, 2006; Preston & de Waal, 2002).

An important finding within the research was that as the year went on, and more interaction took place, greater familiarity, interpretive accuracy, and feelings of

intimacy, belonging, and trust developed. A particularly useful conferencing strategy to use, knowing that these changes appear over time, may be to adjust expectations and teaching strategies to account for this developing relational environment. A developing relational environment was also noted by Kehrwald, (2010b). It was also a finding that the process of building the learning relationship remains a positive and enjoyable experience. When trying to create this positivity and enjoyment students may benefit from being made aware that faced with the task of interpreting others in such a new environment, new or more intensive interpretive strategies may be required. As the responses indicated, this may mean students become tired and frustrated, potentially reducing their positive experiences. It may, therefore, be beneficial to encourage students to take a break before or after sessions, to ensure the online session is as fruitful and enjoyable as possible.

Depending on how teachers structure their online sessions, there may be opportunities for participants to *hide* during online sessions. This may be due to challenges of the teacher not being able to *connect* visually with all participants at the same time, as a teacher would be able to do in a face to face classroom. It may, therefore, be beneficial for teachers to personalise the interaction by requesting responses from specific students, on relevant occasions using webcams, or by monitoring participation in a collaborative task to ensure everyone is participating.

It was also a finding of the research that participants could use this ability to hide to selectively *shield* or *disclose* themselves to others. Some participants appeared to use the features of SMC as a mechanism so they could hide from giving responses or protect themselves from the embarrassment of being associated with an incorrect response. Using supportive encouragement to participate, such as praise for an attempt, may develop greater confidence to respond. Even private text chat messages of support when an incorrect response is given may encourage later participation. As two normally shy participants reported, the SMC environment provided an ideal opportunity for them to be more confident and interactive in the lesson. This, they believed, was due to the ability to shield their social presence from potentially embarrassing situations. This in turn, they felt, gave them confidence to interact more actively than they normally would in a face to face lesson. Similarly, for a group of male participants, the use of the private chat, emoticons, and other private collaboration tools within the online session

facilitated engagement. The ability to engage and disengage empathically within interaction is an important skill to develop and emphasised by researchers in the field (Hodges & Wegner, 1997).

It may be advantageous to discuss interpretive errors that may occur and remind students not to judge others too quickly. Teachers might need to discuss with students that the effects of having to read segmented language, or short one word answers, makes interpreting others more difficult and more prone to misinterpretations. Therefore, teachers should encourage students to use full and descriptive language and engage within the class as much of their personality and passion as possible. This will give other participants much more contextual information to work with when interpreting responses. It may also be helpful to emphasise to both teachers and students to personalise the interaction by naming others and directing their questions or responses (Carabajal et al., 2003).

Motivation was one of the predominant themes to re-emerge within Phase 2 of the research. The responses from this reengagement suggested it may be beneficial to discuss with students possible rationales for their active engagement in online sessions. Two of the main purposes discussed in Phase 2 included i) *how exposing yourself to alternative perspectives and discourses may create deeper understandings, a greater range of solutions and a more holistic perspective*, and ii) *how gaining alternative perspectives may allow you to evaluate how you are progressing compared to other students and teacher expectations*. The use of strategies to stimulate additional dialogue and engagement may also assist in interpreting problems or issues that might develop before they occur. As reported in the results, the teacher may be able to intercept an issue before it becomes a problem.

A significant finding to emerge from the research was that participants in both case studies did not experience empathy as an isolated SMC synchronous experience. Participants reported that empathic experiences within synchronous interaction were also supported by empathic experiences from asynchronous collaborations. It may prove beneficial, therefore, for teachers to develop strategies to integrate SMC with asynchronous interaction. This may involve tools such as email, blogging, wikis, or learning management systems, to create blended synchronous and asynchronous

empathic engagement, a finding also evident in other research (Vonderwell & Franklin, 2002).

The responses also indicated that when developing or reviewing conferencing strategies, it may be beneficial to give careful consideration to the multifaceted relationships between i) *the participant (the individual)*, ii) *the physical environment (SMC)*, and iii) *the social environment (how the individuals socially interact)*. Concentrating on trying to improve the physical SMC environment in isolation ignores the importance and interrelated nature of the participant and the social environment. The overarching model of empathy developed for Phase 2 to encompass these categories and the resultant participant models emphasised not only the importance of each category, but more so the multifaceted relationship between them. Conferencing participants may, therefore, benefit immensely from careful consideration of all three of these components in relation to the use of conferencing strategies and the way in which they relate and impact on each other.

With respect to the participants, consideration should be made of how their motivations, skills, attitudes, and conferencing strategies play an integral part in their ability to empathise. Consideration should also be taken of the physical SMC environment, including asking questions such as:

1. Is all the functionality of the multimedia technology being used in a purposeful and strategic manner?
2. Can additional functionality be integrated to enhance the social experience and interpretation of others?
3. Are technical problems eliminated, reduced or mitigated as much as possible?
4. Do SMC conferencing strategies align with a blended asynchronous/synchronous learning environment?

The social environment is of importance to all participants, but should be of special significance to the teacher. This may be the one category over which the teacher may have greatest influence. It is within the social environment that the teacher has the greatest potential to become the architect in the creation of an effective relational environment (Woods & Ebersole, 2003).

6.3 Implications for the development and support of empathy

The responses within chapter four suggest the phenomenon of empathy may best be developed and supported through the manifestations of empathy (*how it is found to exist*), and the function of empathy (*the purpose it serves*) within SMC. Therefore, empathy may be best promoted through the support and development of compassion, caring, helping behaviours, and the encouragement of emotional contagion. It also appears that through developing and supporting these manifestations, the numerous roles of empathy within SMC may also be realised.

Encouraging compassion and caring and creating an environment where these manifestations of empathy are valued may be one general approach to assist in the development and support of empathy. To achieve this, it may be beneficial to promote a culture of understanding and patience within SMC classes which is a strategy also supported by Arnold (2005). This may be assisted through training programmes and within professional development opportunities for distance learning teachers who use SMC. Understanding and patience may also be promoted by encouraging students to take a greater interest in each other. Extending this compassion and caring from the SMC environment to include asynchronous collaborations across email and asynchronous collaboration tools may also prove beneficial and is supported by literature in the field (Vonderwell & Franklin, 2002).

Promoting understandings that empathy develops not just within an isolated online course, but may be developed from course to course as teachers and students undertake other online SMC programmes, may also prove beneficial. Developing and transferring understandings from one course to other courses has the potential to develop empathy across a wider community of SMC users. Developing and supporting empathy over successive years by handing on experience gained, lessons learned, and strategies developed, may be of assistance to the wider SMC community. This may include experienced SMC participants supporting professional development programmes, undertaking or becoming part of research and publications, and seeking involvement in other distance learning development projects, to enable a wider cross section of SMC participants to learn more about empathy within SMC. Care should be noted, however,

of the situated nature of the findings and their limited transferability to contexts outside the current case studies.

Responses indicated a significant aspect of the development and support of empathy could be the development and support of teachers' ability to *go the extra distance*. Providing sufficient preparation and release time may be an important component of facilitating this opportunity. Enabling teachers to spend time to give additional help to students may help facilitate the development of a culture of care. If this preparation and release time is not provided, the negative impact of increased stress and workload may also be evidenced. The negative effects of technical problems were widely reported by participants. Although the positive benefits of developing and/or strengthening their interpretive skills may be promoted when this occurs, significant effort on reducing or mitigating technical problems should be considered.

The time spent in social interaction appears to be a significant factor in assisting in the development of a social bond or relationship. To support and develop participants' opportunity and ability to empathise within SMC, importance should be placed on providing sufficient time to interact socially. The pressure of time to cover instructional content may be reduced if sharing of participants' experiences of the more focused nature of SMC sessions is shared with other SMC users. This may alert SMC teachers to the expectations of how much content can be covered, how best it can be covered, and how to develop a social versus task focused balance. As was found in the case studies, the task versus social balance may be further supported through use of asynchronous forums where participants are encouraged to socialise asynchronously with the other members of the class, thus creating a stronger social bond during the SMC sessions. This strategy was especially observed in Case Study 2 where a comprehensive virtual classroom was created within the SMC software by the online teacher, to which the students could return asynchronously (see Appendix X).

At present there is believed to be no additional acknowledgement completing an online distance learning course using SMC in comparison with face to face courses. For some students, parents, teachers and schools, distance learning courses may even be seen as a second rate option. To support and develop empathy within SMC, it may be beneficial to increase the extrinsic motivations for students to participate in SMC online

programmes. This may be especially relevant as distance education is expected to become more prevalent generally as technology and connectivity become more pervasive (Moore & Anderson, 2003). Endorsements acknowledging completed courses using SMC may create a desire for participants to complete at least one online course using this type of delivery option. This endorsement may be particularly relevant as future employers seek distance learning options for their own staff training needs.

Two additional approaches to develop and support empathy within SMC may be to develop and support the accuracy with which participants are able to predict others and promote the benefits of SMC in the facilitation of empathy. Examples of how this accuracy may be improved include: i) *the creation of a more reliable clarity of experience*, ii) *the ability to use a wider range of interpretive cues through video image and wider SMC functionality*, and iii) *training for participants and greater time to develop interpretive skills*. There may also be support given to the development of empathy through supporting and promoting the benefits of SMC, including: i) *the ability to create online persona that may motivate the shy or engage the non-verbal*, ii) *the ability to create an online virtual classroom and develop a sense of belonging for students*, and iii) *the ability to socially interact and learn in a digital world in which they are familiar and already engaged in, such as Facebook and texting*.

6.4 Implications for programme developers and policy makers

The responses to Research Questions 1 and 2 suggest that SMC is a learning environment in which empathy may exist and that this environment supports the development of learning relationships. This has important implications for both software developers and policy makers whose objective it is to support the development of online learning environments that successfully facilitate learning relationships.

The responses suggest that software developers may wish to consider the development of functionality that assists participants to engage in the purposeful use of a range of media channels to interact. The results suggest there were benefits in using a range of multimedia channels of communication. It was also found that participants experienced empathy not solely in synchronous collaborations but more importantly within blended synchronous/asynchronous social interactions. The importance of blended asynchronous

and synchronous learning environments for improving the effectiveness of interactions is also emphasised by research in the field (Tu, 2004).

In relation to the specific case studies within this research, policy makers may wish to consider the implications of the results in relation to several issues. A lack of bandwidth was a challenge for both case studies. When increasing the functionality of software, especially the use of video and when the software is used within a multipoint synchronous context, there is a requirement for bandwidth, network, router and computer configurations that support this type of interaction. The exact nature of issues related to the technical and quality of experience were possibly varied and complex, however, further investigations of these issues may prove beneficial.

The findings indicated the SMC environment as it was used within the case studies facilitated the flexibility required for the integration of blended synchronous /asynchronous learning. Students were able to engage with the benefits of synchronous collaborative learning whilst covering the remaining components of the programme and interaction in the asynchronous environment. The benefits of blended synchronous and asynchronous online collaboration is emphasised by Vonderwell and Franklin (2002). Given sufficient internet bandwidth and correct software and hardware configurations, the software can also be used by multiple users in one school. The ability for multiple users enrolled in multiple courses within a single school creates a range of flexible learning options for the school compared with a single fixed-point video conference. The greatest challenge to the realisation of this capability, as indicated by participants in their responses, appears to be the quality of their online experience.

The results indicated that although schools have some degree of similar organisational structure, there also appears to be great variation in timetables, the length of classes, the number of classes per day, and class starting and finishing times. The varied timetable structure across schools made it difficult for students and teachers engaging in synchronous distance learning programmes and promoted the use of two online sessions per week to enable sufficient synchronous interaction to occur. Teachers and students often needed to miss other classes to participate. This becomes one more challenge to participating in a synchronous component of online learning. Alignment across schools

may be a consideration to help facilitate greater ease of access for teachers and students to these programmes.

Many of the participants in the study demonstrated a high level of motivation and application toward learning how to use the SMC software. Learning about the functionality of the software, however, appeared to take the form of a *just in time* learning approach. Consideration of additional professional development opportunities, or exploring barriers that may exist to taking up existing training opportunities may be of benefit. Specific training programmes or exemplars of best practice may assist in more effective pedagogical use of the SMC software.

A finding of the case studies was also that the SMC software appears to facilitate the opportunity to create an online identity for the class/programme (*a virtual online classroom*). As was found in the research, and supported by literature, this identity led to feelings of belonging and support (Caspi & Blau, 2008). Populating the online classroom with images, PowerPoint presentations, documents, videos and questionnaires related to the topic, appeared to help participants in both case studies to build a sense of belonging to the course and other participants. There may be benefits in the creation of online exemplars or professional development to facilitate the development of these online virtual classrooms.

It is clear from the findings that there is a range of skills and strategies that support the development of effective empathic interaction within SMC. Because this research involved the purposeful selection of case studies, the focus within the research approach was on the selection of cases that were expected to exhibit empathic interaction. Examples of non-empathic cases were, therefore, not expected to be represented in the findings. Given this, it is not possible to say that all SMC classes will contain empathic interaction. It is therefore important to note that these specific case study findings are not reflective of the wider SMC community of users. Additional research is therefore recommended to explore empathy in a wider range of SMC contexts.

The case studies indicated the teachers may have gained valuable experience with respect to relational skills and strategies as a result of being involved in SMC online teaching. Additional or alternative relational and interpretive skills may develop within

SMC and consideration of acknowledgement of these skills may facilitate their wider use and integration.

Within the online case study contexts software functionality existed to allow participants to engage in joint or collaborative online projects. Breakout sessions where participants can collaboratively work on joint projects may serve to develop greater empathic skills by facilitating greater engagement with other participants' feelings by forcing them to reason about others (Brownell et al., 2002). Respondents that interacted to the greatest degree were also found to experience the greatest increases in feelings of social bond. Software developments that record the level and type of interaction may, therefore, be of benefit in supporting teachers' ability to monitor and promote more collaborative participant engagement.

The results from both case studies indicated a general difference between the empathic engagement of male and female participants. Consideration around the issues with respect to the development of separate gender online courses may be beneficial. The finding of females generally appearing more empathic was supported by Preece (2005). Therefore, should the provision of SMC single gender options for distance learning be considered as is the case in single sex schools? Again the development of separate *break out* meeting rooms for single sex gender groups may enable students to engage with other like-minded students. This sub-group separation may extend to allow students to interact with other groupings such as cultural identities.

Improvements to the functionality of the SMC software, may benefit from a consideration of not losing the ability for participants to voluntarily *disclose* or *conceal* their personality. Research by Decety and Jackson (2006) and Vonderwell and Franklin (2002) also indicate the importance for participants to manage their empathic engagement. Without the potential of being able to selectively disclose their identity there may be a reduction in the benefits for those participants who are shy or not confident in face to face classrooms. It appears that the SMC environment may provide non-confident learners with a learning context where they can become more motivated, confident and positive. The replication of the face to face classroom within SMC may end up creating a barrier to these non-confident students through the creation of the

same socially threatening environment as they experience in their face to face classrooms.

Responses from the case studies indicated that when technical problems were experienced, SMC was seen to be a second rate learning option compared to a face to face classroom. Reducing or eliminating these technical issues may increase the perception of SMC as a viable and valued learning context. As also indicated in the responses, when there were no technical problems, participants felt they were able to build relational bonds and were motivated, confident and positive. Participants also felt this type of digital asynchronous and synchronous collaboration is not foreign to them as they are very comfortable with texting and Facebook.

The opportunity for participants to reflect on relating to others within SMC appeared to have a positive effect on their ability to empathise. Therefore, promoting the opportunity for participants to reflect on interpreting others may have positive benefits for empathy within SMC learning contexts. Professional development programmes and online exemplars may assist in this promotion. Developing functionality within the software that can facilitate the creation of a reflective diary to encourage the discussion of interpreting and relating to others may similarly support these reflective processes.

There may be benefits in the consideration of participants' responses to the proposed multifaceted relationship between the participant (*the individual*), the physical environment (*SMC*), and the social environment (*how the individuals socially interact*) in the facilitation of empathy within SMC. Participant responses suggested these components cannot be isolated and should be viewed more of a *web* rather than pillars of support. If they are explored or developed separately, the integrity of the multifaceted relationships that bind them together may be lost.

6.5 Research implications summary

A significant implication of the findings of this research is that through the integration of a range of conferencing strategies, empathy can not only be facilitated within SMC, but appears to form a cornerstone of interpersonal relationships. Previous studies have emphasised the significant role empathy holds within the development and sustenance

of relationships (Acaster, 2000; Bissonnette et al., 1997). The findings also imply that the synchronous environment of SMC should not be viewed in isolation from asynchronous tools. It appears that through a blending of synchronous and asynchronous collaboration tools, the benefits of both can be more fully realised (Vonderwell & Franklin, 2002). When using both synchronous and asynchronous collaboration tools, Tu (2004) emphasises the need to ensure the strategies and applications used are in alignment. This view is further supported by Davis and Kraus (1997) who suggest that those who are most empathically accurate are able to use a wide range of strategies rather than a few.

In the development and support of empathy what may be important are i) *the development of the individual*, ii) *support for the social interaction of the group*, and iii) *a physical environment that is able to support these developments*. These views are consistent with research that supports the development of empathy (Arnold, 2005). As Tu (2004) notes, online social interaction is important and we cannot take it for granted that participants know how to collaborate effectively.

For policy makers and software developers, although the results are situated to a specific context there may still be a number of relevant implications. The most important of these may be the limitations currently to the empathic experiences of participants due to technical problems. The lack of quality of experience also appears to have forced the teachers within the case studies to limit the functionality of SMC software that they used, including the video capability of the medium. Therefore, improving the quality of service may be of assistance for developing more interactive use of SMC functionality. SMC offers conferencing for teaching and learning in these case studies, not just in isolated geographical areas in Southland, but across New Zealand. Therefore, policy makers may wish to consider the results of this study not just in relation to these specific case studies but how they may transfer to other similar SMC learning and teaching contexts. This may be of special significance when considering the proactive role the New Zealand government has already undertaken in providing a guiding framework for the development of e-learning, including the release of three policy documents over the past decade to increase the development of secondary online learning (Powell & Barbour, 2011).

As Finkelstein (2006) suggests, synchronous technologies have the potential to *warm* the way we learn online by personalising the interaction. Real time interaction can reveal the natural *give and take* subtleties of human dialogue which are central to building relationships. Synchronous technologies have the opportunity to humanise the learning experience, and in combination with asynchronous tools have the potential to support communities of learners. As Rifkin (2009) argues, it is in dialogue that we create relationships and it is within these relationships that we create shared and individual understandings.

6.6 Contributions to knowledge

The findings from this study contribute to knowledge in the areas of theory, research and practice. In the area of theory, the findings have contributed to the development of participant models of how empathy may be experienced within SMC. Some of the findings may contribute to knowledge in areas of research already explored; however, many findings also were found in areas in which there has been no existing research. For practice, the research provides many examples of *how* participants experienced empathy along with strategies and initiatives that may assist in the development and support of empathy within SMC for other users.

The research contributes to understandings related to the importance of empathy in online learning in general and synchronous conferencing in particular. These findings support previous research in this area (Biocca et al., 2003; Ickes, 1997; Rogers 1975). The research also contributes to the importance of empathy within the education sector (Holmberg, 2003; Rogers & Freiberg, 1994; Tu & McIsaac, 2002). The research has also been able to add to deeper understandings of the process of empathy within SMC, and the self-regulatory necessities of successful empathic engagement (Bandura, 2002; Decety & Jackson, 2004).

A contribution to knowledge in the field, especially for other conferencing participants, has been the collection of a range of responses reporting how compassion, caring, compliment, and helping behaviours were experienced within SMC. These understandings have not been previously gathered in research and add to the findings of

Park and Bonk (2007) and Pfeil and Zaphiris (2007, 2009) in this area. These findings are expected to contribute to understandings, especially with regard to conferencing participants, on *how* empathy is experienced.

The research has contributed to greater understandings of how participants experienced technical problems, stress and workload. This knowledge can be of benefit to conferencing participants in developing their own conferencing strategies and for programme and policy makers on limiting these challenges. The research has also contributed understandings that these challenges may develop a wider variety of interpretive skills and strategies, and advances previous research in the field (Baillie, 1996; Park & Bonk, 2007; Pfeil & Zaphiris, 2007). The research also contributes to on-going dialogue related to the importance of blended synchronous/asynchronous environments' potential to maximise relational experiences (Vonderwell & Franklin, 2002), and resultant participant satisfaction (Richardson & Swan, 2003).

Understandings in relation to the various roles of empathy within SMC have also benefited from respondent experiences of a supportive environment, the development of a social bond, and the various cues used in language modulation. These findings are again expected to support existing conferencing participants and those who are developing the field.

As the research was exploratory in nature, there were also several unexpected contributions to knowledge from the findings. Many of these came from the themes that emerged within the research, including the factors impacting on empathic accuracy, participants' creation of more confident and engaging *avatars* of themselves, and comparisons of gender differences in engagement.

A significant contribution to knowledge has also been the development of a range of participant models of empathy within SMC. These models may promote future research directions and provide a context in which to situate current and future understandings of *how* participants experience empathy within SMC. The models may also provide conferencing participants, software developers and policy makers with a range of structures in which to understand the multifaceted and interlinked relationships between the factors impacting on empathy within SMC. An important contribution of this research, however, may be to those using synchronous multimedia conferencing for

learning and teaching. The experiences shared within this research may contribute to more effective learning and teaching outcomes.

The SMC models and understandings presented may also provide deeper understandings of the nature and function of empathy within the transactional distance, social presence and cognitive distance understandings of empathy within distance education. Social presence research may benefit from deeper understandings of empathy's nature and function as a relational mechanism affecting the social dynamics of technology-mediated environments (Kehrwald, 2007, 2008). Transactional distance literature may benefit from a deeper understanding of empathy within Holmberg's (2003) empathy-creating conversational style. Finally, within cognitive distance literature, understandings of the nature and function of empathy within absorptive capacity may also prove beneficial (Nooteboom, 2004; Petruzzelli et al., 2007).

Finally, this research also progresses our understanding of the use of synchronous multimedia conferencing as a research tool. This contribution adds to the research undertaken by Park and Bonk (2007) that previously used synchronous conferencing to gather interview data, online, via distance. The experience gained and results obtained from this research may lead other researchers to explore the potential of using synchronous multimedia conferencing as an effective interview medium. The true contribution from the use of this conferencing tool for research may be in expanding the horizons of researchers, geographically, especially when limited by the logistical constraints of conducting research over distance.

6.7 Strengths and limitations of the study

Improving the strengths of the study and reducing the limitations is influenced by the quality of data, data analysis techniques and reporting. The credibility, transferability, dependability and confirmability of the overall study are the benchmarks by which this study should be measured (Denzin & Lincoln, 2003). The use of two interview methods, across two case studies, in an iterative research strategy, within a hermeneutic context, along with using final respondent verification and triangulation, has increased the strengths and minimised the weaknesses of this study (Denzin & Lincoln, 2005).

A significant limitation of this study is the boundaries around which this research can be interpreted. The findings, by their nature of being interpretive, are just that, an interpretation, a subjective view. The data consist of interpretations by the research participants of their own lived reality, and then interpretations are made of these interpretations by the researcher and other participants within the research process. This creates layers of interpretive error, influence, and bias. Taking this into account, the findings should not be taken as more accurate, authoritative or truthful than that of other research. This research should be viewed for what it is, interpretive and thus subjective. That is not to say the results are not illuminative. It is also not to suggest the findings have not achieved their intent to promote understanding of the nature and function of empathy within SMC (Crotty, 1998; Denzin & Lincoln, 2003).

The results will be restricted in their generalisability due to a case study design. The case study contexts were not selected randomly and therefore the results cannot be generalised to a wider population (Gray, 2004; Rosier, 1988). This is not a problem as it was not the intention of this exploratory research to make generalised recommendations. Rather, it was to both promote and develop understandings which future research may test.

Taking these limitations into account, there still remain considerable strengths to this study. This study investigated an area of significant contemporary interest and activity. Distance learning has become and is expected to continue to become an increasingly important mode of education within the education sector. Synchronous multimedia conferencing is becoming a significant conferencing tool in the distance learning field and thus warrants research attention. This specific investigation, promoting understanding of the nature and function of empathy in synchronous multimedia conferencing, is also of special significance due to the importance of empathy in social interaction and learning. It is a research area that has previously not been explored and one that has created new understandings about a relatively new learning environment. The results, therefore, have the potential to assist conferencing participants, programme developers and policy makers improve learning and teaching relationships and, in turn, learning itself.

6.8 Areas for further research

This research provides an addition to the literature in a field that has lacked comprehensive research activity in the past (Carabajal et al., 2003). Irwin and Berge (2006) suggest that the research that has been undertaken in this field has been fractured and has little coordination. Therefore, this research has focused on paying attention to the social phenomenon of empathic interaction and its role in SMC. A rationale for this focus has been the central role of empathy in linking relational issues together (Preece, 2005). Whilst the research has illuminated many understandings regarding how participants experience empathy within SMC, it has also highlighted many areas where additional research may move understandings in the field further.

Although the research has identified many specific participant attributes that contribute to empathic accuracy within SMC, this has not been exhaustive. The finding that specific attributes or skills can assist in empathic accuracy is also supported by Davis and Kraus (1997). Therefore, further research that focuses on the identification and interrelatedness of additional conferencing strategies and skills that enhance empathic accuracy is expected to be beneficial.

Although this research focused on synchronous conferencing, the findings emphasised the importance of situating synchronous conferencing within a wider asynchronous/synchronous blended learning environment. Further research into the balance between synchronous and asynchronous learning within blended learning environments may be of benefit. There may also be merit to a focus on the influences of a dialogic teaching style within SMC (Moore & Kearsley, 2005). The coordination of several research studies in the area of synchronous/asynchronous blended learning may do much to further the understandings of the place synchronous learning might take in this particular distance learning environment (Park & Bonk, 2007).

Given both case studies identified gender differences in empathic engagement, further research into these gender differences also appears warranted (Dias et al., 2006; Graham & Ickes, 1997). It may also prove beneficial to explore other participant characteristics in relation to empathic engagement within synchronous multimedia conferencing. Gender may not be the only participant characteristic that influences engagement in

empathic interaction. Again, several research studies may be required to encapsulate the wide range of characteristics that may be of relevance.

Research into participants' motivations within SMC may highlight more subtle effects of motivation on empathy within SMC and build upon other research in the field (Hartnett, 2010; Singer et al., 2006). The field may also benefit from a consideration of how empathy may be experienced differently from alternative cultural perspectives (Pedersen et al., 2008). Alternatively, rather than asking how females and those from other cultural perspectives may influence empathy within SMC, an alternative research question may be asked of how empathy within SMC may influence these sub-groups (Tu, 2004).

Finally, the understandings presented may be strengthened through repeated qualitative design studies that conclude similar findings (Fink, 2005). Additional studies looking into aspects of empathy within synchronous conferencing are recommended so that the generalisability of the collective understandings may be increased (Yin, 2003a). Whilst replicating the same research is not required for the strengthening of understandings, the importance of building on previous studies is expected to be of benefit. This research has especially been able to build on the work of O'Connor and Madge (2001), Park and Bonk (2007) and Pfeil and Zaphiris (2007). It also provides a model for promoting understandings of empathy as a relational mechanism building on transactional distance, social presence and cognitive distance models (M. D. Cohen & Levinthal, 1990; Hughes et al., 2007; Kehrwald, 2007; Nooteboom, 2004).

6.9 Chapter summary

This chapter represented a reengagement of the responses within Research Questions 1 and 2 from the lens of the implications of the responses to these questions to empathy within SMC. With respect to the specific conferencing strategies, it appears that empathy can be facilitated through the integration of a range of strategies. With respect to the development and support of empathy, it appears that through the development and support of the manifestations of empathy, empathy itself will be supported and developed. For policy makers and software developers, the responses hold a number of implications. The most important of these appears to be the limitations currently to the

empathic experiences of participants due to technical problems. This, in turn, appears to limit the full functionality and pedagogical utilisation of the SMC software. Increasing quality of experience for participants, therefore, appears a major challenge in overcoming these issues.

The themes that emerged, the categories that were developed, and the overarching SMC models developed by participants, have provided implications for the role of empathy within SMC. Considering these implications within the context of a multifaceted relationship between the participant, the physical environment and the social environment may be the most useful of these implications. It is suggested that the SMC empathy models may provide a framework for conferencing participants, software developers and policy makers to more fully understand the nature and function of empathy within SMC. When considering how important the relationships are between these three components of the SMC empathy model, the spider web model (see Figure 4.11) is one of these models that summarises this relationship. Within this representation, it is the *web* that facilitates effective empathic capture, not the strengths of the individual strands. So, too, with empathy within SMC, it appears that it is the multifaceted relationships amongst these categories that are the most significant to the support of empathy rather than the categories taken in isolation.

The research contributes to knowledge in a number of areas including theory, research and practice. The study investigated an area of distance education not already explored, producing a range of findings. The research has also built on research that has already been undertaken in the distance education field. Most notably the research contributes to the understanding of the nature and function of empathy within SMC. A significant contribution to knowledge has been the development of SMC models of empathy that have the potential to further understandings of empathy in this area.

There are numerous strengths and limitations of this research. These should be explored in the context of the credibility, transferability, dependability, and confirmability of the findings as opposed to concepts such as reliability and validity. The interpretive nature of this research, along with the use of a case study design, places limits on the generalisability of the findings. Taking these limitations into account, there are still significant strengths to the study. The study has presented findings that may assist

conferencing participants, software developers, and policy makers, in the facilitation of effective online learning within SMC. The findings have also resulted in the development of SMC models that may contribute to understandings of empathy in distance education in general and the transactional distance, social presence, and cognitive distance fields.

Several areas were identified where additional research may be beneficial. Research to identify additional skills and strategies that facilitate empathy within SMC is expected to contribute further to these findings. Additionally, research that explores the role of empathy within blended synchronous and asynchronous distance education programmes may more fully explore empathy within the wider online learning contexts currently used. The role of gender, motivation, and cultural diversity may also benefit from targeted research into empathy within SMC.

6.10 Final thoughts

The research intent of this study was to promote understanding of the nature and function of empathy in synchronous multimedia conferencing (SMC). It is believed that this intent has been achieved through a research strategy that was aligned within a hermeneutic perspective. The alignment of a hermeneutic perspective within an iterative dialogical research strategy enabled the development and interpretation of understandings over successive iterative cycles. The respondents and the researcher have built understandings over time and through dialogue. The findings themselves have produced a number of contributions to knowledge in the field of empathy, within distance learning generally, and synchronous multimedia conferencing in particular. A significant contribution has been the emergence of participants' models of empathy within SMC. It is believed that these models may guide conferencing participants, software developers and policy makers in the support and development of empathy in SMC. The research has also contributed to research practice using synchronous conferencing tools as a research medium.

EMPATHY

“I know, that you know, that I know, that you know”

(Rifkin, 2009, p. 135)

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APPENDIX A.

SILC PRINCIPAL INFORMATION SHEET



MASSEY UNIVERSITY
GRADUATE SCHOOL OF EDUCATION
COLLEGE OF EDUCATION
MASSEY UNIVERSITY
PRIVATE BAG 11-222
PALMERSTON NORTH

UNDERSTANDING THE NATURE AND FUNCTION OF EMPATHY IN SYNCHRONOUS MULTIMEDIA CONFERENCING

INFORMATION SHEET – SILC PRINCIPAL

My name is Wayne Duncan and I am the Deputy Principal at Northern Southland College. I am also a student enrolled for the Doctor of Education degree at Massey University. As part of the degree, I am conducting research into the nature and function of empathy within synchronous multimedia conferencing.

The research will be looking at empathy (*the ability to perceive the feelings and emotions of others*) within synchronous multimedia conferencing (*online communication tools that use real time; voice, video, and application sharing*). I am interested in understanding how participants using synchronous multimedia conferencing experience and understand empathy.

Within the SILC programme, students and teachers from distance education classes have been identified as potential participants for this research. I would like to ask your permission for them to participate in this research as I believe their involvement would be beneficial to the study.

The Southland E-Principal will signal to eligible teachers that the research is taking place and provide them with information about the study. I will then contact the teachers, students, and their respective schools with an information letter and consent form outlining the research and requesting their participation.

Although the SILC programme may be identifiable the schools will not be identified within the final report and participant names or references to identify them will also not appear in the final document to protect their identity. Attached to this information letter are copies of the information letters and consent forms for the teachers and students.

Thank you once again for considering the involvement of the SILC programme in this research. I am happy to answer any further questions you may have before you grant permission. If you have any questions please do not hesitate to contact me or my supervisor.

Yours sincerely

Wayne Duncan

Deputy Principal
Northern Southland College
Maria Street
LUMSDEN

Tel. 03 248 7121 cell [REDACTED] Email: wduncan@nsc.school.nz

Supervisor:

Dr Benjamin Kehrwald
Senior Lecturer, School of Curriculum and Pedagogy
Massey University College of Education
Private Bag 11 222
PALMERSTON NORTH

Tel. 06 356 9099 Exn: 8714 Email: B.A.Kehrwald@massey.ac.nz

Massey University Human Ethics Committee Approval Statement

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/01). If you have any concerns about the conduct of this research, please contact Dr Karl Pajo, Chair, Massey University Human Ethics Committee: Southern B, telephone 04 801 5799 x 6929, email humanethicsouthb@massey.ac.nz

APPENDIX B.
SILC PRINCIPAL CONSENT FORM



MASSEY UNIVERSITY

GRADUATE SCHOOL OF EDUCATION
COLLEGE OF EDUCATION
MASSEY UNIVERSITY
PRIVATE BAG 11-222
PALMERSTON NORTH

**UNDERSTANDING THE NATURE AND FUNCTION OF
EMPATHY IN SYNCHRONOUS MULTIMEDIA CONFERENCING**

SILC PRINCIPAL CONSENT FORM

I have received information regarding the research project described in the information sheet. I have also been given the opportunity to ask questions or obtain additional information if required.

I also understand that the SILC programme's participation is voluntary and that I may withdraw our involvement within one month of signing this agreement without the need to give reasons.

I also understand that information that is provided by participants will be held confidentially. Information reported will not identify participants or the school.

I also understand that if teachers or students are selected and agree to participate in the research, they will be made aware of their rights and provided with information about the study.

I agree to allow the participation of the SILC programme in this study under the conditions set out in the Information Sheet.

Signature:

Date:

.....

Full Name – printed

School - printed

Position - printed

.....

APPENDIX C.

INFORMATION SHEET – SCHOOLS



MASSEY UNIVERSITY
GRADUATE SCHOOL OF EDUCATION
COLLEGE OF EDUCATION
MASSEY UNIVERSITY
PRIVATE BAG 11-222
PALMERSTON NORTH

UNDERSTANDING THE NATURE AND FUNCTION OF EMPATHY IN SYNCHRONOUS MULTIMEDIA CONFERENCING

INFORMATION SHEET - SCHOOLS

Introduction

My name is Wayne Duncan and I am the Deputy Principal at Northern Southland College. I am also a student enrolled for the Doctor of Education degree at Massey University. As part of the degree, I am conducting research into the nature and function of empathy within synchronous multimedia conferencing.

The research will be looking at empathy (*the ability to perceive the feelings and emotions of others*) within synchronous multimedia conferencing (*online communication tools that use real time; voice, video, and application sharing*). I am interested in understanding how participants using synchronous multimedia conferencing experience and understand empathy. I have requested permission from the SILC Principal for this research to take place and this has been granted.

Within your school, a distance education teacher and/or student/s from a distance education class have been identified as potential participants for this research. I would like to ask your assistance for them to participate in this research as I believe their involvement would be beneficial to the study.

The Southland E-Principal will signal to eligible teachers that the research is taking place and provide teachers with information about the study. I will then contact the teacher and students with an information letter and consent form outlining the research and requesting their participation. Although I plan to involve students 16 years or older, if your school requires parental consent as well, I will ensure this is obtained. Attached to this information letter are copies of the information letters and consent forms for the teachers and students

Interviews will occur online in school time at your school and student interviewees will have the opportunity to have a support person with them. If this is requested can I ask your assistance in arranging this to occur. I would also like to offer your school a gift voucher of \$40 in compensation for the use of your school facilities and time.

Your school will not be identified within the final report and participant names or references to identify them will also not appear in the final document to protect their identity.

I thank you for your assistance in making this research possible. I am happy to answer any further questions regarding the research. Please do not hesitate to contact me or my supervisor if you have any further questions.

Yours sincerely

Wayne Duncan

Deputy Principal
Northern Southland College
Maria Street
LUMSDEN
Tel. 03 248 7121 cell [REDACTED] Email: wduncan@nsc.school.nz

Supervisor:
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Massey University Human Ethics Committee Approval Statement

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/01). If you have any concerns about the conduct of this research, please contact Dr Karl Pajo, Chair, Massey University Human Ethics Committee: Southern B, telephone 04 801 5799 x 6929, email humanethicsouthb@massey.ac.nz

APPENDIX D.

TEACHER INFORMATION SHEET



MASSEY UNIVERSITY
GRADUATE SCHOOL OF EDUCATION
COLLEGE OF EDUCATION
MASSEY UNIVERSITY
PRIVATE BAG 11-222
PALMERSTON NORTH

UNDERSTANDING THE NATURE AND FUNCTION OF EMPATHY IN SYNCHRONOUS MULTIMEDIA CONFERENCING

TEACHER INFORMATION SHEET

Introduction

My name is Wayne Duncan and I am the Deputy Principal at Northern Southland College. I am also a student enrolled for the Doctor of Education degree at Massey University. As part of the degree, I am conducting research into the nature and function of empathy within synchronous multimedia conferencing. The results of this research I hope will assist conferencing participants, programme developers and policy makers to improve learning and teaching in this online environment.

Project Description and Invitation

The project will be looking at empathy (*the ability to perceive the feelings and emotions of others*) within synchronous multimedia conferencing (*online communication tools that use real time; voice, video, and application sharing*). I am interested in understanding how participants using synchronous multimedia conferencing experience and understand empathy.

I would like to ask your participation in this research as I believe your involvement would be beneficial to the study.

Participant Identification and Recruitment

You have been identified as a potential participant for this research because of your teaching of, a 2010 Southland Interactive Learning Community (SILC) course using synchronous multimedia conferencing. You have also been identified because of your experience using this technology in previous year/s.

Project Procedures

If you decide to participate, you will be asked to be involved in an initial five minute online session to check the technology is working and for us to get to know each other. Following this there will be a 30-40 minute one on one online interview and then in a 30-40 minute focus group interview between another teacher, yourself, and I. These interviews will be about your experiences using synchronous multimedia conferencing.

Students will have separate focus group interviews. This information will be recorded, transcribed, (*typed out*) analysed, and tentative themes (*ideas*) about your understanding identified. These themes will be presented back to the teachers' focus group within a second 30-40 minute focus group interview and then later in a final 30-40 minute one on one interview. These interviews will occur over Term 2 and 3 of 2010, a five month period. During these interviews, you will be able to develop or construct your understandings of empathy as you discuss these themes in greater depth. The interviews and focus group interviews will then be analysed in combination to complete my report.

I will be based at Northern Southland College using the same conferencing software you use within your online class, so the interview will be very similar to how you interact in your online SILC course. The focus group interviews will also occur during the school day at a time suitable to the teachers involved.

I would also like to offer you a gift voucher of \$20 as compensation for your participation in the study.

Data Management

During the one to one interviews and focus group interviews the discussion will be audio recorded and transcribed (*typed out*). The interview transcriptions will be returned you for you to check the accuracy for the interviews. After the research is completed the audio recordings and transcriptions will be stored in an alarmed and lockable storage area for a period of three years. After this time, all material will be destroyed apart from the final thesis and my research diary. After the thesis is completed you will be sent a summary of the findings. A copy of the thesis will be held at the Massey University Library if you require future access.

The name of your school, your name, or any reference to identify you will not appear in the final document to protect your identity. Although all endeavours will be made to protect your identity, it is not possible to give an absolute guarantee of the confidentiality of information. I will, however, be taking all steps to ensure the security of the information.

Participant's Rights

You are under no obligation to accept this invitation to participate. If you decide to participate you have the right to:

- Decline to answer any particular question,
- Withdraw from the study within a month of signing the participation form,
- Ask any questions about the study at any time during participation,
- Provide information on the understanding that your name will not be used unless permission is given to the researcher,
- Be given access to a summary of the project findings when it is concluded,
- Ask for the recorder to be turned off at any time during the interview.

Thank you once again for making this research possible through your involvement. If you have any questions please do not hesitate to contact myself for my supervisor.

Yours sincerely

Wayne Duncan

Deputy Principal
Northern Southland College
Maria Street
LUMSDEN

Tel. 03 248 7121 cell [REDACTED] Email: wduncan@nsc.school.nz

Supervisor:

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APPENDIX E.
TEACHER CONSENT FORM



MASSEY UNIVERSITY

GRADUATE SCHOOL OF EDUCATION
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PALMERSTON NORTH

**UNDERSTANDING THE NATURE AND FUNCTION OF
EMPATHY IN SYNCHRONOUS MULTIMEDIA CONFERENCING**

TEACHER CONSENT FORM

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I acknowledge that my participation includes my contributions being sound recorded.

I wish/do not wish to have my recordings returned to me.

I agree to participate in this study under the conditions set out in the Information Sheet.

Signature:

Date:

.....

Full Name - printed

.....

APPENDIX F.

STUDENT INFORMATION SHEET



MASSEY UNIVERSITY

GRADUATE SCHOOL OF EDUCATION

COLLEGE OF EDUCATION

MASSEY UNIVERSITY

PRIVATE BAG 11-222

PALMERSTON NORTH

UNDERSTANDING THE NATURE AND FUNCTION OF EMPATHY IN SYNCHRONOUS MULTIMEDIA CONFERENCING

STUDENT INFORMATION SHEET

Introduction

My name is Wayne Duncan and I am the Deputy Principal at Northern Southland College. I am also a student enrolled for the Doctor of Education degree at Massey University. As part of the degree, I am conducting research into the nature and function of empathy within synchronous multimedia conferencing. The results of this research I hope will assist conferencing participants, programme developers and policy makers to improve learning and teaching in this online environment.

Project Description and Invitation

The project will be looking at empathy (*the ability to perceive the feelings and emotions of others*) within synchronous multimedia conferencing (*online communication tools that use real time; voice, video, and application sharing*). I am interested in understanding how participants using synchronous multimedia conferencing experience and understand empathy.

I would like to ask your participation in this research as I believe your involvement would be beneficial to the study.

Participant Identification and Recruitment

You have been identified as a potential participant for this research because of your enrolment in a 2010 Southland Interactive Learning Community (SILC) course using synchronous multimedia conferencing. Two online courses have been selected for this research because the teachers of these courses have had experience using this technology in previous year/s.

Project Procedures

If you decide to participate, you will be asked to be involved in an initial five minute online session to check the technology is working and for us to get to know each other.

Following this there will be a 30-40 minute one on one online interview and then a 30-40 minute focus group interview with only the students in your online class and I. These interviews will be about your experiences using synchronous multimedia conferencing. This information will be recorded, transcribed, (*typed out*) analysed, and tentative themes (*ideas*) about your understanding identified. These themes will be presented back to the same student focus group within a second 30-40 minute focus group interview and then later in a final 30-40 minute one on one interview. These interviews will occur over Term 2 and 3 of 2010, a five month period. During these interviews, you will be able to develop or construct your understandings of empathy as you discuss these themes in greater depth. The interviews and focus group interviews will then be analysed in combination to complete my report.

The one on one interviews I plan to hold within your study periods associated with your SILC course and the focus group interviews I plan to hold during your normal online class time. Therefore, you will not have to miss any classroom time from other subjects. I will be based at Northern Southland College using the same conferencing software you use within your online class, so the interview will be very similar to how you interact in your online SILC course.

I would also like to offer you a gift voucher of \$20 as compensation for your participation in the study.

Data Management

During the one to one interviews and focus group interviews the discussion will be audio recorded and transcribed (*typed out*). The interview transcriptions will be returned you for you to check the accuracy for the interviews. After the research is completed the audio recordings and transcriptions will be stored in an alarmed and lockable storage area for a period of three years. After this time, all material will be destroyed apart from the final thesis and my research diary. After the thesis is completed you will be sent a summary of the findings. A copy of the thesis will be held at the Massey University Library if you require future access.

The name of your school, your name, or any reference to identify you will not appear in the final document to protect your identity. Although all endeavours will be made to protect your identity, it is not possible to give an absolute guarantee of the confidentiality of information. I will, however, be taking all steps to ensure the security of the information.

Participant's Rights

You are under no obligation to accept this invitation to participate. If you decide to participate you have the right to:

- Decline to answer any particular question,
- Withdraw from the study within a month of signing the participation form,
- Ask any questions about the study at any time during participation,
- Provide information on the understanding that your name will not be used unless permission is given to the researcher,
- Be given access to a summary of the project findings when it is concluded,
- Ask for the recorder to be turned off at any time during the interview.

Thank you once again for making this research possible through your involvement. If you have any questions please do not hesitate to contact myself for my supervisor.

Yours sincerely

Wayne Duncan

Deputy Principal
Northern Southland College

Maria Street
LUMSDEN

Tel. 03 248 7121 cell [REDACTED] Email: wduncan@nsc.school.nz

Supervisor:

Dr Benjamin Kehrwald

Senior Lecturer School of Curriculum and Pedagogy

Massey University College of Education

Private Bag 11 222

PALMERSTON NORTH

Tel. 06 356 9099 Exn: 8714 Email: B.A.Kehrwald@massey.ac.nz

Massey University Human Ethics Committee Approval Statement

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/01). If you have any concerns about the conduct of this research, please contact Dr Karl Pajo, Chair, Massey University Human Ethics Committee: Southern B, telephone 04 801 5799 x 6929, email humanethicsouthb@massey.ac.nz

APPENDIX G.
STUDENT CONSENT FORM



MASSEY UNIVERSITY
GRADUATE SCHOOL OF EDUCATION
COLLEGE OF EDUCATION
MASSEY UNIVERSITY
PRIVATE BAG 11-222
PALMERSTON NORTH

**UNDERSTANDING THE NATURE AND FUNCTION OF
EMPATHY IN SYNCHRONOUS MULTIMEDIA CONFERENCING**

STUDENT CONSENT FORM

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I acknowledge that my participation includes my contributions being sound recorded.

I wish/do not wish to have my recordings returned to me.

I agree to participate in this study under the conditions set out in the Information Sheet.

Signature: **Date:**

Full Name - printed

If Applicable – Parent/Guardian

Signature: **Date:**

Full Name - printed

APPENDIX H.
FOCUS GROUP CONSENT FORM



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**UNDERSTANDING THE NATURE AND FUNCTION OF
EMPATHY IN SYNCHRONOUS MULTIMEDIA CONFERENCING**

FOCUS GROUP CONSENT FORM

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I agree not to disclose anything discussed in the Focus Group.

I agree to participate in this study under the conditions set out in the Information Sheet.

Signature: **Date:**

Full Name - printed
.....

If Applicable – Parent/Guardian

Signature: **Date:**

Full Name - printed
.....

APPENDIX I.

AUTHORITY FOR THE RELEASE OF TRANSCRIPTS



MASSEY UNIVERSITY

GRADUATE SCHOOL OF EDUCATION
COLLEGE OF EDUCATION
MASSEY UNIVERSITY
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PALMERSTON NORTH

**UNDERSTANDING THE NATURE AND FUNCTION OF
EMPATHY IN SYNCHRONOUS MULTIMEDIA CONFERENCING**

AUTHORITY FOR THE RELEASE OF TRANSCRIPTS

I confirm that I have had the opportunity to read and amend the transcript of the interview(s) conducted with me on (...Insert Date...).

I agree that the edited transcript and extracts from this may be used in reports and publications arising from the research.

Signature:

Date:

.....

Full Name - printed

.....

If Applicable – Parent/Guardian

Signature:

Date:

.....

Full Name - printed

.....

APPENDIX J.

PRE PHASE 1 – INITIAL SMC CONTACT SCHEDULE

Objective and aims

To meet with the research participants one on one for an initial five minute online synchronous multimedia conference. The aims of this contact are to:

1. Ensure the technology and connectivity works prior to the interview.
2. Discuss aspects of the interview in accordance with the Code of Ethical Conduct (see below), *and*
3. Begin to establish rapport with interview participants.

Initial contact

Hello and thank you for meeting me online to check the communication systems are working. I would like to spend just five minutes now demonstrating how we will use the system, outline a few points about the upcoming research, and introduce myself. (Outline how to use system)

Why they have been asked

You have been asked to share your experiences of online conferencing because you are part of an online course using synchronous multimedia conferencing. You have also been asked because .. (you are)/ (the teacher who is taking this course is)... experienced in using this conferencing tool.

The purpose of the interview

The reason for the interviews you will be involved with is to provide you an opportunity share your experiences of how you relate to others in these online classes and to develop your understanding about them so we can get a better understanding about empathy in these types of online classes.

The interview length and recording

Each interview will take about 30 to 40 minutes. I will be audio recording the interview so that I can make sure I get the information accurately. After I have transcribed the interview I will send you a copy to check.

Where and when the interviews will take place and reminder of their rights

The interviews will take place in the same online meeting room as we are now www.v6.breezeserver.co.nz/interview . Does the time we discussed earlier of ...(insert time).... for the first interview still suit?

I would also like to remind you:

You are able to have a support person with you.

You do not have to answer any questions you do not wish to.

You can ask for the recorder to be switched off at any time, or stop the interview at any time.

Do you have any questions?

(The remaining time is to be used to ask general questions about the participant and build rapport).

I look forward to meeting you then.

APPENDIX K.

PHASE 1A – ONE ON ONE INTERVIEW SCHEDULE

- **Introduce yourself.** *Hello, great to meet with you again.*
- **Outline the reasons you are making contact.** *Just to remind you the reason we are having this interview is so you can share your ideas on how you experience empathy in synchronous multimedia conferencing, the online environment we are in right now.*
- **Thank them again for their participation and outline to them if they feel uncomfortable they can discontinue at any time.** *I want to thank you again for being prepared to share your experiences. Your responses I am sure will provide valuable information for the study. Just a reminder, if you feel you would like to discontinue with the interview at any time please don't hesitate to interrupt me and we can stop.*
- **Outline to them again that their responses will be recorded.** *I just want to remind you that I will be recording our discussion. I will send you a copy of this transcription for you to check for accuracy when I have completed the interview.*
- **Obtain verbal consent to proceed** *Now that I have outlined these points are you still willing to participate in this interview?*
- **Check if they feel comfortable.** *Do you feel comfortable? – would you like to begin?*

Use of example/cue question protocol

Although example/cue questions are included, they are provided as an initial prompt or guide for leading the researcher and or the participants into the topics of interest. They may also be used to re-focus participants responses back onto the topic of interest if necessary. It is expected the researcher start with one or more of the example questions however the researcher may diverge from these questions or take another questioning direction to obtain interesting or more fruitful responses in relation to the topic of interest.

Interview Topics and Example/Cue Questions

Topics of Interest

Experiencing encouragement

Example/Cue Questions

Have you ever been encouraged by others when you are online?

How did you know it was encouragement?

How did you sense this encouragement?

How did it feel?

Experiencing helping behaviours

Example/Cue Questions

Has anyone helped you when you are online?

What did they do or say?

How did you know/sense they were trying to help/encourage you?

Experiencing compassion

Example/Cue Questions

Has anyone showed you compassion/caring when you are online?

What did they do or say to make you think they were feeling concerned or understanding toward you?

The spontaneous spread of emotion

Example/Cue Questions

Have you ever had a laugh or joke that has gone around the whole group?

How did it happen?

What was it like?

Have you ever felt fear or anger go around the group?

Effect of technical problems stress and workload

Example/Cue Questions

When there are technical problems like the audio is not good, how does this affect your ability to sense what others are thinking or their attitude?

Have you found any difference in your ability to sense others when you are really busy, or a bit stressed?

A supportive environment

Example/Cue Questions

Has anyone helped you when you are online?

How do you know you feel supported?

In what ways do you sense this support?

A strengthening bond

Example/Cue Questions

Have you been feeling closer to the other students as you have had more online sessions?

Have you been feeling closer to the teacher as you have had more online sessions?

What events or experiences have made you feel increasing closeness?

An ability to predict the behaviour or attitude of others

Example/Cue Questions

Can you sense or predict the attitude of others when you are online?

Can you tell if others are angry, happy, or sad? How?

Can you predict when another person is going to react positively or negatively?

How can you predict their reaction?

A sense of belonging

Example/Cue Questions

Has the online sessions made you feel part of the group?

What is happening online that makes you feel you belong to the group?

Cues that help in language modulation

Example/Cue Questions

What happens online to help you know when to talk and when not to talk during an online conversation?

Ask completely free response question

Are there any other comments you would like to make that I have not covered about interpreting others online or empathy?

Thank them for their contribution

Well thank you very much again for your contribution to this project. Have you any questions before we finish?

Tell the person what will happen next.

I will now take the recording of this interview and transcribe it. I will then post you a copy for you to make any changes if you feel it is not accurate. If you wish to make changes just write in pen on the copy I send to you. Please post it back to me in the pre-paid envelope even if you make no changes. Please also sign the release of transcript form.

Finally, if I find an example or experience you have shared with me in this interview that may be helpful to stimulate discussion in the focus group interview, can I share that or I call upon you to share that experience yourself?

After I have completed the individual interviews I will contact you to ask your permission to participate in the group interview and find out times suitable for the interview. This should be approximately in the last three weeks of this term.

Thank you again.

APPENDIX L.

PHASE 1B – FOCUS GROUP INTERVIEW SCHEDULE

Tasks prior to focus group interview:

- Complete all one on one interviews along with transcription.
- Have all transcriptions checked by participants and returned.
- Arrange a time suitable to those in agreement of participation for the focus group interview.

Analysis of the one on one interviews was used to develop the example/cue questions within this focus group interview schedule.

- **Introduce yourself.** *Hello again and welcome to this group interview.*
- **Outline the reasons you are making contact.** *The reason for this interview is to follow up on the ideas that you shared with me in the one on one interviews and discuss these in a group situation. It is a chance for you to share and discuss together what you and others understand about empathy.*
- **Thank them again for their participation and outline to them if they feel uncomfortable they can discontinue at any time.** *I want to thank you again for being prepared to be part of this focus group. Your responses I am sure will provide valuable information for the study. Just a reminder, if you feel you would like to discontinue with the interview at any time please don't hesitate to interrupt me and you can leave the conference either individually or as a group.*
- **Outline to them again that their responses will be recorded.** *I will be recording our group discussion. I will send you all a typed copy of the discussion for you to check for accuracy in the same way I sent you the one on one transcript.*
- **Check if they feel comfortable.** *Do you all feel comfortable? – would you like to begin?*

Use of example statement protocol

The initial example statements presented are presented in this schedule. They are used as an initial prompt or guide for leading the researcher and the participants into the topics of interest. They may also be used to re-focus participants responses back onto the topic of interest if necessary. It is expected the researcher start with one or more of the example questions however the researcher may diverge from these questions or take another questioning direction to obtain interesting or fruitful responses in relation to the topic of interest. (These responses were presented online at the same time)

Topics of Interest

Experiencing encouragement

Example/Cue Questions

Have you been encouraged by others when you've been online?

Some of the experiences that came back were:

- 1. They experienced comments like "well done" "keep it up".*
- 2. Those comments were mainly from the teacher.*
- 3. There was a huge amount of complimentary supportive comments.*
- 4. The main source of the encouragement was through the voice and when asked about the voice for the participants it was all about the tone of the voice.*
- 5. A number of the participants felt that they visualised facial expressions and personalities from that encouragement. A happy face, a pleasant person from a lot of reassuring tones.*

What do you think of those experiences and any other things you may feel?

Experiencing helping behaviours

Example/Cue Questions

This question asked if anyone had helped you when you are online.

Some of the experiences were that people had were:

- 1. Some people felt they experienced help to get online, they were helped by being offered websites later on, and given extra resources and additional opportunities.*
- 2. It was mainly through what was said and there was some helping that happened after the online interview.*

Do you agree with all of those or do you have another perspective?

Experiencing compassion

Example/Cue Questions

This question was asking if you believed anyone had shown you compassion or caring when you have been online.

Some of the experiences were:

1. *These were not only from the teacher.*
2. *Through people asking them how they are getting on and courses like that.*
3. *Understanding when something is going wrong.*
4. *A couple of times students were not feeling too well and the teacher had asked if they were ok.*
5. *There was a sense that the teacher was concerned how they were getting on.*

Does anyone want to add to those?

The spontaneous spread of emotion

Example/Cue Questions

The question was if a laugh or joke has gone around the group.

Some of the experiences that came forward here were:

1. *Yes it can be sensed going around when it happens.*
2. *It depends if there is a lot of focus on the task.*
3. *If you were very much focused on the task you tended not to react too much to the joking.*
4. *It wasn't anywhere as intense as the classroom and a reason for that from one student was that there was less feeding off that from the students just beside you.*

What do you think of those comments?

Effect of technical problems stress and workload

Example/Cue Questions

With this question, when there are technical problems I asked the question if it affected the ability to sense others.

Some of the experiences that came out there were:

1. *It makes it hard to interpret people accurately.*
2. *You may get things wrong because you don't pick up everything.*
3. *There is frustration that takes up a bit of your energy.*
4. *You tend to focus on what was said rather than how it was said.*

Your opinion on those (name)

A supportive environment

Example/Cue Questions

This question was around the area of, do you feel supported when you are online?

Some of the experiences that came back from the one on one interview were;

- 1. The support is more individualised.*
- 2. There might be a specific offer to help you as an individual and may include a text or an email, especially or mainly from the teacher.*
- 3. The experience wasn't from just what the teacher said it was also the things the teacher did for them.*
- 4. The way the group jollied students along. The comments of support from other students such as "oh yeah yeah"*

What do you think of those comments?

A strengthening bond

Example/Cue Questions

From the beginning of the year do you feel you are getting closer to the other members of the group?

Some of the experiences were.

- 1. Yes definitely, most felt there had been a change but most felt the change had been with the teacher.*
- 2. Mainly because the teacher is doing most of the interactions also the more interaction the more the bond increased.*

What do you think?

An ability to predict the behaviour or attitude of others

Example/Cue Questions

The question was do you think therefore you can sense or predict the attitude of others when you are online?

Some of the experiences here were:

- 1. It depends on how much they portray themselves.*
- 2. It was mainly through the voice and tone of voice and depended on how much they interacted with them.*
- 3. Another thing that came out was that they could hide easier?*

Any more points?

A sense of belonging

Example/Cue Questions

Have the online situations made you feel part of a group?

Some of the experiences were that:

- 1. Yes definitely starting to feel part of a group.*
- 2. The more social interaction the closer the bond was becoming*
- 3. The strongest bond at the moment is especially with the teacher.*
- 4. It takes time.*
- 5. Increase in a feeling of a group was evident.*
- 6. Different names for the group like a team, club, class, there were all sorts of ways to describe the group.*

Do you agree with those comments?

Cues that help in language modulation

Example/Cue Questions

What happens online that helps you know when you can talk, or not talk, or communicate during an online session?

The two experiences that came out were;

- 1. The two methods the teacher or class was able to use was pauses and the teacher asking you specifically.*
- 2. Other than those there were no other cues that you could use.*

Do you agree with that?

Ask a completely free response question.

Are there any other comments that you would like to make that I have not covered about interpreting others online or about empathy? Sensing others and what they think and what they feel.

Thank them for their contribution

Well thank you very much again for your contribution to this project. Have you any questions before we finish?

Tell the person what will happen next

I will now take the recording of this interview and transcribe it. I will then post you a copy for you to make any changes if you feel it is not accurate. If you wish to make changes just write in pen on the copy I send to you. Please post it back to me in the pre-paid envelope even if you make no changes. Please also sign the release of transcript form.

I will then analyse the data from the one on one interviews and focus group interview and get back to you to ask your permission and organise a time to meet again as a group. This should be in the first three or four weeks of Term 3.

Thank you again.

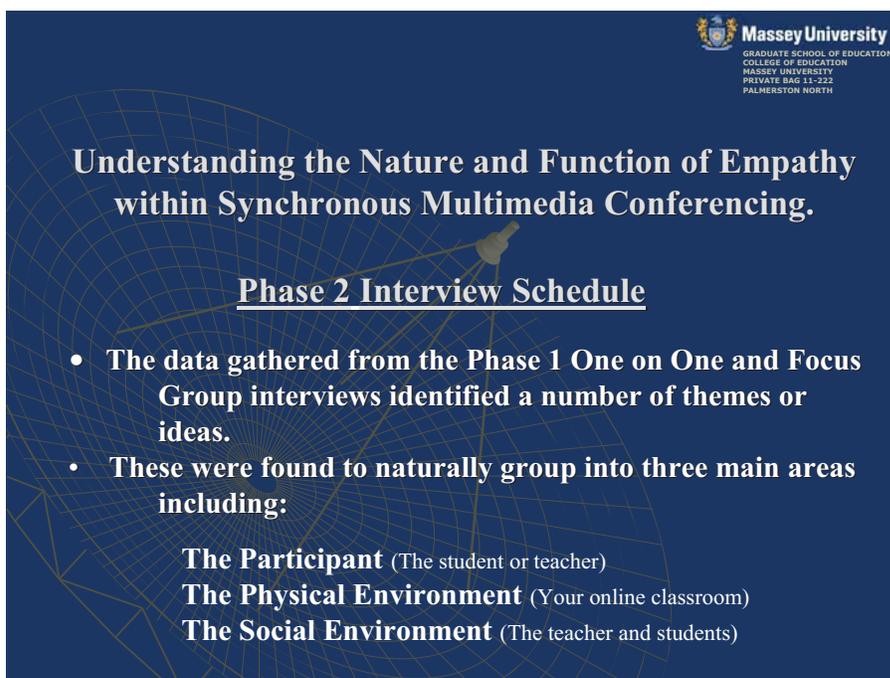
APPENDIX M.

PHASE 2A – FOCUS GROUP INTERVIEW SCHEDULE

NB. Prior to the commencement of Phase 2 focus group interview participants should be asked for their oral consent to participate in Phase 2. Also participant rights should be outlined before consent is obtained to participate in the interview.

The Phase 2a Focus group interview schedule was presented to participants online orally and visually. The schedule was presented visually through the multimedia share capability of Adobe Connect. The text below each PowerPoint slide is the accompanying oral presentation and together they formed the content of the interview schedule.

Visual Presentation 1



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PALMERSTON NORTH

Understanding the Nature and Function of Empathy within Synchronous Multimedia Conferencing.

Phase 2 Interview Schedule

- The data gathered from the Phase 1 One on One and Focus Group interviews identified a number of themes or ideas.
- These were found to naturally group into three main areas including:
 - The Participant** (The student or teacher)
 - The Physical Environment** (Your online classroom)
 - The Social Environment** (The teacher and students)

Accompanying oral presentation

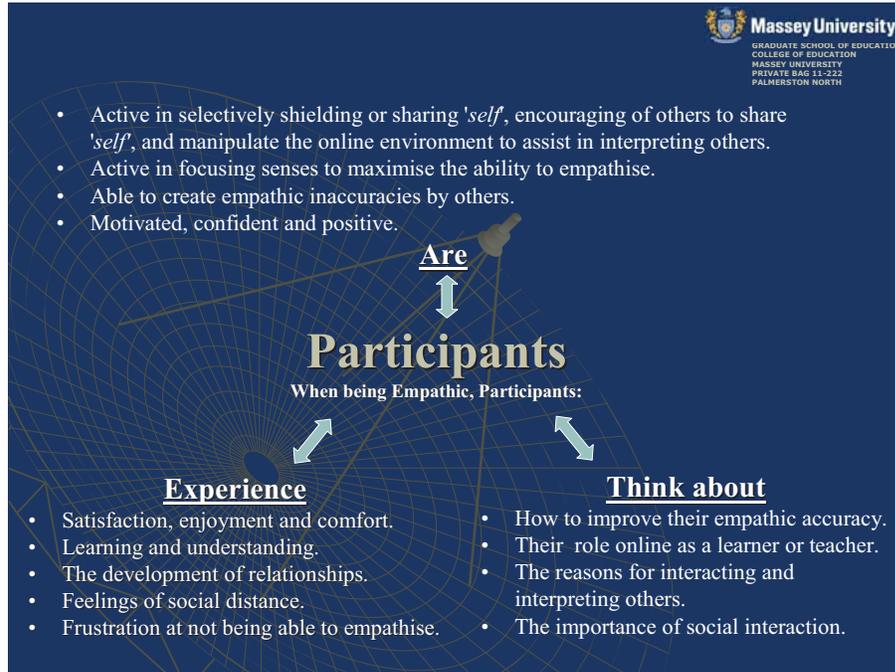
The data gathered from the Phase 1- One On One and Focus Group interviews identified a number of themes or ideas. These were found to naturally group into three main areas. These areas included:

The Participant (You or the teacher)

The Physical Environment, (This synchronous multimedia conferencing)

The Social Environment (The relationships between participants).

Visual Presentation 2



Accompanying oral presentation

Topics of Interest

The participants

(Outlined from online PowerPoint within Adobe Connect)

The themes that emerged from the participants grouped into three main areas.

Those students who were able to empathise:

Are

1. *Active in selectively shielding or sharing themselves, encouraging of others to share themselves, and manipulate the online environment to assist in interpreting others.*
2. *Active in focusing their senses to maximise their ability to empathise.*
3. *Able to create empathic inaccuracies in others.*
4. *Motivated, confident and positive.*

Your comments on those?

The next aspect was that the

Participants experienced (outlined from online PowerPoint)

1. *Satisfaction enjoyment and comfort.*
2. *Learning and understanding*
3. *Developed a sense of relationship with other participants*
4. *Had feelings of social distance mainly due to technical problems.*
5. *Had frustration at not being able to interpret others.*

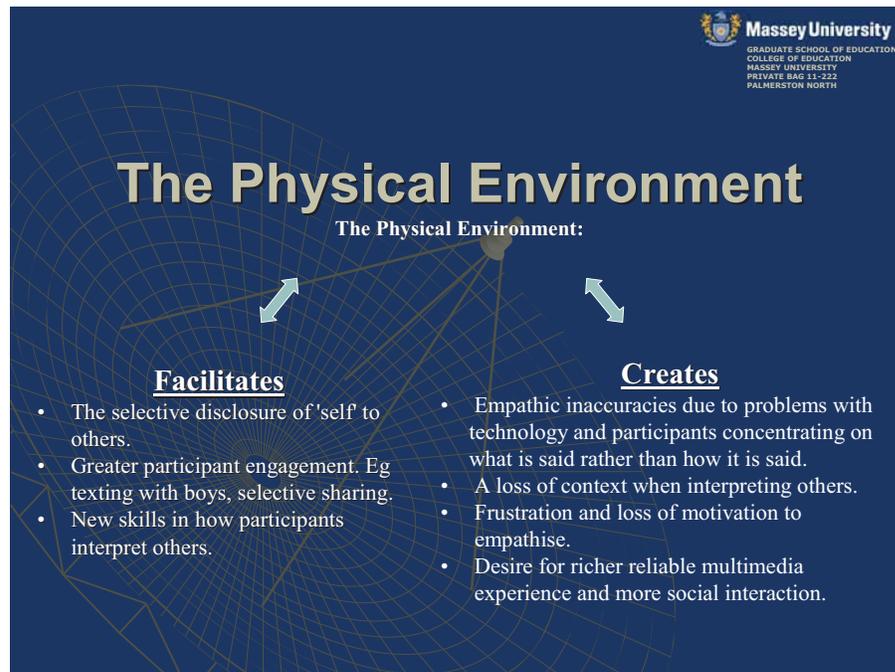
We will go to you first of all, what do you think of those?

Participants thought about. (Outlined from online PowerPoint)

1. *How to improve the empathic accuracy.*
2. *Your role online as a learner or teacher.*
3. *The reasons for interacting and interpreting others.*
4. *The importance of social interaction.*

We will go to you first of all what are your views of those?

Visual Presentation 3



Accompanying oral presentation

Topics of Interest

The physical environment (outlined from online PowerPoint)

The synchronous multimedia conferencing environment.

Facilitates

1. *The selective disclosure of 'self' to others.*
2. *Greater participant engagement. (For example the boy's texting and how that encouraged them to participate more).*
3. *New skills in how participants interpret others (better listening skills).*

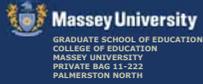
I will go to you first of all, what do you think about those generally?

Creates

1. *Empathic inaccuracies. Mainly due to technical problems.*
2. *A loss of context when interpreting others.*
3. *Creates a frustration and loss of motivation to empathise.*
4. *A desire for a richer more reliable multimedia experience and more social interaction face to face.*

Going to you first..... what do you think of those?

Visual Presentation 4



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The Social Environment

Within the Social Environment:

- Participants believe increasing the amount of social interaction improves empathic accuracy.
- Those most interactive participants are the easiest to interpret.
- Teacher/student relationship rather than student/student is more empathic.
- There is a decrease in formality and increase in personalisation.
- Sharing of self encourages others to share themselves.
- There are many normal social structures that exist online which are similar to face to face classrooms.

Topics of Interest

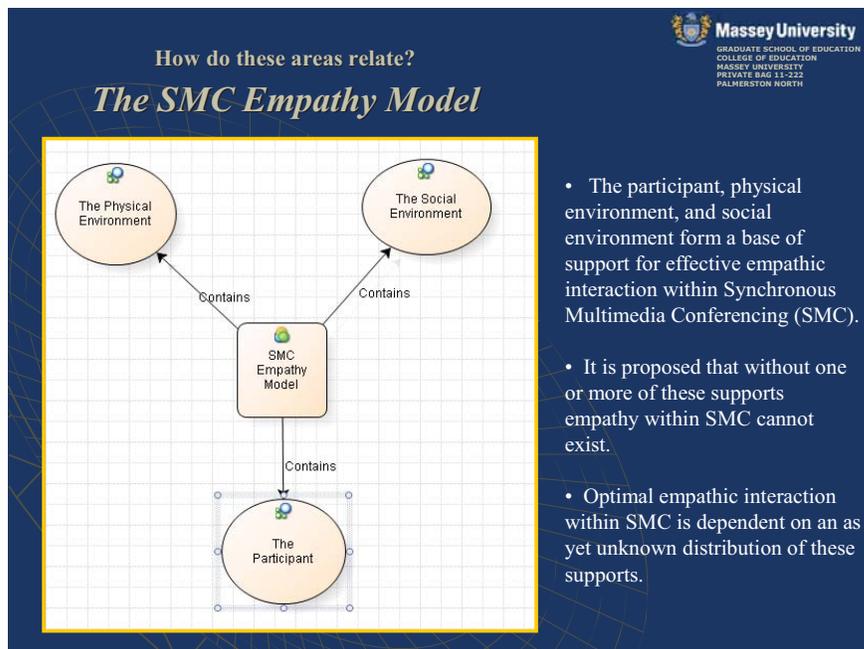
The social environment

The Social Environment is about the group as a whole. Within the social environment the participants:

1. Believed that increasing the amount of social interaction improves the empathic accuracy. (The more social interaction and the more online time the more easily you are going to be able to pick up people).
2. The most interactive participants are the easiest to interpret.
3. The teacher student relationship rather than the student/ student relationship is more empathic.
4. There is a decrease in formality in the online classroom compared to face to face classroom.
5. There is an increase in personalisation.
6. There are many social structures that are similar to face to face structures.

Generally those points there

Visual Presentation 5



Topics of Interest

The empathy model

Discuss how the model to be presented was developed through the use of analysing all the information from interviews looking for the type of link between the three components.

The participant, the physical environment, and the social environment form a base of support for effective empathic interaction. What that means is that to be able to empathise, the physical environment or technology has got to work, if it is not then

the tripod falls over. If socially you are not interacting with each other empathy doesn't occur as well. No matter how good the technology is if you are unable to socially interact, empathy will also not work. Lastly if the participant is not interacting or interested in interacting then empathy also doesn't work.

If I go to you.. (name) .first of all, do you think a tripod like that is quite a good model to show supporting your ability to empathise? Do you think that model works?

Ask a completely free response question

Are there any other comments that you would like to make that I have not covered about interpreting others online or about empathy? Sensing others and what they think and what they feel.

Thank them for their contribution

Well thank you very much again for your contribution to this project. Have you any questions before we finish?

Tell the interviewees what will happen next.

I will now take the recording of this interview and transcribe it. I will then post you a copy for you to make any changes if you feel it is not accurate. If you wish to make changes just write in pen on the copy I send to you. Please post it back to me in the pre-paid envelope even if you make no changes. Please also sign the release of transcript form. I will then analyse the data from the one on one interviews and focus group interview and get back to you to ask your permission and organise a time to meet again as a group.

Thank you again.

APPENDIX N.

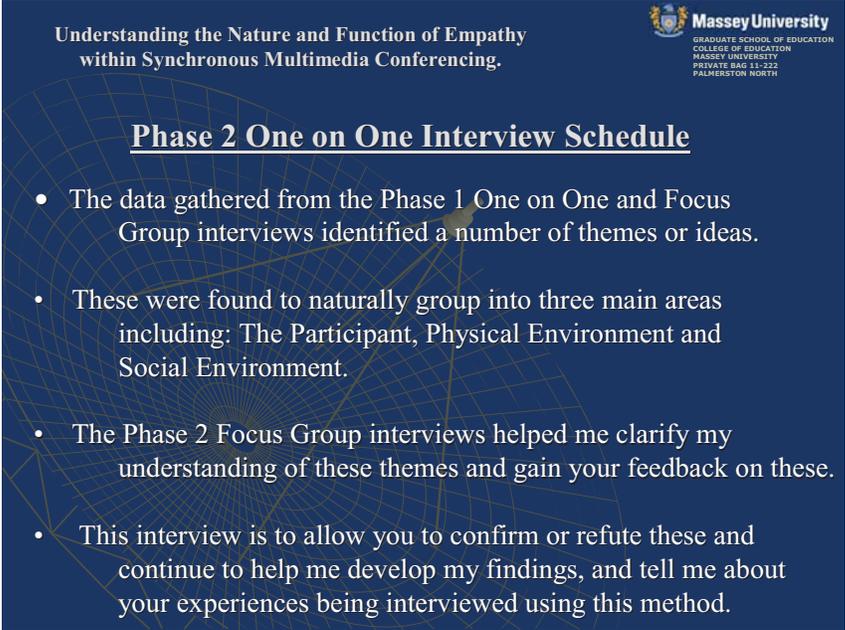
PHASE 2B – PARTICIPANT VALIDATION INTERVIEW

[NB. If participants have already been asked for their consent to participate in Phase 2 within the focus group interview oral consent is not requested again prior to the Phase 2 one on one interview. If not, oral consent should be obtained for participation in Phase 2].

[Information about the interview being taped and participant rights during the one on one interview should be outlined prior to asking the participant if they still wish to continue with the interview].

The Phase 2b Focus group interview schedule was presented to participants online orally and visually. The schedule was presented visually through the multimedia share capability of Adobe Connect. The text below each PowerPoint slide is the accompanying oral presentation and together they formed the interview schedule.

Visual Presentation 1



Understanding the Nature and Function of Empathy
within Synchronous Multimedia Conferencing.

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Phase 2 One on One Interview Schedule

- The data gathered from the Phase 1 One on One and Focus Group interviews identified a number of themes or ideas.
- These were found to naturally group into three main areas including: The Participant, Physical Environment and Social Environment.
- The Phase 2 Focus Group interviews helped me clarify my understanding of these themes and gain your feedback on these.
- This interview is to allow you to confirm or refute these and continue to help me develop my findings, and tell me about your experiences being interviewed using this method.

The data gathered from the Phase 1- One On One and Focus Group interviews identified a number of themes or ideas. These were found to naturally group into three main areas. These areas included:

The Participant (You or the teacher)

The Physical Environment, (Which is what we are using now)

The Social Environment (Which is the relationship which has built between you).

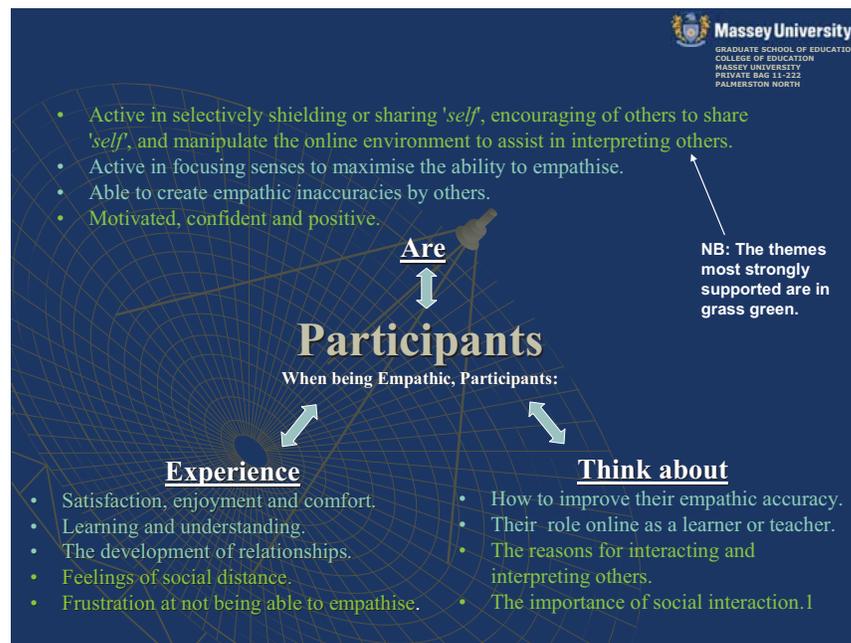
The Phase 2 focus group interviews helped me clarify my understandings of the themes and gained your feedback on these.

This interview is to allow you to confirm or refute these understandings and allow you to continue to develop my findings and also allow you to tell me about your experiences being interviewed using this method.

Topics of Interest

The participant

Visual Presentation 2



(Outlined from online PowerPoint within Adobe Connect)

[Each of the themes were coloured to indicate which were supported through the focus group interviews and which of those were of most significance to the participants. Two colours were used 'grass' green and 'blue' green. Any themes

or ideas that were coded in a green were supported by participants in the focus group. If the theme was **'grass' green** it was of greater importance to the majority of participants].

The themes that emerged from the participants grouped into three main areas. Those students who were able to empathise:

Are

1. *Active in selectively shielding or sharing themselves, encouraging of others to share themselves, and manipulate the online environment to assist in interpreting others.*
2. *Active in focusing their senses to maximise their ability to empathise.*
3. *Able to create empathic inaccuracies in others.*
4. *Motivated, confident and positive.*

Do you generally agree with those four?

Which ones of those four stand out for you?

Let's go to experience.

Participants experienced (outlined from online PowerPoint)

1. *Satisfaction enjoyment and comfort.*
2. *Learning and Understanding.*
3. *Development of a sense of relationship with other participants.*
4. *Had feelings of a social distance (especially when technical problems)*
5. *A frustration at not being able to interpret others.*

Generally those five there, do you agree with them all?

Which of those five there stands out for you?

These are the things the participants were thinking about.

Participants thought about. (outlined from online PowerPoint)

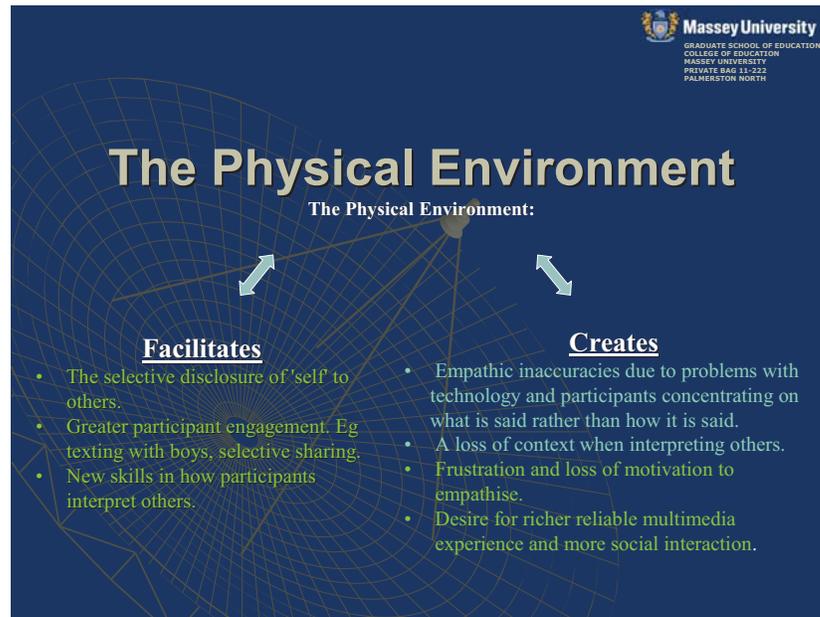
1. *How to improve their empathic accuracy.*
2. *Their role online as a learner or teacher.*
3. *The reasons for interacting and interpreting others.*
4. *The importance of social interaction.*

Generally do you agree with those four?

Which ones stand out for you?

Topics of Interest

The physical environment



This is related to the Adobe Connect synchronous multimedia conferencing environment.

Facilitates

- 1. The selective disclosure of 'self' to others. (when meeting face to face they see and get everything whereas with this environment you can selectively disclose yourself)*
- 2. Greater participant engagement. (For example the boy's texting and how that encouraged them to participate more).*
- 3. New skills in how others interpret others (better listening skills).*

Those three, do you generally agree with them?

Which of those do you think are of most importance to you?

Creates

- 1. Empathic inaccuracies. (Mainly due to technical problems and participants concentrating on what is said rather than how it is said)*
- 2. A loss of context when interpreting others. You are hearing what is happening in their world but you are not in their world*
- 3. Creates a frustration and loss of motivation to empathise.*
- 4. A desire for a richer more reliable multimedia experience and more social interaction face to face.*

Those four there, do you generally agree with them?

Which ones do you most strongly feel about?

Topics of Interest

The social environment



The Social Environment

Within the Social Environment:

- Participants believe increasing the amount of social interaction improves empathic accuracy.
- Those most interactive participants are the easiest to interpret.
- **Teacher/student relationship rather than student/student is more empathic.**
- There is a decrease in formality and increase in personalisation.
- Sharing of self encourages others to share themselves.
- **There are many normal social structures that exist online which are similar to face to face classrooms.**

Reference was made to the red point at the bottom and how it was red because there was not agreement with the statement as it was. It was also outlined that the top five points would be dealt with first and the last one separately.

The Social Environment is about the relationship that is built within the group over time. Within the social environment the participants:

- 1. Believed that increasing the amount of social interaction improves the empathic accuracy.*
- 2. The most interactive participants are the easiest to interpret.*
- 3. The teacher student relationship rather than the student/ student relationship is more empathic.*
- 4. There is a decrease in formality in the online classroom compared to face to face classroom.*
- 5. There is an increase in personalisation.*
- 6. There are many social structures that are similar to face to face structures.*

Do you generally agree to those first five?

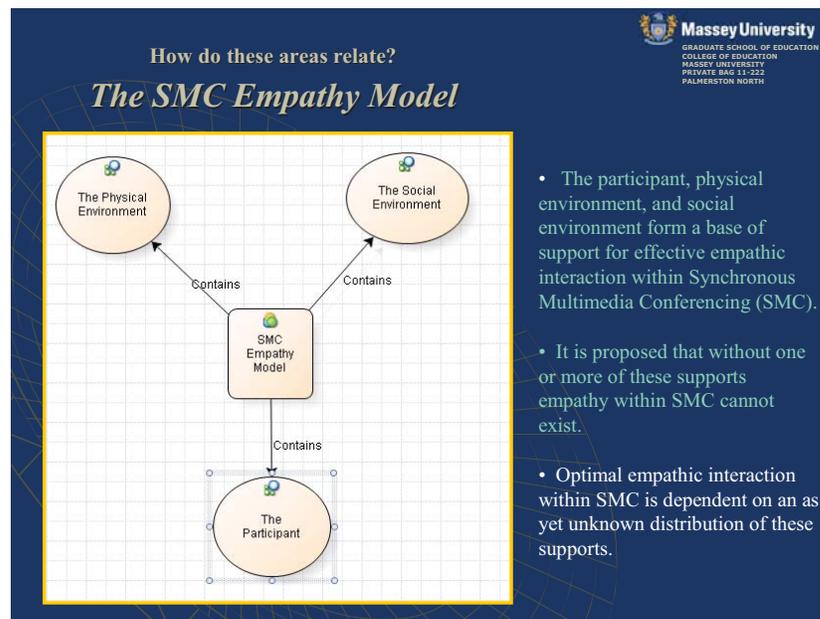
Which one of those first five is of most significance to you?

Now the last one. I had put down there are 'many' normal social structures which are similar to a face to face interaction. What the focus groups wanted was it

changed from there are 'many' to there are 'some', or 'a few'. Do you also agree that the statement should be changed to 'a few' or 'some' or do you think there should be many?

Topics of Interest

The empathy model



[At this point the model was shown and there was general discussion about how the model was generally supported by the focus groups and a reminder of how it was structured. The tripod structure was demonstrated using the webcam and three fingers with empathy being at the top].



[This is the model that was shown within the online presentation]

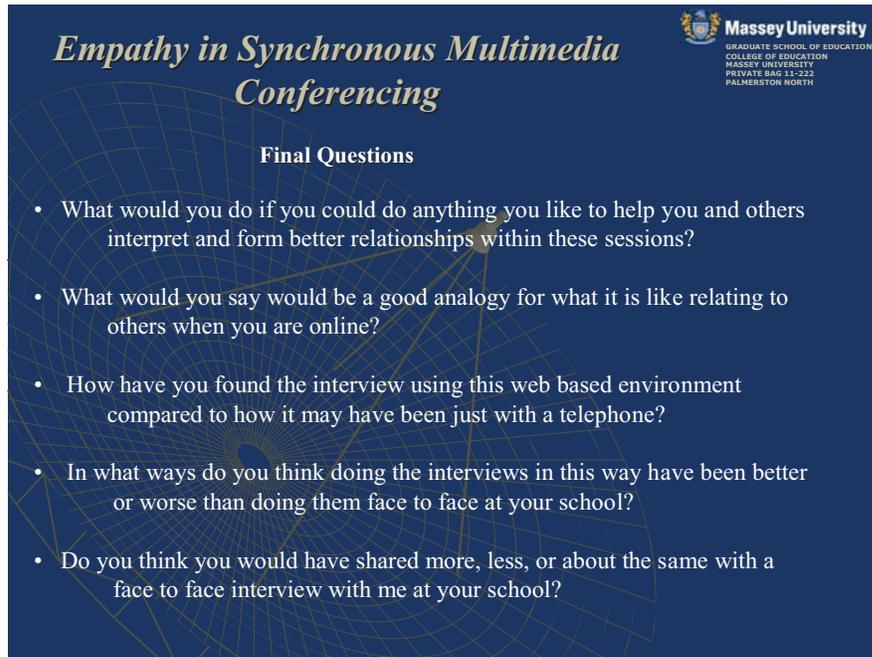
Do you think there is anything that doesn't fit into those three legs?

Do you agree with the model that has been presented?

Instructions were given on how to draw with the tools within the whiteboard. So that the interviewee could come up with their own model.

[There were general instructions requesting that the interviewee draw their own model of empathy and how they felt these components related. -The models were copied as a .jpg file and pasted into the interview transcript].

Additional Questions



Empathy in Synchronous Multimedia Conferencing

Final Questions

- What would you do if you could do anything you like to help you and others interpret and form better relationships within these sessions?
- What would you say would be a good analogy for what it is like relating to others when you are online?
- How have you found the interview using this web based environment compared to how it may have been just with a telephone?
- In what ways do you think doing the interviews in this way have been better or worse than doing them face to face at your school?
- Do you think you would have shared more, less, or about the same with a face to face interview with me at your school?

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1. *What would you do if you could do anything you like to help you and the other participants to interpret and form better relationships within these sessions?*
2. *What would you say would be a good analogy or metaphor for what it is like when you are relating to others online? For example when interviewing teachers about beginning teaching one teacher said it was like being in a rowboat and being pushed out into the sea and the crashing waves are the classes. What picture would it be for you within these online classes?*
3. *How have you found this interview using this web environment with the video and reading the questions compared to how it may have been just with a telephone?*
4. *In what ways do you think doing the interviews in this way has been better or worse than doing interviews face to face at your school?*
5. *Do you think you would have shared more being online than with a face to face at your school?*

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Empathy in Synchronous Multimedia Conferencing

- How would you rank your motivation to get to know the other students online?
High 5 4 3 2 1 Low
- How would you rank your level of participation when you are online?
High 5 4 3 2 1 Low
- Do you feel you have developed your understanding of empathy online since we started the research a few months ago? How?
- Can you see in the repeated interviews we have had, how your feedback has been used to develop our understanding together? How?
- Is there anything else you would like to add to the research?

Thank you again for your contribution.

1. *How would you rank your motivation to get to know the other students online between 1 and 5?*
2. *How would you rank your level of participation when you are online 1-5?*
3. *Do you feel you have developed your understanding of empathy or how you pick up the emotions of others online since we have started the research a few months ago?*
4. *Can you see within the repeated interviews we have had, how your feedback has been used to develop our understanding together?*
5. *Is there anything else you would like to add to the research?*

Thank them for their contribution

Well thank you very much again for your contribution to this project. Have you any questions before we finish?

Tell the person what will happen next.

I will now take the recording of this interview and transcribe it. I will then post you a copy for you to make any changes if you feel it is not accurate. If you wish to make changes just write in pen on the copy I send to you. Please post it back to me in the pre-

paid envelope even if you make no changes. Please also sign the release of transcript form.

As outlined in the information letter I would also like to send you a gift voucher for your contribution to the research. I will post this to you.

Thank you again.

APPENDIX O.

SCHOOL THANK YOU LETTER



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GRADUATE SCHOOL OF EDUCATION
COLLEGE OF EDUCATION
MASSEY UNIVERSITY
PRIVATE BAG 11-222
PALMERSTON NORTH

(Insert Date)
(Insert Name) Principal
(Insert School & Address)

Dear

I would like to express my sincere gratitude for the opportunity to conduct research with, a student at your school as part of my doctoral thesis. I would especially like to thank for (his/her) positive contribution to the research process over the last six months. I would also like to thankfor their support coordinating the interviews.

As outlined in the information letter, I would like to offer your school a \$40 gift voucher (enclosed) as compensation for the use of your facilities and support of your staff in enabling this research to be undertaken.

The research phase of this thesis has been extremely successful and next year I plan to complete the deeper analysis of the data leading to the submission of my thesis at the end of 2011. I hope to be able to forward to your school a summary of the research outcomes during 2012.

Thank you once again for your school's support of this study.

Yours sincerely

Wayne Duncan
Deputy Principal
Northern Southland College
Maria Street LUMSDEN
Tel. 03 248 7121 cell [REDACTED] Email: wduncan@nsc.school.nz

Supervisor: Dr Benjamin Kehrwald
Senior Lecturer, School of Curriculum and Pedagogy
Massey University College of Education
Private Bag 11 222 PALMERSTON NORTH
Tel. 06 356 9099 Exn: 8714 Email: B.A.Kehrwald@massey.ac.nz

Massey University Human Ethics Committee Approval Statement

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 10/01). If you have any concerns about the conduct of this research, please contact Dr Karl Pajo, Chair, Massey University Human Ethics Committee: Southern B, telephone 04 801 5799 x 6929, email humanethicsouthb@massey.ac.nz

**APPENDIX P.
PARTICIPANT THANK YOU LETTER**



MASSEY UNIVERSITY
GRADUATE SCHOOL OF EDUCATION
COLLEGE OF EDUCATION
MASSEY UNIVERSITY
PRIVATE BAG 11-222
PALMERSTON NORTH

(Insert Date)
(Insert Participant Name)
(Insert School and Address)

Dear

I would like to express my sincere gratitude for the opportunity to conduct research with you as part of my doctoral thesis. I would especially like to thank you for your positive contribution to the research over the last six months.

As outlined in the information letter, I would like to offer you a \$20 gift voucher (enclosed) as compensation for the time you committed to this research.

The research phase of this thesis has been extremely successful and next year I plan to complete the deeper analysis of the data leading to the submission of my thesis at the end of 2011. I hope to be able to forward to your school a summary of the research outcomes during 2012.

Thank you once again for your support of this study.

Yours sincerely

Wayne Duncan

Deputy Principal
Northern Southland College
Maria Street LUMSDEN
Tel. 03 248 7121 cell [REDACTED] Email: wduncan@nsc.school.nz

Supervisor: Dr Benjamin Kehrwald
Senior Lecturer, School of Curriculum and Pedagogy
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APPENDIX Q.
TRANSCRIPT VOLUMES (WORD COUNT)

Research Phase	Interview Method & Respondent Group	Word counts for participant responses. <u>Teacher</u>	Total & Average Response
Phase 1a	One on One Interviews Respondent Group 1	1663, 1673, 2021, <u>2120</u> , 2345, 2360, 2697	Total 14 894 Average 2126
Phase 1a	One on One Interviews Respondent Group 2	1891, 2082, 2106, 2353, 2505, 3071, 3601, <u>4054</u> ,	Total 21 663 Average 2708
Phase 1b	Focus Group Interview Respondent Group1& 2	RG1- Students Only 3106 RG2- Students Only 3238 Teachers Only <u>4713</u>	Total 11 057
Phase 2a	Focus Group Interview Respondent Group1& 2	RG1- Students Only 2188 2RG- Students Only 2354 Teachers Only <u>3441</u>	Total 7 983
Phase 2b	One on One Respondent Validation Interviews Respondent Group 1	2232, 2570, 2782, <u>2987</u> , 3126, 3565, 4940	Total 22 202 Average 3171
Phase 2b	One on One Respondent Validation Interviews Respondent Group 2	2366, 2398, 2728, 2852, 3039, 3058, 3130, <u>4007</u>	Total 23 578 Average 2947
	Total Participants 15	Total Transcripts 36	Total Words 101 377

APPENDIX R.

NVIVO® DATA CODING EXEMPLARS

The screenshot shows the NVivo software interface. On the left, a tree view shows 'Sources' with folders for 'Internals' and 'Externals'. The main window displays a list of sources under '1 NZ History Interview 1'.

Name	Nod	Refere	Created On	Crea	Modified On	Modified By
1 NZH Pa	41	78	23/06/2010 1:04	WD	27/02/2011 10:55 a.	WD
1 NZH CS	62	140	23/06/2010 1:04	WD	27/02/2011 11:01 a.	WD
1 NZH Ch	57	116	23/06/2010 1:04	WD	27/06/2010 2:58 p.	WD
1 NZH Di	56	141	23/06/2010 1:04	WD	27/06/2010 4:27 p.	WD
1 NZH Ell	55	132	23/06/2010 1:04	WD	4/07/2010 5:31 p.m.	WD
1 NZH Ma	38	86	23/06/2010 1:04	WD	4/07/2010 6:01 p.m.	WD
1 NZH Ty	52	107	4/07/2010 8:58 a	WD	4/07/2010 8:25 p.m.	WD

Below the list, a transcript snippet is shown with auto-coded nodes:

combination?
I would say in how it is said and written. I can p...
things. You can tell if they are really genuine or

How do you do that?
How do I do that? *Yeah* I think just through exp...
people and picking up what's true and what's fa...

What sort of cues do you do use to tell you what
Cues?

Hints
Sarcasm is a big one. You can definitely tell wh...
seem interested, like their voices turn off. That's...
sound interested anymore.

On the right, a vertical bar shows coding density for various nodes, including '1 Experiencing Compassion', '6 A Supportive Environment', '5 Effect of Technical Problems Stress and Workload', '7 A Strengthening Bond', and '8 An ability to predict the behaviour'.

Examples of auto coding for Phase 1a interview transcripts

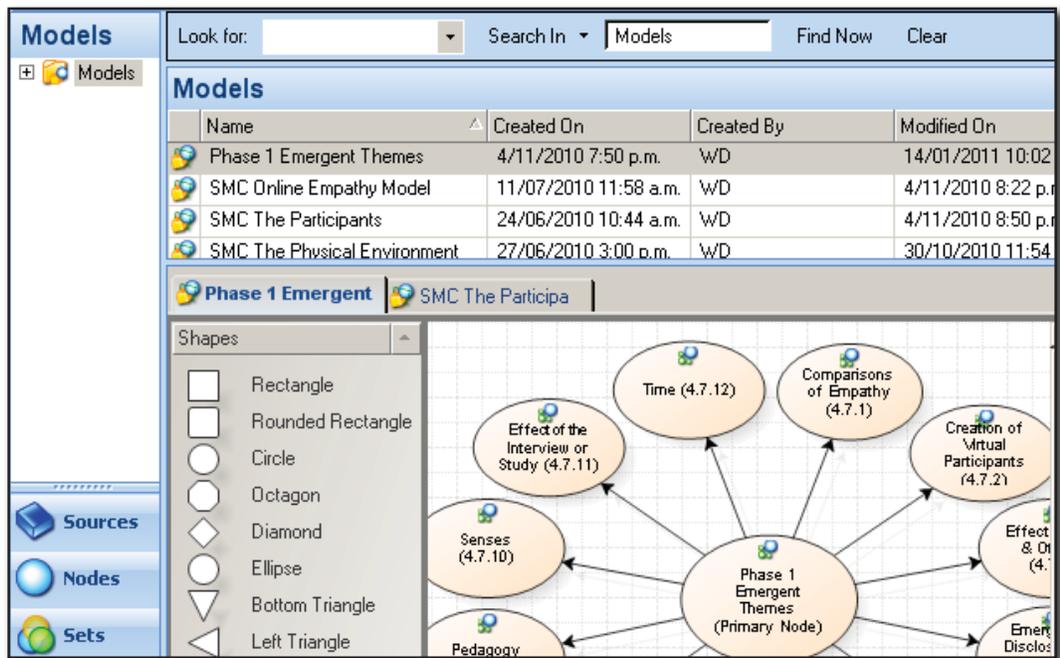
The screenshot shows the 'Nodes' view in NVivo. The left sidebar shows a tree view with 'Tree Nodes' selected. The main window displays a table of 'Tree Nodes'.

Name	Sources	References	Created On	Cr
Phase 1 AUTO CODING	1	1	23/06/2010 1	W
1 Experiencing Compassion		18	19	23/0
2 Experiencing Encouragement		19	19	23/0
3 Experiencing Helping Behaviours		18	19	23/0
4 The Spontaneous Spread of Emotion		19	22	23/0
5 Effect of Technical Problems Stress and Workload.		20	24	23/0
6 A Supportive Environment		18	19	23/0

Tree, Branch and Sub-Branch Coding

[-] The Participants		0	0	30/09/20	WD	30/09/2010 4:0
[-] Are	1	1		30/09/2010 3:49	WD	30/09/2010 4:0
[-] Agreement	15	17		30/09/2010 3:5	WD	27/11/2010 2:1
[-] Of Most Importan	15	16		30/09/2010 3:5	WD	27/11/2010 2:1
[-] Perspectives	10	10		30/09/2010 4:0	WD	27/11/2010 2:0
[-] Experience	1	1		30/09/2010 3:50	WD	30/09/2010 4:0
[-] Agreement	15	15		30/09/2010 4:0	WD	27/11/2010 2:1
[-] Of Most Importan	15	16		30/09/2010 4:0	WD	27/11/2010 2:1
[-] Perspectives	9	9		30/09/2010 4:0	WD	27/11/2010 2:1
[-] Think About	1	1		30/09/2010 3:49	WD	30/09/2010 4:1
[-] Agreement	15	18		30/09/2010 4:1	WD	27/11/2010 2:1

NVivo® Modelling Software



APPENDIX S.
PHASE 1: EMERGENT THEMES: CODING CATEGORIES

Tree Nodes	- Branch Nodes	Tree Nodes	- Branch Nodes	Tree Nodes	- Branch Nodes
Comparisons of Empathy	<ul style="list-style-type: none"> - Gender: Male vs Female - Online vs Face to Face - Teacher vs Students - Textual/ Oral/ Visual - Video Conf vs SMC 	Motivation	<ul style="list-style-type: none"> - Effect of Frustration - Interpretation of attitude or motivation of others - Lack of motivating others - Rationale for being motivated 	Creation of virtual participants	<ul style="list-style-type: none"> - Effect of Matching with experience - More “out there” - Process and location
Empathic Accuracy	<ul style="list-style-type: none"> - What, not how said - Technical problems - Effect of experience - Loss of context - Can become accurate - Support and belonging - Creating inaccuracies - Cues to help accuracy 	Empathy as an Interaction	<ul style="list-style-type: none"> - Effect of increasing decreasing interaction - Mode of interaction, orally, textually, visually - Task vs social interaction - Interaction that occurs outside the session 	Effect of empathy on self and others	<ul style="list-style-type: none"> - Distance social / cognitive - Enjoyment comfort motivation - Frustration at not being able to - Learning, engagement - Personalised and understanding - Confusion, understanding - Support and belonging
Emergence & disclosure of empathy	<ul style="list-style-type: none"> - Emergence of self - Effect of Environment, of others, of self - Hiding self - Creating other self - Tech Environment - Holding back 	Pedagogical Effects	<ul style="list-style-type: none"> - Future suggestions - Interaction - Building the class environment - Other modes of interaction - Pauses Personalisation - Task vs social interaction 	Senses	<ul style="list-style-type: none"> - Lack of communication channels - Actions and behaviour - Asynchronous email - Emoticons – smiley’s - Eye contact Facial expression, body language - Multimedia effect /experience
Effect on Learning	<ul style="list-style-type: none"> - Ability to relate - perspectives - Anxiety Communication - Greater understanding - Higher motivation - Increase in engagement - Confidence & enjoyment - Negative effects - Effect on learning Support 	Time as a factor	<ul style="list-style-type: none"> - Effect of time - Teacher vs student time - Predictions of increasing time - Effect of time on subsequent sessions - Insufficient time 	Senses (Continued)	<ul style="list-style-type: none"> - New communication means / arrangements - Oral, tonal, speed of words, emphasis of words - Orally; the use of words - Similar experiences of empathy - Compared to in person

APPENDIX T.

PHASE 1: EMERGENT THEME SUMMARIES

Tree Nodes	Branch Nodes	Sub-Branch Nodes
The Participant	The things they do or are	<ol style="list-style-type: none"> 1. Influence others and the environment 2. Interactive and Empathic 3. Motivated Confident and Positive
	The things they experience	<hr style="border-top: 1px dashed black;"/> <ol style="list-style-type: none"> 1. Empathic Interpretation 2. Enjoyment Satisfaction and Comfort 3. Frustration at not being able to empathise 4. Learning and Understanding 5. Development of relationships 6. Greater Social distance when technical problems
	The things they think about	<hr style="border-top: 1px dashed black;"/> <ol style="list-style-type: none"> 1. How to improve empathic accuracy 2. Their place as a learner or teacher 3. The reasons for interacting and empathising 4. The role of social interaction in empathising
The Physical Environment	Facilitates	<ol style="list-style-type: none"> 1. Selective disclosure 2. Greater participant engagement 3. Opportunities for new ways to interpret others
	Limits or Creates	<hr style="border-top: 1px dashed black;"/> <ol style="list-style-type: none"> 1. Empathic inaccuracies 2. Loss of context 3. Frustration and loss of motivation 4. Desire for richer multimedia experience 5. Desire for more social interaction
The Social Environment	Within the social interaction	<ol style="list-style-type: none"> 1. Increasing social interaction increased empathic accuracy 2. The most interactive are easiest to interpret 3. Teacher/Student most empathic 4. Decrease in formality and increase in personalisation 5. Some social structures are similar.

APPENDIX U.
PHASE 2B: RESPONDENT VALIDATION CODING
CATEGORIES

Tree Nodes	Branch Nodes	Sub-Branch Nodes
The Participant	The things they do or are	<ol style="list-style-type: none"> 1. In Agreement / Disagreement 2. Themes of most importance 3. Personal Perspectives <hr/>
	The things they experience	<ol style="list-style-type: none"> 1. In Agreement / Disagreement 2. Themes of most importance 3. Personal Perspectives <hr/>
	The things they think about	<ol style="list-style-type: none"> 1. In Agreement / Disagreement 2. Themes of most importance 3. Personal Perspectives
The Physical Environment	Facilitates	<ol style="list-style-type: none"> 1. In Agreement / Disagreement 2. Themes of most importance 3. Personal Perspectives <hr/>
	Limits or Creates	<ol style="list-style-type: none"> 1. In Agreement / Disagreement 2. Themes of most importance 3. Personal Perspectives
The Social Environment	Within the social interaction	<ol style="list-style-type: none"> 1. In Agreement / Disagreement 2. Themes of most importance 3. Personal Perspectives 4. Similarity of Social Structures 5. % Similarity to Normal Classrooms.
The SMC Empathy Model		<ol style="list-style-type: none"> 1. In Agreement / Disagreement 2. Presentation of Own Models 3. Personal Perspectives
Additional Questions		<ol style="list-style-type: none"> 1. One Improvement 2. A Metaphor 3. Level of Interaction 4. Level of Motivation
Research Approach	Interview Context	<ol style="list-style-type: none"> 1. Vs Face to Face 2. Vs Telephone <hr/>
	Research Strategy	<ol style="list-style-type: none"> 1. Constructed together 2. Understanding Developed

APPENDIX V.
AUTO CODING VS MANUAL CODING OF AREAS OF INTEREST

Auto Coding Analysis	Respondent Group 1 Participants (Teacher)										Respondent Group 2 (Teacher)							Average
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7			
Experiencing Compassion	8%	7%	6%	4%	7%	7%	8%	5%	14%	4%	9%	15%	8%	7%	7%	8%		
Experiencing Encouragement	10%	11%	20%	8%	13%	8%	12%	10%	5%	14%	12%	13%	15%	9%	8%	11%		
Experiencing Helping Behaviours	6%	3%	4%	10%	5%	9%	12%	8%	7%	4%	6%	6%	7%	9%	5%	7%		
Emotional Contagion	8%	11%	12%	30%	11%	13%	11%	6%	9%	10%	5%	17%	12%	23%	7%	12%		
Effect of Technical Problems	10%	8%	19%	6%	26%	12%	9%	6%	17%	10%	7%	8%	15%	13%	14%	12%		
A Supportive Environment	6%	4%	3%	4%	2%	6%	6%	9%	15%	6%	6%	3%	6%	7%	4%	6%		
A Strengthening Bond	10%	17%	8%	13%	8%	7%	11%	13%	8%	11%	14%	14%	10%	10%	10%	11%		
An Ability to Predict Others	15%	15%	11%	6%	8%	16%	6%	8%	7%	16%	11%	10%	8%	8%	16%	11%		
A Sense of Belonging	14%	3%	4%	8%	2%	7%	5%	16%	7%	10%	9%	3%	6%	4%	4%	7%		
Cues in Language Modulation	5%	7%	3%	4%	4%	6%	6%	5%	5%	5%	4%	5%	5%	7%	6%	5%		

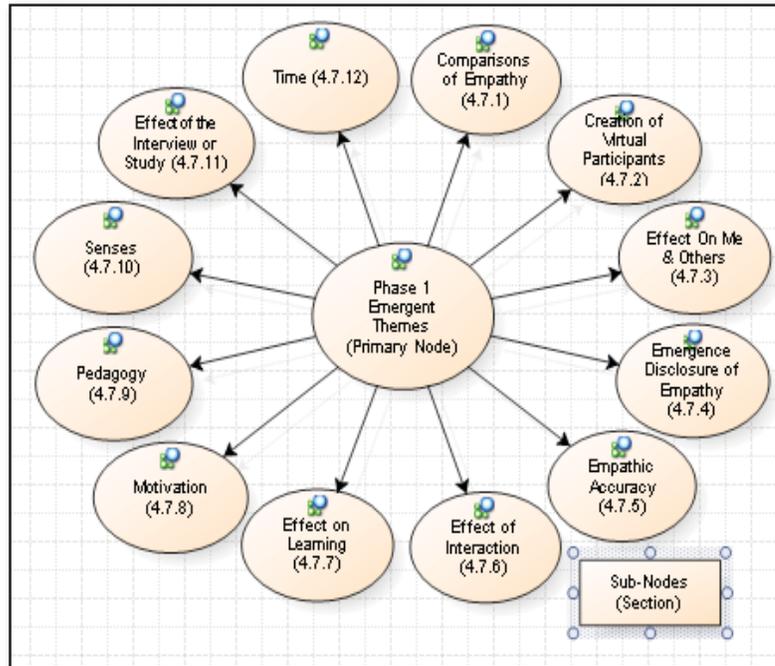
Manual Coding Analysis	Respondent Group 1 Participants (Teacher)										Respondent Group 2 (Teacher)							Average (Auto)
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7			
Experiencing Compassion	6%	7%	6%	4%	5%	8%	8%	5%	13%	4%	11%	7%	7%	16%	5%	7% (8%)		
Experiencing Encouragement	6%	11%	12%	4%	7%	4%	6%	5%	5%	14%	12%	10%	11%	9%	8%	8% (11%)		
Experiencing Helping Behaviours	3%	0%	9%	2%	3%	14%	9%	6%	10%	7%	5%	7%	4%	8%	6%	6% (7%)		
Emotional Contagion	5%	7%	12%	8%	5%	4%	7%	5%	3%	9%	5%	4%	16%	5%	6%	7% (12%)		
Effect of Technical Problems	5%	7%	18%	0%	6%	11%	12%	10%	5%	11%	5%	6%	14%	12%	18%	9% (12%)		
A Supportive Environment	5%	4%	5%	3%	2%	4%	3%	5%	7%	4%	6%	3%	5%	1%	5%	4% (6%)		
A Strengthening Bond	13%	4%	5%	15%	7%	7%	7%	4%	18%	9%	13%	8%	10%	10%	5%	9% (11%)		
An Ability to Predict Others	15%	15%	11%	6%	8%	16%	6%	8%	20%	22%	9%	12%	9%	8%	13%	12% (11%)		
A Sense of Belonging	1%	3%	5%	2%	2%	8%	6%	4%	13%	8%	3%	3%	6%	3%	3%	5% (7%)		
Cues in Language Modulation	2%	7%	3%	4%	4%	3%	5%	5%	5%	5%	3%	4%	5%	6%	5%	4% (5%)		

10 point or larger difference between the average and participants percentage of testimony for that area of interest.

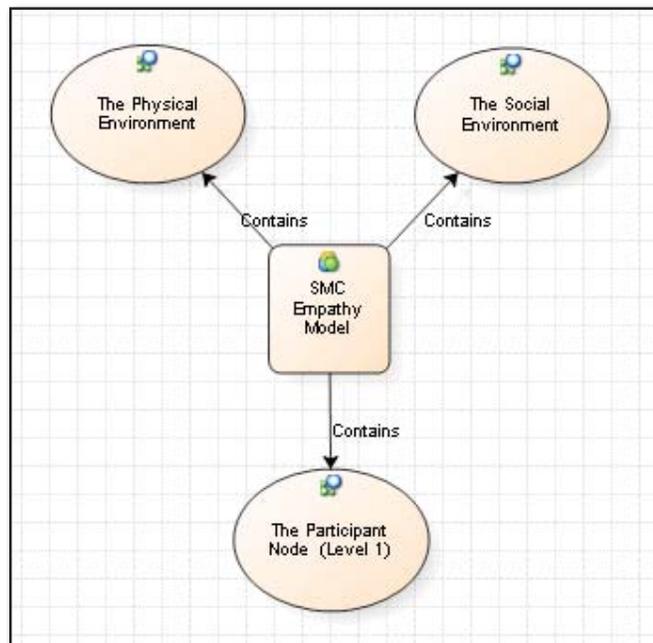
APPENDIX W.

CODING RELATIONSHIP MODELS (NVIVO®)

Phase 1: Emergent Themes.

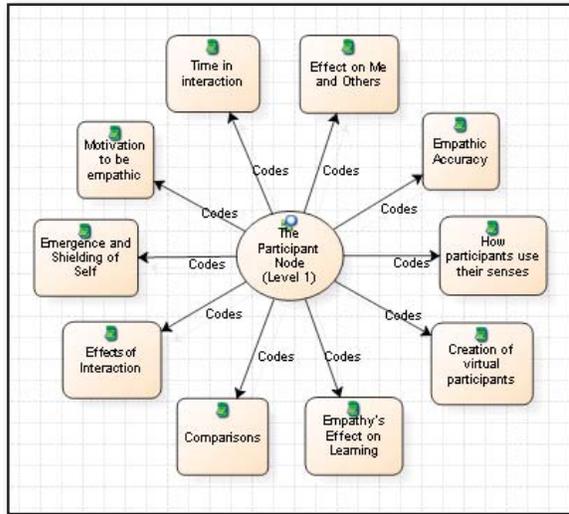


The SMC Empathy Model

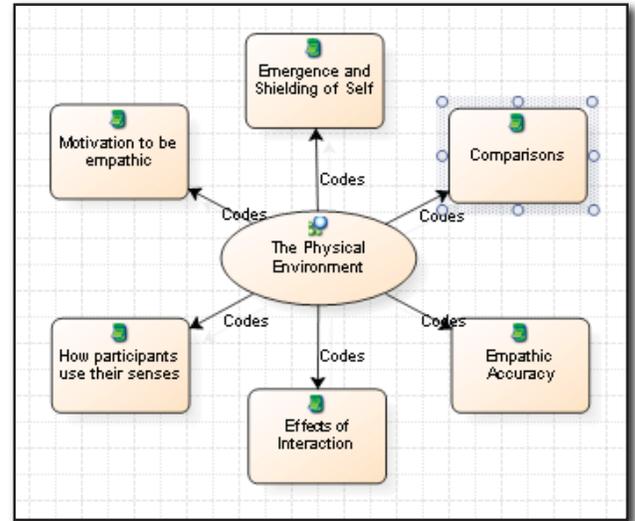


Coding Categories:

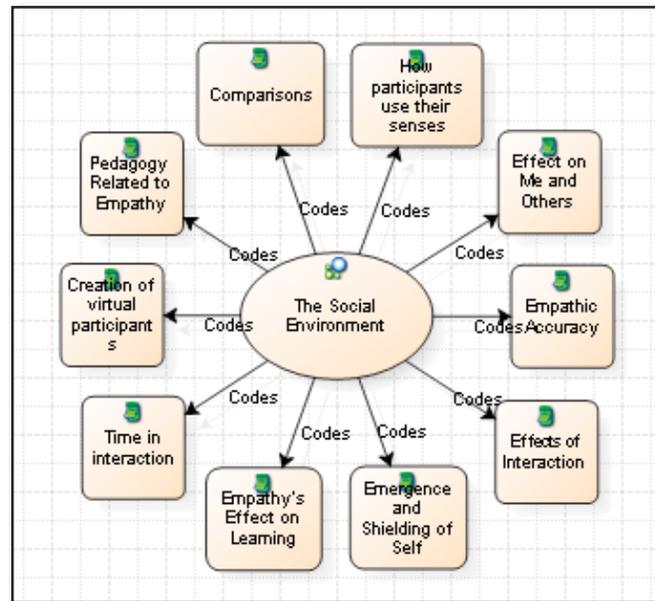
The Participant.



The Physical Environment.



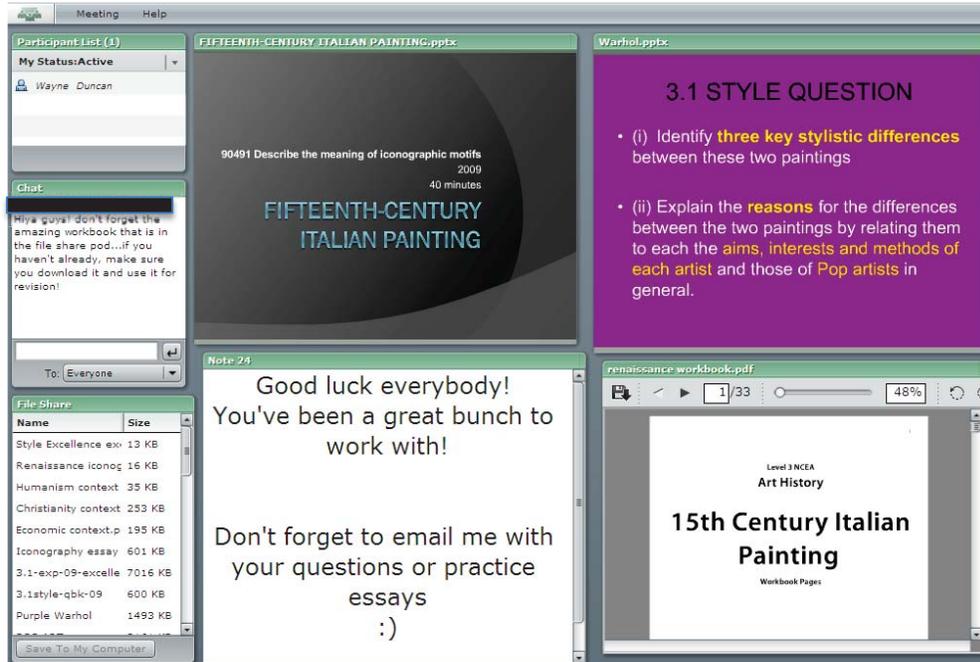
The Social Environment



APPENDIX X.

ADOBE CONNECT® SCREEN CAPTURES

Level 3 Art History online virtual environment



Final respondent validation interview including spider web model

