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**Reflective Outcomes in
Asynchronous Computer Mediated
Communication:
A Case Study using a Comparative
Method**

VOLUME ONE OF TWO

Thesis submitted for the degree of PhD,

by

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School of Education, University of Durham,

May 2011

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DECLARATION

I declare that this thesis represents my work and it has not been submitted to this or any other institution in application for admission to a degree, diploma or any other qualification.

STATEMENT OF COPYRIGHT

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~ It is the supreme art of the teacher to awaken joy in creative expression and knowledge (Albert Einstein).

~ The teacher who is indeed wise does not bid you to enter the house of his wisdom but rather leads you to the threshold of your mind (Khalil Gibran).

~ I am indebted to my father for living, but to my teachers for living well (Alexander the Great).

~ I can no other answer make, but, thanks, and thanks (William Shakespeare).

Surely, this thesis would not have been possible without the infinite support and love of my family. Mother and Father thank you for your guidance, encouragement, and unconditional love throughout my life. Lia, without your love, counsel and wisdom, this thesis would not have been completed. Thank you so much for

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Thank you.

For my father,

*who wanted me to get the most out of my schooling
so that I may be a useful citizen in our society,
always striving to apply the gains of my education to advance
the well-being of my fellow human beings.*

ABSTRACT

In an era of constant educational reforms, many acknowledge teachers' professional development as the keystone to educational improvement. The issue of whether teachers' development is adequate has been crucial in all times, especially now that professional education faces a number of challenges due to the rapid technological development and the need for lifelong learning incited by globalization of world economies. Nevertheless, although common acceptance exists that reflective practice is a key ingredient for professional development, the art of cultivating reflection in the context of CPD requires further attention.

A review of the literature shows a long history on research that embraces a wide range of strategies that argue to promote teacher reflection. However, there is unclear evidence about whether reflective thinking – as a meaningful professional objective – may be promoted through collaborative computer mediated discourse. What's more, although there is a plethora of assessment tools that claim to assess reflexivity, very few authors exemplify the theoretical framework underpinning the notion of reflection employed in their studies.

The purpose of this study has been to examine whether, and if yes how, reflective thinking is promoted through collaborative asynchronous computer mediated communication by comparison with traditional face to face discourse. A case study using a comparative method was employed to analyze the electronic discourse by comparison with the face to face dialogue of twenty post 16 education practitioners in the UK. Research design considerations and implications related to what constitutes evidence of reflection and how it may be represented for the purposes of reporting on research outputs are also critically examined.

The results lend support to the view that, although reflective outcomes can be accomplished in an asynchronous computer mediated communication, the recurring theme of storytelling observed in the face to face discourse appears to cultivate and influence the depth of reflexivity achieved.

Section I

Background to the Study and Relevance of the Literature

This thesis is divided into four sections, with a total of eleven in-built chapters. Section I consists of the first two chapters of this thesis, that is, the ‘Background to the Study’ (Chapter 1) and the ‘Critical Analysis of the Pertinent Literature’ (Chapter 2).

Chapter 1 acts as the foreword of the thesis. It considers the research orientation of the present study, framing the empirical investigation within the context of the relevant research literature; in doing so, possible inferences are raised, depicting the significance of the study. The chapter concludes by presenting an overview of the thesis, outlining its sections and its in-built chapters.

Chapter 2 portrays a critical analysis of the pertinent literature. It does so by reflecting on the nature, scope and role of reflection in teacher education, by critically examining theories, models and perspectives, raising implications for research design considerations, and by presenting how the notion of reflection is employed in this study. The scope and potential of asynchronous on-line networks to promote reflective thinking is examined, and the social dimension of computer mediated communication is also discussed. Finally, reference is made to the emerging concept of ‘on-line learning communities’ and their capacity to enhance reflection and foster continuing professional development in the education arena.

Chapter 1

Background to the Study

1.0 Introduction

‘Excellence is an art won by training and habituation’ is what the Greek philosopher Aristotle alleged around 345 years BC. At the outset of the 21st century, still, there is a lot of discussion around training and development activities and devices, reflective practice, and the role and the potential of emerging technology advancements to promote effective professional development for practitioners in the education community.

Speaking of reflection, Johns (in Tate, 2004), in a startling and radiant metaphor, compares it to a pool of blue inviting water; the pool has a shallow end, where the bottom is visible, and a deep end, where the blue is deep and the bottom unknown. Reflecting on oneself is the path towards reaching that deep end and the unknown bottom, the mirror that reveals the curve from being to becoming, the process for successful professional development and practice.

How are we to be best assisted in taking such a voyage though? Is it going to be skilful intellectual mentors? Inspirational techniques in training delivery perhaps? Or should we shift the emphasis to those emerging technologies, which, some argue, are presently transforming our world? With these challenging and intricate complexities in mind, I would like to guide you to the roadmap of this thesis.

1.1 Background to the Inquiry

In an era of constant educational reforms, many acknowledge teachers' education and continuing professional development (CPD) as the keystone to educational improvement (Hawley and Valli, 1999). The issue of whether teachers' CPD is adequate has been crucial in all times, especially now that professional education faces a number of challenges because of the rapid technological development and the need for lifelong learning incited by globalization of world economies (Day, 1999).

Within the past decade or so, there have been numerous calls for the reform of teacher professional development programs (Darling-Hammond and McLaughlin, 1995; Gess-Newsome, 2001) and a plethora of professional development programs have arisen as a result. The evolving literature on teachers' development addresses extensively an international debate not only around its orientation but about its effectiveness as well (Jonassen, 1994; Gunawardena, 1998).

Schon (1983) argues that the 'craftsmanship', the 'instrumental control' is not sufficient on its own, as teaching demands that teachers are aware of their own capacities and they have to demonstrate a genuine engagement to develop these within the context of their career; in other words, it is not enough for teachers to fall back on their 'tacit recognition, judgments and skilful performances' (1983:50):

Their action needs to be sustained with reflection (Copeland, Birmingham, De La Cruz and Lewin, 1993; Schon, 1983) on the basis of which they can identify and solve problems in such a way that their knowledge is refined. Through the continuous reflection on their own practice, teachers develop mastery out of their craftsmanship (Clement and Vandenberghe, 2000:87).

Nevertheless, although common acceptance exists that reflective practices are a key ingredient for teachers' CPD, the 'art' of cultivating reflective practices within teacher professional development programmes requires further attention (Muelle, 2003:68). In addition, the literature concerning teacher development strongly suggests that national and international priorities are not being met. Traditional and popular methods of professional development in the form of single or short series face-to-face sessions have negligible impact in classroom practice, and research indicates that such approaches simply are not effective means for generating improvements in teacher

practice and student learning (Centre for Educational Research and Innovation, 1998; Miller, 1998; Hawley and Valli, 1999; Brooks-Young, 2001; Commonwealth Department of Education, Science and Training, 2001; Hawkes and Romiszowski, 2001; McRae *et al.*, 2001; Vance and McKinnon, 2002 in Anderson and Henderson, 2004:383).

With these concerns in mind, scholars from the educational community have embarked on exploring additional approaches to traditional face to face modes of CPD, which would provide practitioners with on-going, quality support, and opportunities for meaningful professional growth experiences in ways that go beyond time and place. In this context, discussions and further research started to progress investigating new models of teachers' CPD under the theme of emerging communication technologies and their potential to promote practitioners' knowledge in the field of professional learning (Blanton, Moorman, Trathen, 1998; Laferrière, 2000, Clarke, 2002; Conlon, 2004; Anderson and Henderson, 2004).

In the light of ongoing evidence that current models of professional development fail to promote ICT integration on the scale demanded, the Australian Ministerial Council on Education, Employment, Training and Youth Affairs (2003) identified teacher professional development as one of five national research priorities (Anderson and Henderson, 2004:384). However, this Australian concern is reflected internationally; in a report of a survey of 10 countries that included the United Kingdom (UK) and the United States, Kearns (2002) points out that the professional development of teachers is universally considered a crucial element and emphasizes the fact that traditional methods fail to serve this objective (*ibid.*).

Network infrastructure improvements and technology developments, i.e. various e-learning software, electronic discussion tools, and mail systems have increased dramatically in the last years, and are being used with an evolving role within the education sector (Conole, Hall and Smith, 2002). Learning cultivated within an on-line environment has been used in a variety of contexts and across various stages of educational growth, including continuing professional development (Brink, Munro and Osborne, 2002; DeLacey and Leonard, 2002; Lockwood, 2001; Mason, 1998).

This outbreak of technology evolution has opened new pathways for teacher professional development, which can be tailored to meet individual learning needs and demanding schedules, and that can draw upon a wealth of information and knowledge, often not available within ease of access or location wise. In principle then, these

electronic networking technologies can offer greater opportunities for practitioners to access and update professional knowledge, engage in collaborative dialogue and share their experiences with colleagues when they need access to professional development resources the most (Schlager and Schank, 1999; Shotsberger, 1999).

As on-line environments and discussions about their effectiveness have played an increasingly prominent role in teaching and learning, we would expect that their use would become increasingly more effective: for example, in 1996, when on-line environments represented a new space for teaching and learning, Wisenberg and Hutton observed that participants experienced challenges communicating in the absence of visual cues and with the time needed to devote to on-line conversations; two years earlier, Burge (1994) identified similar challenges with lack of visual cues, peer interaction, information management and working collaboratively; approximately, a decade later, Murphy and Coleman (2004) identified analogous challenges (Hsiao, 2000:5). The congruency in these findings suggests that, in spite of increased experience with on-line discussions, there may not always be a concomitant improvement in the quality, effectiveness and benefits of that experience, and further research would be of benefit to the education community (*ibid.*).

1.2 Research Orientation

My deliberations for initiating the present empirical investigation derive from my own experience as a practitioner in the post 16 education sector in the UK and they are two-fold.

Being a member of a UK regional professional network – the Learning and Skills Development Agency (LSDA) in the North East of England – I have attended and actively participated in numerous conferences and training events, which were aiming to disseminate good practice and to promote professional knowledge and expertise. LSDA shapes a strategic national resource body for the development of policy and practice in post-16 education and training, and it was formed under the UK reform umbrella for the Skills for Life agenda.

What occurred to me though, and whilst reflecting on these training events, was that, although there seemed to be relatively high rates of practitioners' attendance, there appeared to be a general dissatisfaction amongst some of the network members, deriving mainly from the complexity of some of the key concepts and terminology

introduced during the events. Specifically, it became obvious to me, from short conversations I had with colleagues during the conference events, that a number of participants were disturbed as by the middle of the event they had comprehended less than adequate to be able to grasp the key points made during the conference, sometimes even wondering about the purpose of the event. As a result of this kind of experience, my thoughts were that many practitioners became 'disenfranchised', developing a negative attitude towards attending future similar CPD events.

Surely, the implication that arises at this point involves the aptitude and the efficiency of those training events to deliver professional learning by successfully engaging its community members; Kagan (1992) argues that people tend to develop a negative attitude towards CPD, when they develop the perception that either the mode of training delivery adopted is not effective enough and/or there is little support available, whilst others, according to Day (1992), admit attending passively, being merely recipients of existing or newly acquired knowledge, as they are not centrally involved in decisions concerning the direction and processes of their own learning (1999:2).

This is probably what Dadds (1997) had in mind when he stressed the significance of CPD processes 'nurturing the expert within' the teacher, in contrast to 'empty vessel' or 'delivery' models of CPD; there is a need for teachers to be centrally involved in the conduct of CPD, grounded on the researched realities of teachers and teaching, professional learning and development, and the contexts in which they take place (Conlon, 2004:118):

Teachers cannot be developed (passively). They develop (actively). It is vital, therefore, that they are centrally involved in decisions concerning the direction and processes of their own learning (Day, 1999:2).

This emphasis upon teachers' participation in the discussion of CPD partly reflects, according to Conlon (2004:118), an acknowledgment of the emotional dimension of teachers' learning; the essence of CPD is reflection upon teaching and, like teaching itself, this process involves 'the head and the heart' (Day, 1999:47). As Day (1993) says, few discussions on professional development occur without some reference to the central role that reflection plays in the learning life of the teacher; it is

the *sine qua non* of the ‘teacher-researcher’, ‘action research’ and ‘reflective practitioner’ movements (1993:83).

Still, my feeling was that most participants were ‘thirsty’ for learning, collaboration and generation of debate on policies and practice; however, I felt that their aspirations were not cultivated and challenged enough or, alternatively, the opportunities for reflection to occur were not nurtured at all: ‘reflection does not occur by merely training the practitioner but rather by probing, inquiring and challenging in the context of learning about teaching’ (Loughran, 1996:78).

1.3 Framing the Research

These observations were the triggering event for me to start wondering whether adopting different means of CPD delivery, and mainly those concerning communication technologies and the way in which they can be used to support teacher learning and professional development (Blanton, Moorman, Trathen, 1998; Laferriere, 2000), could be the alternative avenue that would make a difference in teachers’ professional practice.

Yet, I could not help it but to look back at my own professional development pathway, above all when reflecting over the past few years of my academic life in England as a postgraduate student, and especially on my ventures utilizing the electronic pathways as a novice ‘netizen’¹ (following Ronda and Michael Hauben, who introduced the term, i.e. *net.citizen*). And then it struck me that the locus of my intellectual capital (Grey, 1998) had shifted from training handbooks, workshop notes and intelligent manuscripts to an on-line, worldwide source of knowledge that became available to me by utilizing contemporary Information and Communication Technologies (ICTs).

All the more, a truth, which has grown to be ever more obvious to me, is that these communication technologies have evolved to be not only a key alternative pathway to professional learning, but also a growing field for personal and professional reflection, or instead the cornerstone of the ‘rebirth of my mind’, as I

¹ netizen, is more than just somebody who uses the Internet. It is somebody who has demonstrated a devotion to being a good citizen of an on-line community. Some have been involved in constructing parts of the Net and forming it into a major social force. Others are simply members of mailing lists and discussion groups, quietly lending a helping hand to others and sharing information, support, and aid through the wires.

would rather call it; and reflecting on my professional development has helped me become more competent in the indeterminate zones of practice, the uncertainties, the surprises (Schon, 1987:4).

It was probably mainly personal curiosity at that point, but a passionate eagerness as well to engage myself actively in research, as I wondered whether other people would respond alike, i.e. react in the same way to the mode(s) in which computer communication technologies can be employed as viable means of providing professional development and facilitating teacher change (Boling, 2005).

No doubt, computer mediated communication (CMC) has brought an evolution to traditions about the ways in which professional knowledge is created and disseminated in adult education, and claims for the impact of CMC on knowledge construction and dissemination are now well established; what is much less explored though is its quality, as little empirical research has been conducted to investigate its effectiveness (Becta, 2004; Boling and Martin, 2005). Therefore, and after Fouts (2000), any research agenda must be seen as a concerted effort to answer the broadest research question: ‘how are the new technologies best used in education’ rather than ‘should the new technologies be used in education?’ (2000:33).

At its January 2003 meeting, the AERA Council unanimously passed a resolution promoting the essential elements of sound, scientifically based research; in this resolution, the Association Council reasserted that there are multiple sound methodologies available to the educational research community and reminded participants that, for any given investigation, research questions should guide the selection of inquiry methods (Borko, 2004:13). Thus, we must make thoughtful informed decisions about the design and methods most appropriate to the specific questions we are asking (*ibid.*).

In the light of the current interrelated research realm, the central question throughout the present enquiry has been to examine whether, and if yes, how reflective thinking – as a meaningful professional development objective – is promoted through collaborative asynchronous computer mediated communication (ACMC) by comparison with traditional face to face discourse. Specifically, empirical data were collected to address the following pertinent research questions:

- What aspect and depth of reflection – if any – does asynchronous computer mediated communication achieve?
- How does it compare with traditional face to face discourse?
- What are the contextual factors which encourage or hinder reflection in an asynchronous computer mediated environment?

These questions remained central to the research enquiry throughout. I shall now turn to consider the context and relevance of the study.

1.4 Context and Relevance of the Study

Back in 1954, Dr. Skinner's experimental work was concerned with an analysis of the effects of reinforcement in learning, and the designing of techniques by which reinforcement can be manipulated with considerable precision; in order to take advantage of recent advances in the study of learning, he argued, the teacher must have the help of mechanical devices (1954:86).

Subsequent readings suggest that key areas identified as being important to investigate, and in doing so provide direction for future development, are face to face discourse compared with on-line interaction, the role of on-line moderators, the differential uses and needs for technology (e.g. geographic isolation, cross sector collaboration), access to high-speed internet connections, and pedagogical value of interaction and provision of access to educational research (Breulux, Laferriere, Bracewell, 1998; Burbules and Callister, 2000; Clift, Mullen, Levin and Larson, 2001; Willinsky, 2000).

However, the literature that addresses the benefits of employing interactive technologies to support teachers' CPD is at present under scrutiny and has sparked much controversy (Botha, 2005); some are characterized by considerable optimism pertaining to the potential of the technology advances to expand professional collaborative communities into the on-line arena (Mayer, 2003; Blanton, Moorman, Trathen, 1998; Laferriere, 2000), others appear to be more sceptical about its efficacy to sustain and promote worthy educational practice and professional growth, whilst a few claim that research findings that confirm the benefits of modern technologies for professional learning may 'simply not hold true' (Robleyer and Knezek, 2003:61) or

that the quality of published research in the field of instructional technology is generally poor (Reeves, 2000).

As Anderson (2002) says though, can we afford to leave it to chance? Indeed, this is not a simple task. Whilst there is substantial innovation in this area, and though to ignore the educational potential associated with technology would be folly (Mayer, 2003), there is a need for much subsequent research with an increased focus to identify and assess the potential and the scope of ICTs to contribute to traditional schemes of continuing professional growth and expand on their capacity to facilitate collaborative reflection (Jonassen, 1994; Serim, 1996).

Still, these controversies sparked further personal enquiries, which in turn spurred subsequent speculation; and, with a glimpse into the past and an eye on the future, I couldn't help it but to wonder and ask myself: could ICTs be integrated effectively into practitioners' professional training, development and practice and how? Could e-networks promote and sustain an on-line mode of CPD? Could e-networks be more effective than the equivalent traditional CPD modes? Could electronic environments provide a more fertile ground for reflection to develop? If yes, what would constitute evidence of reflection and what attributes would best encourage collaborative teacher development on-line? And finally, could this be the alternative to tackle the disparity of practitioners' engagement and satisfaction in this specific CPD network case in the North East of England, and what role could I play in that?

No doubt, it is far from easy to answer the above questions, but certainly a challenging task to pursue. For this, I feel it is imperative that I consider how this study fits within the contemporary research agenda of teacher professional development, including most recent UK government priorities and initiatives observed in the field.

1.4.1 National Priorities Regarding Teachers' CPD

It has been noted for several years that CPD provision and policy making needs to be centrally informed by deep understanding of how teachers learn (Evans, 2002; Fraser, 2005); such understanding is an essential element of developing successful CPD approaches (Daly *et al.*, 2009:36).

In the last decade or so, the education system in England has been subject to intense accountability, including the implementation of the National Curriculum, the introduction of a more detailed and demanding national programme of testing, whilst at the same time taking different and far more intense stances on policies related to teachers' professional development, with teachers now having a quasi-statutory requirement not only to engage actively but also to identify, record and evaluate professional development (Campbell, 2003:375-377).

Despite the weaknesses and confusions of current policies, something new is happening: there have been significant shifts in policies and the ways we approach learning and access to knowledge (Smith, 1996, 2001). There has been a fundamental shift into individualized learning as economic, social and cultural changes have caused many to live in 'knowledge' or 'information' societies that have strong individualizing tendencies and a requirement for permanent learning (reflexivity) (Beck, 1992; Giddens, 1990), as 'non formal' learning permeates daily life and is valued (Field, 2002); for example, there has been a substantial increase in activities such as, short residential courses, study tours, management gurus, self-instructional videos and computer mediated communication, that is, communication via the means of electronic networks (ibid., 2002:45).

Tony Blair, in the UK government's consultation paper 'Connecting to the Learning Society', and soon after New Labour's election victory in 1997, signalled his intention to follow through his party's manifesto commitments to the development of technology in education (Conlon, 2004):

Technology has revolutionised the way we work and is now set to transform education. Children cannot be effective in tomorrow's world if they are trained in yesterday's skills. Nor should teachers be denied the tools that other professionals take for granted (DfEE, 1997:2).

The Dearing report (Dearing, 1997) also placed considerable emphasis on CPD, recommending that 'it should become the norm for all permanent staff with teaching responsibilities to be trained on accredited programmes' (Sharpe and Bailey, 1999:179). Not long after, New Labour's enthusiasm was further underlined in the follow up publication 'Open for Learning Open for Business' (DfEE, 1998), where it was stated that 'by 2002 the United Kingdom should be a centre for excellence in the

development of networked software content for education and lifelong learning, building upon a strong private sector educational software industry and a world leader in the export of learning services' (1998:24). Government reports in Britain, such as '*The Learning Age*' (DfEE, 1998), demonstrate how far this movement has occurred with teachers' CPD being central to its reform policy, the latter being abridged in the '*Learning and Teaching: a strategy for professional development*' publication by the Department for Education and Skills (DfES, 2001).

Furthermore, the British government, under the Raising Standards agenda, placed immense emphasis on the professional pre-service and continuing development of teachers with initiatives embracing 'Best Practice Research Scholarships', 'Education Action Zones', 'Teachers Professional Learning Framework' and 'Networked Learning Communities' (General Teaching Council, 2004; Campbell and Jacques, 2004). The above effectively committed the United Kingdom to an enormous investment programme in developing school technology and teachers' skills (Conlon, 2004:121) with a bill from 1998 to 2004 which would eventually total £1.8 billion for NGfL (National Grid for Learning) development, plus a further £230 million for NOF training (OFSTED, 2002).

Defining teachers' entitlement to professional development is at the heart of the General Teaching Council's work (GTC) as well; in the Council's statement of 'Professional Values and Practice for Teachers' central to its vision is that 'teachers continually reflect on their own practice, improve their skills and deepen their knowledge; it is further explained that teachers need the opportunity and the time to engage in sustained reflection and structured learning, and reflect on enhancing practice by participating in collaborative enquiry and problem solving, on-line learning opportunities, and by networking to share and develop professional practice within networked Learning Communities and professional on-line communities (2004:19).

More recently, in a published Council's report under the title 'Professionalism, teaching and the GTC, now and 2012 – issues and implications' (2008), the importance and value of continuing professional development was highlighted yet again:

The importance and value of continuing professional development is widely recognised by other stakeholder groups and organisations as well as by teachers themselves and does contribute to professional standing. Among teachers, the expectations of what constitutes CPD and how it can be achieved vary widely. Too narrow a view limits opportunity for development but it is also the case that the opportunity for and encouragement of effective professional development varies between contexts. This emphasizes the importance of the GTC continuing to promote an understanding of what constitutes effective CPD and of facilitating the creation of environments in which this can develop, particularly through the Teacher Learning Academy (2008:29).

In September 2007, a new system of performance management was introduced into English schools; the focus of the new system is the professional development of serving teachers, with one of its key stated purposes being:

the acknowledgment of teachers' and head teachers' professional responsibility to be engaged in effective, sustained and relevant professional development throughout their careers and to contribute to the professional development of others; and the creation of a contractual entitlement for teachers to effective, sustained and relevant professional development as part of a wider review of teachers' professional duties (Rewards and Incentives Group, 2006, para. 1.4).

Change is fundamental to the goal of achieving 'e-maturity' (DCSF, 2008, p. 20) in schools, and an 'e-confident' (p. 24) workforce as part of the government's latest stage of its ambitious strategy to transform the education system (Daly *et al.*, 2009:26).

Yet, the 'Harnessing Technology Review' (2008) reports 'a significant deficit in practice' and highlights the persistence of 'slow development of learning and teaching using technology' (2008:19); addressing these issues is a challenge which is likely to require multiple strategies, including building a coherent approach to continuing professional development, developing a greater sense of the importance of technology-based practice in the professionalism of practitioners, building better understanding of benefits of change, and sharing related good practice among the education profession (*ibid.*).

Finding a way out of this conundrum seems crucial in developing an effective CPD strategy; however, previous attempts at achieving this on a wide scale have

proved unsuccessful, with relatively little research that examines how teachers' professional development with technologies might be enhanced:

A historical focus on techno-centric aims for CPD, centralised direction (the New Opportunities Fund), generic skills training, top-down frameworks for CPD and 'one shot' and 'one shot plus follow-up' approaches has meant that the potential of technology to enhance the learning experiences of students remains largely unfulfilled. Similarly, there has been relatively little focus on *how* school teachers learn with technologies within on-line collaborative contexts (Dede, 2006; Fisher *et al.*, 2006). The importance of secure subject knowledge and subject-based pedagogical understanding has been highlighted for the effective use of technologies in education (Cox *et al.*, 2003), but there is relatively little that examines how teachers' professional development with technologies might be enhanced (Daly *et al.*, 2009:19).

1.4.2 Research Gaps

Day (1999) sees the establishment of networks as powerful sites of teacher learning, but he also stresses the need to invest in sustaining teachers' autonomy, in that the practitioners have the right to design and shape the types of learning and professional development activities they identify, either through collective or individual evaluation and analysis of their practice.

CPD initiatives are now being re-conceptualised in the face of pervasive technological change (Hogarth, 2004) and initiatives like the 'University for Industry' (Ufi) have signalled a shift away from traditional classrooms into 'learning centres' and more intensive use of distance and web-based learning. As the minister for education, Charles Clarke, announced a few years ago: 'ICT transforms education and the way we learn ... and I want a system of personalised learning that allows learners to learn at their own pace, in ways that suit them best ... effective use of the latest technology is absolutely vital to realising this vision' (January 2004).

And speaking of professional on-line communities, the emerging literature on on-line conferences, collaborative technologies and tools contains numerous examples of articles, manuals and related documents, which provide guidance and advice especially to new practitioners (BECTA, 2004; Cakir, 2002; Green, 1998). There has been little research though that has focused on the nature and quality of CPD, apart from some evidence of increasing interest in computer mediated communication (CMC). What is much less explored is CMC's impact on teachers' learning through

collaborative processes, such as participation in an electronic discourse (Pachler, 2003).

Similarly, Fisher *et al.* (2006) argue that there is very little fundamental research that investigates ‘how’ teachers might learn with digital technologies; rather, there seems to be a pervasive assumption that teachers ‘will’ learn with digital technologies (2006:2):

There is evidence of recent growth in teacher ‘networks’ (Johns-Shepherd and Gowing, 2007), both electronic and face to face. Electronic communities for teachers have proliferated in recent years, but their role in changing practice is not clear. There is growing interest in on-line learning communities and web-based learning for professional development based on their capacity to support bottom-up interactive learning approaches. Systematic research into the effectiveness of on-line learning communities for teacher CPD however, is as yet very undeveloped (Fisher *et al.*, 2006; Kao and Tsai, 2009 in Becta, 2009:34-35).

Having a look at the equivalent USA context, Ketelhut *et al.* (2006) have also declared that they have found themselves dismayed by the dearth of empirical research into on-line teacher professional development (2006:237):

This vacuum reflects the relative newness of teachers’ on-line learning communities, by which their early impact is mostly in terms of networking and exchanging information and resources. It is hard to gauge their effects on transforming knowledge, skills and pedagogy. In the USA, research has identified this as a ‘tension’ in the development of on-line professional development programmes for teachers, identified as ‘design for incremental learning versus design for transformation’ (2006:238).

As such, this is an area still new as a focus of study in its own right.

1.5 Significance of the Study

Since the introduction of the computer into education in the 1970s, researchers have investigated its effects on students, teachers, and learning environments (Fouts, 2000:9). Indeed, a number of new possibilities for teacher support have begun to emerge with the advent of web-based technology. One of these options, computer

mediated communication (CMC), is increasingly being seized upon as an attractive, low-cost alternative for facilitating teacher dialogue by providing round-the-clock opportunities for both individual and group interaction (Lieberman, 1996; Loiselle, St. Louis and Dupuy-Walker, 1998; Schrum and Berenfeld, 1997 in Hough *et al.*, 2004:361-362).

It is claimed that on-line communication provides the opportunity for learning in real time where teachers immediately apply new information and skills, and thus, improve the quality of instruction (Boling, 2005). The special features of on-line communication, i.e. that it is text-based and computer-mediated, many-to-many, time and place independent, and distributed via hypermedia links, provide an impressive array of new ways to link learners; and, when viewed in the context of socio-cultural learning theory, which emphasizes the educational value of creating cross-cultural communities of practice and critical enquiry, these features appear to make on-line learning a potentially powerful tool for collaborative learning (Warschauer, 1997). In other words, ICT is seen as the enabler, the tool that supports communication between teachers, learners and parents (Stein, 2005) and on-line communication is considered an intellectual amplifier (Harasim, 1990; Harnad, 1991).

Learning is a social experience, so professional growth is usually fostered through exchange, critique, exploration and formulation of new ideas (Dadds, 1997: 36). In 1987, Donald Schon introduced the concept of reflective practice as a critical process in refining one's artistry or craft in a specific discipline (Joan, 2000). He also spoke of it as the social-professional activity in which teachers adapt their knowledge to specific situations (Schon, 1987, 1991).

Reflection is claimed as a goal in many teacher preparation programs, but its definition and how it might be best promoted or fostered are problematic issues (Hatton and Smith, 1994). Nevertheless, teacher education researchers continue to seek new ways of promoting and/or documenting reflective teaching (Dinkelman, 1997; Fairbanks *et al.*, 1995; Hoover, 1993; MacKinnon, 1987; McMahon, 1997; Russell, 1993). In addition, it seems that there are relatively few training professional development opportunities that take into account practitioners' contexts and needs (Lieberman, 1995; NRC, 2001) or that provide them with on-going support that is situated in their everyday instructional environment (Schlager and Schank, 1997).

However, only recently have educational researchers begun to explore the advantages and disadvantages of networking technologies to support teacher

professional development and, although rapidly expanding, there is a need not only to summarize recent findings but also to provide a guiding framework for future research to similar work, as claims in this area raise far more questions than they answer (Zhao and Rop, 2001:5).

In addition, efforts to examine reflection in these environments are still in the beginning stages, as the literature is primarily comprised of descriptive reports that present anecdotal information, and quantitative studies that report basic statistics such as length of time on-line or the number of messages posted (Romiszowski and Mason, 1996); furthermore, because the supporting and constraining features of virtual communities are unclear and there are few instruments for assessing the quality of on-line discussion, the effectiveness of these CMC tools for teacher reflection remains an unpredictable phenomenon (Hough *et al.*, 2004:361-362).

According to Geertz (2003), studies do build on other studies, not in the sense that they take up where the others leave off, but in the sense that, better informed and better conceptualised, they plunge more deeply into the same thing, where previously discovered facts are mobilised, previously developed concepts used, previously hypothesis tried out; but the movement is not from already proven theorems to newly proven ones, but from an awkward fumbling for the most elementary understanding to a supported claim that one has achieved that and surpassed it (2003:164). A study is an advance if it is more incisive, whatever they may mean, than those that preceded it, but it less stands on their shoulders than, challenged and challenging, runs by their side (*ibid.*).

In this study, I do not wish to argue that a 'sprinkling of ICT fairy dust' will magically transform or remedy any critical issues at once (Becta, 2004:17), nor that asynchronous discussions will be the panacea to transform professional development and continuing learning; asynchronous discussions were never meant to replace face to face discussions, as they operate under a distinctly different dynamic (MacKinnon, 2000). As Charles Clarke (Secretary of State for Education and Skills) said, it is not about technology, it is about what technology can do to meet the personal needs of every learner, raising their aspirations and achievement (2004).

On the contrary, I wish to support the claim that computer mediated communication, in its asynchronous mode, takes one into 'writing out of the realm of the solitary craft and into the realm of group effort and cooperation' (Anonymous, 2000:1), and in doing so, it provides an alternative mean of professional development,

encouraging reflection on pedagogy and practice (Stein, 2005). Because, if we have learned, even if only about ourselves, is the time wasted? (Anonymous, 2000). For it is in wondering and questioning that learning begins (Dadds, 1997).

In addition, and in the context of the present empirical investigation, a case study with its focus on depth may reach levels within a single instance, where the divergence between this instance and other numerous cases may be very small and it may be therefore possible to understand the essence of the many within the one instance; another context may interact with the essence to show different manifestations in particular cases but the understanding of the one, and hence the deep understanding of the other, may lead to greater understanding of the many (Butler, 1997:1). Lave and Wenger (1991) appear to have a similar understanding of the generalisability of case study findings:

On the other hand, the world carries its own structure so that specificity always implies generality (and in this sense generality is not to be assimilated to abstractness). This is why stories can be so powerful in conveying ideas, often more so than an articulation of the idea itself. The generality of any form of knowledge always lies in the power to renegotiate the meaning of the past and future in constructing the meaning of present circumstance (1991:34).

I envisage that the present case study will make a contribution to the national and international research agenda for teacher professional development and by raising a number of implications for researchers, practitioners and policy makers in the education arena. For example, recommendations are brought forward for future research on how reflection may be identified and enhanced in an electronic collaborative discourse, and by considering the social dimension of asynchronous on-line networks. Implications for practitioners and policy makers are raised as well, as policy tensions have significant effects on competing priorities for CPD and on teachers' choices about what to focus on within limited time constraints (Daly *et al.*, 2009:24), and they are discussed at length throughout the thesis and mainly in the last chapter.

1.6 Organisation of this Thesis

This thesis consists of four sections and a total of eleven chapters, and as illustrated in the table below:

ROADMAP OF THE THESIS
Section I: Background to the Study and Relevance of the Literature
Chapter 1 Background to the Study
Chapter 2 Mapping the Terrain: A Critical Analysis of the Pertinent Literature
Section II: Principles and Perspectives: An Analysis of the Empirical Investigation
Chapter 3 Social Scientific Research: Principles and Perspectives
Chapter 4 An Analysis of the Empirical Investigation
Chapter 5 Developing the Scheme of Indicators for Determining Evidence of Reflection
Section III: Research Findings: Analysis and Synthesis
Chapter 6 The Two Cases within the Case: Characteristics of the Sample
Chapter 7 Reflective Capital in Context: Findings and Comparative Reflections
Chapter 8 The Impact of Context: Supports and Constraints of Reflexivity in Electronic Communication
Chapter 9 New Digital Geographies: The Semantics and Role of Presence in Electronic Conferencing
Section IV: Synopsis, Enrichments, Final Reflections and Epilogue
Chapter 10 Synopsis and Discussion of the Research Findings
Chapter 11 Enrichments and Epilogue

Table 1.1 Roadmap of the Thesis

1.7 Concluding Remarks

This chapter has offered a preamble to the study portrayed in this thesis by reporting on its research orientation, outlining the pertinent research questions, and discussing the context, relevance and significance of the study. An overview of the thesis, in terms of its sections and its in-built chapters, has also been presented.

The chapter that follows builds on the present chapter by critically examining the pertinent literature and explicitly illustrating the significance of this study in terms of the implications it raises for the research community.

Chapter 2

Mapping the Terrain: A Critical Analysis of the Pertinent Literature

2.0 Introduction

Kidd (1959) has argued that the research worker needs a set of assumptions as a starting point to guide what he does, to be tested by experiment, or to serve as a check on observations and insights; without any theory, researcher activities may be as aimless and as wasteful as the early wanderings of the explorers in North America (1959:134-135). Knowledge of theory always aids practice (ibid.).

What's more, studies do build on other studies, not in the sense that they take up where the others leave off, but in the sense that, better informed and better conceptualised, they plunge more deeply into the same thing; previously discovered facts are mobilised, previously developed concepts are used, previously hypothesis are tried out:

The movement is not from already proven theorems to newly proven ones, it is from an awkward fumbling for the most elementary understanding to a supported claim that one has achieved that and surpassed it. A study is an advance if it is more incisive – whatever they may mean – than those that preceded it; but it less stands on their shoulders than, challenged and challenging, runs by their side (Geertz, 2003:164).

Hereto, this chapter presents a critical analysis of the pertinent literature in the context of the present empirical investigation. I start the discussion by identifying the parameters of the present study within the landscape of technological developments in the science of education and reporting on the relevant literature.

Next, I present a critical analysis of the concept ‘reflection’, raising possible implications for the validity of contemporary taxonomies and tools for its ‘assessment’, and by illustrating the theoretical background employed in this study for identifying evidence of reflection. The ‘Scheme of Indicators for Determining Evidence of Reflection’, which emerged during the analysis of the empirical data, is also introduced.

What follows is an overview of the current developments in relation to ICTs and teacher education, making reference to the emerging model of ‘on-line professional development’. The concept of computer mediated communication is discussed, and the interplay between its asynchronous mode and reflection is examined. The social dimension of asynchronous mediated communication is also considered. Finally, attention is drawn to the emerging concept of the ‘on-line learning community’ in the context of professional development, alongside relevant inferences to be taken under consideration.

2.1 Where we are in History: The History of the Present

Since the introduction of the computer into education in the 1970s, researchers have investigated its effects on students, teachers, and learning environments (Pollard and Pollard, 2004:145); however, in the past decade or so, the study of the computer as an instructional delivery medium has been expanded to investigating technology as ‘a transformational tool and an integral part of the learning environment’ (Fouts, 2000:9). But the initial enquiries go a long way back.

It has been over 40 years since Licklider (1960), in a paper entitled ‘Man-Computer Symbiosis’ published as early as the 1960s, provided a guide for decades of computer research to follow; in that paper, he predicted that ‘Man-computer symbiosis’ is an expected development in cooperative interaction between men and electronic computers:

The hope is that, in not too many years, human brains and computing machines will be coupled together very tightly, and that the resulting partnership will think as no human brain has ever thought and process data in a way not approached by the information-handling machines we know today (1960:1-5).

He also felt that in a few years men will be able to communicate more effectively through a machine than face to face; it was his firm belief that we are entering a technological age in which we will be able to interact with the richness of living information, and not merely in the passive way that we have become accustomed to using books and libraries, but as active participants in an ongoing process, bringing something to it through our interaction with it, and not simply receiving something from it by our connection to it (*ibid.*).

Four decades later, Sir John Daniel (UNESCO), in speaking of the contemporary educational practices and the new communications mediums, appears to be rather sceptical, making reference to the invention of blackboard to articulate matters of impact and ubiquity:

In 1857, Josiah Bumbridge hailed the inventor of the blackboard as one of the greatest benefactors of mankind, adding that the blackboard had created a revolution in education comparable to the introduction of printing with moveable type. During the course of the 20th century, each new communications medium was greeted with similar hyperbole; radio, film, television, programmed learning, computers, and the Internet were heralded in turn as the basis for an educational revolution comparable to the Gutenberg revolution. At the dawn of the 21st century, as we review educational practice around the world, Bumbridge's statement still has the most evidence to support it; no other educational technology yet comes close to the blackboard in impact or ubiquity (Vrasidas, 2002:ix).

Salmon (2000), on the other hand, in arguing for the gains of ICTs, explains that contemporary drivers in education are many and complex and, as borders and boundaries between physical locations, disciplines and levels are reducing, and sometimes disappearing, the use of information and communication technologies (ICTs) to support easy access to learning is often a central tenet of educational missions; furthermore, she emphasizes the need for investment in the role of human intervention to harness the technology:

Some countries like Australia, forged ahead using leaders and champions to show direction, whilst in others, such as the UK, government initiatives have promoted new institutional forms or technological systems approaches. Naturally, the allure of technology has received the lion's share of attention; however, although the ideas of increasing access, participation, skills and competencies for new forms of societies of the 21st century are at the heart of many intentions, the investment in the role of human intervention and support to harness the technology into the service of teaching and learning has been meagre by comparison (2000:x-xi).

In a similar vein, Vrasidas (2002) argues for the need to 'provide perspective' by observing how students use new media and analysing their activity in the context of what we know about effective learning; for just as promoters of new learning medium tend to overstate its importance, so the scholars of specific areas of education tend to exaggerate their distinctiveness (2002:ix-x). Is distance learning an approach to education that deserves its own conceptual framework, or is it merely a subset of wider education theory?; with the growth of hybrid combinations of distance learning and conventional teaching under names like 'flexible learning' and 'distributed learning', this becomes an important question (*ibid.*).

Balint Magyar (Minister of Education in Hungary) appears to be in agreement when she argues that many experts are, unfortunately, still convinced that the educational challenges of the 'Age of Information' can be identified with knowledge about hardware, software and applications; the essence of this culture is, however, digital literacy, i.e. the retrieval, storage, processing and interpretation of digitally transmitted information and, therefore, in the focus of teaching about ICT today we find the 'user', not the 'info-specialist' (Karpati, 2004:5).

Having offered a succinct overview of where we are in history in terms of technological developments and subsequent debates about their role and potential in the science of education, I will now turn to consider in more detail the pertinent to the research enquiry literature.

2.1.1 Setting the Scene: Overview of the Pertinent Research Findings

As the reader might recollect, the central foci of the present enquiry have been to examine whether, and if yes, how reflective thinking – as a meaningful professional development objective – is promoted through collaborative asynchronous computer

mediated communication (ACMC) by comparison with traditional face to face discussion.

Contemporary research literature touts the potential for development of deep learning and critical thinking skills through on-line threaded discussions; however, for the most part, this has not yet happened at a high level or to any great extent, and further research is needed to investigate the nature of this disparity (Maurino, 2006:14). To justify his point of view, Maurino convincingly goes on to explain:

A confounding problem appears to be a mismatch between the target groups under research and the actual on-line student population, that is, current research is predominated by examination of ... graduate level on-line classes; however, the typical on-line student is not a graduate student ... and therefore, the changing nature of on-line students must be taken into consideration in future research. The preponderance of the research is also of a quantitative nature, where class databases are counted, summarized, categorized and graphed; there is a need for rich, in depth data which would call for research of a qualitative nature (ibid.)

Indeed, the synopsis of the relevant literature and contemporary research findings illustrated in the extensive table that follows (in order to aid the reader's comprehension of my imminent arguments and for convenience purposes) exemplifies Maurino's arguments beyond doubt:

Synopsis of Relevant Research and Findings

Levels: G = graduate; U = undergraduate; P = professional; HS = high school

Author	Level	Discipline	Purpose	Methodology	All On-line?	Findings
Anderson 2001	G	Education Health	Create a model to evaluate teacher presence	Content analysis of class transcripts	Y	Tool created is useful because of its simplicity and diagnosis capacity.
Arbaugh 2000	G	MBA	Determine factors that make on-line courses an effective learning experience	Survey of students	Y	Student learning is related to instructor efforts to create interactive environment. Instructor must foster intimacy and provide interesting discussions for learning.
Armitt 2002	G	Health	Evaluate SYNCHRO NOUS communication to develop deep learning	Transcript analysis using SOLO	Y	Deep learning does NOT happen spontaneously. Groups that interact effectively develop cognitively more quickly.
Aviv 2000	U	Computer Science	Evaluate ALN performance	Content analysis 2 weeks ALN discussions	N	High level reasoning can result IF there is effective cooperation and group dynamics. Actual results are difficult to measure.
Beaudoin 2002	G	Education	Determine if non-participants and low level participants are learning	Survey of low level participating students	Y	Learning occurs behind the scenes. Some learners are more reflective and need less stimulation and interaction.
Bullen 1998	U	CIS	Find factors that affect critical thinking and participation	Student interviews	Y	Effectiveness is dependent on student characteristics, course design, and facilitation. It is not a simple task.

Chen Zimitat 2004	G	Computer Science	Determine quality of higher order learning from on-line SCMC discussions compared to F2F blended class	Content analysis of transcript using SOLO	Y for on-line class	More discussion in on-line class. Deeper understanding shown in F2F blended class.
Ellis 2004	U	E-commerce	Evaluate what students learn through discussion and how they learn it	Compared F2F and on-line discussions	Y for on-line class	On-line students more reflective due to control over time. Reflection not found in F2F. Significant misunderstanding about goals obscured purpose of discussion. Wide variety of levels of participation. Participation quantity and quality attributed in a large part to instructor/tutor.
Eustace 2003	G	Policy studies	Find Educational value of on-line SYNCHRO NOUS participant interaction	Examined chat room transcripts	Y	Peer dialogue provides mechanism for deep learning experiences. Can be combined with problem and project based learning activities. Analysis of chat records by students can promote peer review and reflective practice
Garrison Anderson, Archer 2004	G	Education Health	Judge nature and quality of on-line critical discourse	Analyzed and categorized message units for three one-week exchanges	Y	Critical, practical inquiry can be created and supported on-line with appropriate teaching and social presence. In this particular study, there were not many higher level message units.

Goodell 2005	G	Education	Describe attempts to develop a community of practice among students engaging in on-line dialogue	Analyzed Web CT records and transcripts	N	Only 75% of students participated. Students did not respond to each other. Postings were perfunctory. Instructors did not participate. There was no recognition of the benefits of on-line discussion.
Guzdial Carroll 2002	U	English Computing	Determine learning that occurs when participation is low in on-line discussions	Student interviews	N	Learning arises from construction of a shared understanding. Students don't have to participate if others present their questions and explanations. Learning arises from the inquiry and reflection even if no posting occurs.
Guzdial Ludoice Realff Morley Carroll 2002	U	Math, Science, Computer science	Find reasons for the failure of on-line collaboration in certain areas	Interviews Questionnaires	N	Students and faculty did not participate due to cultural issues in areas of engineering, mathematics, and computer science. Did not see the need for collaboration, did not feel it was appropriate for these disciplines. Felt lecture based, competitive classes more appropriate.
Hara Bonk Angeli 1998	G	Education Psychology	Examine supplementary on-line discussions	Content analysis of teacher and student messages	N	Students posted only the required number of postings. Postings were cognitively deep, embedded with peer references, and lengthy. Comments were highly dependent

						on the directions of the discussion starter.
Hawkes, Romiszowski 2001	G	Education	Compare F2F discussions with on-line discussions for critically reflective discourse	Content analysis	Y for on-line	On-line dialogue was less interactive than F2F. On-line dialogue was more reflective.
Heckman Annabi 2002	G	Education	Compare F2F and ALN discussions	Content analysis of discussions	N	When combined with case studies, ALN discussions can generate cognitive levels equal to a F2F discussion.
Hung Nichoni 2002	-		Analyze peer apprenticeship learning concept to foster working relationships between novices and masters in an activity context	Case study ethnography observe after school learning clubs programs	N	Social learning techniques help students cooperate and collaborate. Learners then move from peripheral to central participation. "Lurking" is a necessary step in getting familiar with culture.
Kanuka 2002	P	Education	Explore how teaching and learning principles can be applied to facilitate higher levels of learning in distance education	Surveyed experts and scholars in field of distance education	-	On-line discourse is often ineffective because instructors do NOT facilitate guided discourse effectively. Collaborative group work and threaded discussions can be combined with case studies to help students understand complex problems.
Kanuka Anderson 1998	P		Understand and assess on-line learning	Used a constructivist interaction analysis model and a student	-	Overwhelming number of messages were lower phase of knowledge

				telephone survey		construction – sharing/comparing. Participants valued the form for sharing and receiving information – not constructing new knowledge. Little social discord.
Kehoe 2005	U	Business	Find perceptions of learners on flexible delivery methods	Student survey	Y	50% of students would prefer traditional lecture mode. They took on-line courses for practical reasons. On-line is not a replacement, but a supplement. 37% were reluctant to participate in on-line discussions. 33% said they would not come to a F2F class if points were not awarded for attendance and participation.
Kippen 2003	-		Examine relationship of reflection to deep learning	Theoretical – analyzed theories of learning and connected them to teacher reflection on-line	-	Reflection can promote deep learning on-line. Students are more honest in on-line discussions. The teaching environment on-line must be adapted.
Klemm Snell 1996	U		Compare student groups and tangible work products to threaded topic discussions	Observed educational listservs and threaded discussions	Y	Threaded discussions do not encourage team building or group processes. There are lurkers and superficial participants. Learners should produce tangible products – not just give opinions.
LaPointe 2003	U	Varied	Determine variables influencing peer	On-line questionnaires	Y	Found 5 variables that influenced interaction and outcomes: self –

			interaction and learning outcomes in CMC			construal, teaching presence, task design, prior CMC experience, and course requirements.
Li 2003	U	Human Environment	Study problems of first time on-line students	Interviews with students and one teacher Document review	Y	Only 44% of students participated regularly. Students were initially confused, frustrated, and not comfortable. Most changed attitudes by the end of the semester.
Mason 1991	Prof	Mgmt Skills	Determine the nature of moderating skills needed	Conference messages Interviews		The moderator must play several roles including organization, social and intellectual.
Meyer 2003	G	Education	Compare experiences of F2F discussions with threaded discussions Evaluate threaded discussions for higher order thinking skills	Content analysis using Garrison's 4 cognitive processing categories Student interviews		Critical thinking did occur, but 51% was at the exploratory level. Faculty need to be more directive in guiding discussion. On-line was more reflective but students found it lacking in speed, spontaneity, and energy.
Mortera-Gutierrez 2002	-	Varied Discipline	Analyze design strategies and interaction of instructors.	Unstructured interviews with 3 instructors	-	Instructors have different sets of interaction than students. The pragmatic approach of the instructor affects interaction, skills, strategy, etc.
Murphy Coleman 2004	G	Education	Find purpose and value of on-line discussions	Content analysis of threaded discussions	Y	Some students dominated conversation leaving others excluded and alone. Some felt inadequate when no one responded to their posting.

						Shift of control from teacher is not beneficial if passed to dominating students. Discussion can support more reflection, constructions and critical thinking, but these benefits may NOT be achieved. Students may misunderstand, misinterpret, and not participate.
Newman Johnson Webb Cochrane 1997	U	Info Mgmt	Compare F2F seminar with computer conferencing Evaluate discussion as a means of promoting deep learning and critical thinking	Content analysis Student questionnaires	N	Similar amounts of critical thinking in both classes. Higher depth in computer conferencing. Students in that class brought in more outside information from personal experience, other sources, etc. F2F was better for creative problem exploration and idea generation since it was more spontaneous.
Picciano 2002	G	Education	Examine on-line performance in relation to student interaction and sense of presence	Student survey Discussion board statistical analysis	Y	No difference in outcome for low, moderate, and high participants.
Rourke et al. 1999	G	Education	Determine implications and benefits of assessing social presence	Analysis of discussion transcripts	Y	Fairly high levels of social presence are necessary to support development of deep and meaningful learning. Further study is needed to determine the

						optimal amount. Too much social presence may be detrimental.
Sherry 2000	HS		Create guidelines for on-line conversations	Analysis of on-line conversation Student focus groups	N	Each conversation should have a published goal and guidelines. Combine with creating a project. Make supportive comments.
Singleton 2003	G	Education	Gain insight into learner perception of on-line learning	Student survey	Y	Students felt course design was the most important factor. Challenges were lack of community, time management and unclear goals.
Tolmie Boyle 1999	G	Education	Compare F2F seminar with on-line seminar	Examination of conference records Student logs of activity and contact Student questionnaire	N	Computer conferencing was used for information exchange. Overall usage was not high. There was a particular need for shared purpose.
Trollip Blignaut 2003	G	Business	Create a taxonomy to measure teacher presence	Analysis of teacher postings in threaded discussions Survey of decision makers	Y	Categorized instructor postings as administrative, affective, other, corrective, informative and Socratic. Found a wide range of expectations as to ideal performance.
Vonderwell 2002	U	Education	Analyze student perceptions regarding interaction and quality of learning on-line	Student interviews Analysis of email Analysis of discussion transcripts	Y	An increase in number of messages does not necessarily increase quality of learning. Students felt on-line was less personal and missed the 1 to 1 with teacher. They wanted faster feedback. Students felt they did not learn from

						each other since they all had similar answers.
Woods 2002	G	Organizational. Communication	Find out if more instructor initiated personal emails outside of class discussion would affect student perceptions	Divide class in groups Each group received a different number of personal emails from instructor Student survey	Y	No difference in rating faculty/student relationships.

Table 2.1 Synopsis of Relevant Research and Findings (Maurino, 2006)

I concur with Maurino that a) most of the research undertaken appears to focus on examination of undergraduate and graduate level on-line classes, with limited research undertaken in the context of practitioners’ development, and that b) the preponderance of the research undertaken is also of a quantitative nature. However, the literature illustrated in the table above highlights another pertinent matter of need for urgent critical attention by the research community, as it raises possible implications concerning research design matters and future research priorities, unfolding concerns regarding the validity of contemporary research findings and the gravity of any subsequent theories originated by these research outputs.

Specifically, one observes that there is a proliferation of terminology employed in the ‘purpose’ and ‘findings’ of these studies, such as ‘effective learning experience’, ‘deep learning’, ‘high level reasoning’, ‘critical thinking’, ‘quality of higher order learning outcomes’, ‘deeper understanding’, ‘higher order critical thinking’, ‘critically reflective discourse’, and ‘reflection and deep learning’; these terms appear to be used often interchangeably and just what is meant, for example, by ‘reflection’ or ‘critical thinking’ seems to be not a matter of total agreement (Kennedy *et al.*, 1991:13).

In other words, it appears that these terms are often loosely employed, and even more often weakly defined, if at all, adding to one’s confusion rather than clarifying one’s thinking and when, for example, one is reviewing the literature, wishing to make comparative or evaluative judgements about where we are in history, what we already know for sure (if anything), and what needs to be done next.

Ennis (1995) appears to have reached similar conclusions when, over two decades ago, assessed the state of knowledge about ‘critical thinking’ and found a number of areas in need of research, including the ‘further refinement and definition of the concept [critical thinking] (1963:18). Despite the interest in and importance of ‘reflection’ and ‘critical thinking’ though, these areas are still in need of further investigation (Kennedy *et al.*, 1991:26). To this end, Kennedy *et al.* (1991) eloquently ask:

How broadly or narrowly reflective thinking should be defined? What is the relationship between reflective thinking, critical thinking and higher order thinking? What common vocabulary would be most fruitful across fields? There is disparity in usage of such terms ... and issues concerning epistemological subject-specificity are still unresolved (*ibid.*).

Two decades later, Ottesen (2007) also appears to be in agreement when he asks what this ‘reflection thing’ is, and why and how it is an important issue in teacher education (2007:33); in fact, when researching the literature meticulously, one finds out that a number of other researchers have raised similar questions (Calderhead, 1989; Zeichner, 1994; Korthagen, 2001; Loughran, 2002; Birmingham, 2004):

What kind of thoughts qualify as reflection? How can reflection be assessed? How can it be talked about? How can it be researched to determine its effect on [teachers’] learning? (*ibid.*).

Surely, without a clear sense of what we mean by reflection, it is difficult to research the effects of reflective teacher education and professional development on teachers’ practice and students’ learning, an essential question that must be addressed (Rodgers, 2002:843). For this, I think it is imperative, and before I proceed with any further discussion in this thesis, that I exemplify how the notion of reflection is employed in the present empirical investigation. First, I will offer a succinct overview of theories and models of ‘reflection’ adopted in the wider literature, and then I will discuss how the concept is adopted in the present study.

2.2 Teacher Reflection in a Hall of Mirrors

The concept of 'reflection' holds the position of an academic virtue and source of privileged knowledge (Lynch, 2000:26). During the last decade or so, the interest in reflection has grown massively in Anglo-Saxon pedagogy and has become a key concept in discussions about teacher education and the teaching profession (Bengtsson, 1995:23). As Newman (1996) says 'there can be little doubting of the significance of 'reflective practice' in teacher education' (1996:297).

The terms 'reflection', 'reflective thinking' and 'reflective practice' are entrenched and abound in the literature and discourses of teacher education and professional development (Loughran, 2002; Rodgers, 2002; Birmingham, 2004; Admiraal and Wubbels, 2005), and reflection has been advanced as an ideal in numerous teacher education programs (Ottesen, 2007:31). This development was related to the call for the professionalization of teaching and teacher education (Korthagen, 1993:317). Systematic and rational decision making lies at the very heart of professionalism (Kinchleoe, 1990; Yinger, 1986); this explains not only the popularity of reflection but also the way in which the term has been interpreted by various authors (ibid.).

The view of persons and human action, which has long dominated Western culture, was perhaps most famously articulated by Gilbert Ryle in his 1949 book *The Concept of Mind*, as one holding that intelligent action requires deliberate thought; the roots of this emphasis appear to go back a very long way though, at least to the dualism of Descartes and his medieval forebears, which separated mind, the contemplative vehicle of thought, from body, the means of action (Tomlinson, 1999:405-406).

John Dewey (1933) is an early advocate and pioneer in the study of thinking; he coined the term 'reflective thinking' to refer to 'the kind of thinking that consists in turning a subject over in the mind and giving it serious consecutive consideration' (1933:3). He stressed the idea of a problem solving focus to learning, emphasizing the necessity for education to go beyond the teaching of subject matter alone and to address the teaching of thinking (Kennedy *et al.*, 1991:13).

Dewey (1916) also asserted that reflective thinking is a basic principle for organizing the curriculum: processes of instruction are unified in the degree in which they center in the production of 'good habits of thinking' (1916:163). Moving to contemporary times, the Harvard Committee, in 'General Education in a Free

Society’, proposed three educational abilities that ‘should be sought above all others’, one of which is ‘to think effectively’ (Idol *et al.*, 1991:11-12).

Speaking of thinking effectively, Nickerson’s list of ‘Characteristics of a Good Thinker’ (1987) contains some important dispositions not mentioned frequently in other lists; they include the tendency to transfer learning to new situations, and recognition that real-world problems are complex and not solved with one simple answer (Kennedy *et al.*, 1991:14). Glaser (1941) portrays disposition as part of a way of life when he argues that persons who have acquired a disposition to ‘want’ evidence for beliefs, and who have acquired an attitude for reasonableness, have also acquired something of a way of life, which makes for more considerate and humane relationships (1941:6).

Reflective thinking has been closely associated with ‘critical thinking’ as well; McPeck (1981) has defined critical thinking as ‘the prosperity and skill to engage in an activity with reflective scepticism’ (1981:8) and Ennis (1985) as the ‘reasonable, reflective thinking that is focused on deciding what to believe or do’ (1985:46).

However, despite the fact that the term ‘reflection’ is not new, it still raises exciting debates and discussions as to its constituents, defining attributes, development and measurement; in fact, some refer to it as comprising a ‘complex array of cognitively and philosophically distinct methods and attitudes (El-Dib, 2007:24-25).

2.2.1 Reflective Teacher Education and Professional Development

As early as in 1968, Hunt and Joyce encouraged schools of education to embrace a reflective approach to teaching; they suggested that teachers who were able to reflect upon and critique their own teaching were most likely to develop a high conceptual understanding of their professional goals, the needs of their students, and how to accomplish these (Pensavalle and Tyerman, 2006:1). Goodman (1983) also found a reflective component absent, but necessary, in teacher education (Pensavalle and Tyerman, 2006:2). Thinking, particularly reflective thinking or inquiry, is essential to both teachers’ and students’ learning:

The essential point – the inner intent – that seems so seldom grasped even by teachers eager to embrace the current reforms is that in order to learn the sorts of things envisioned by reformers, students must think. In fact, such learning is almost exclusively a product or by-product of thinking (Thompson and Zeuli, 1999 in Rodgers, 2006:842).

Lange (1990) also saw an intimate relationship between reflection and teacher development, arguing that the reflective process allows developing teachers' latitude to experiment within a framework of growing knowledge and experience, giving them the opportunity to examine their relations with students, their values, their abilities, and their successes and failures in a realistic context; it begins the developing teacher's path toward becoming an 'expert teacher' (1990:240-250).

In fact, Clark and Lampert (1985) argued that the findings of their research support the development of a conception of teaching as a 'reflectively professional enterprise'; for both novices and experienced teachers the proposed goals of applying their research would be to promote understanding of teaching as a design profession and to empower teachers in self-directed professional development efforts (1985:5).

Sanders and McCutcheon (1986) suggested that pre-service teachers must have the opportunity to learn to organize multiple factors and practice reflection through the interpretation of their actions, and Schon (1987) wrote that beginning teachers can be coached through challenging situations by peers and professors with the resulting 'reflection' analyzed for the construction of new knowledge; Valli (1992) presented reflection as a tool for assisting teacher education students' conceptualization of the social problems currently confronting the public schools and undermining the development of best practices, and viewed the promotion of social justice as a critical component of reflection, rejecting it as a process to merely support the technical and mechanical aspects of instruction; Hatton and Smith (1995) concluded that, while an array of approaches have been used to promote reflection, there is little research evidence to confirm how effective any of these strategies actually are (Pensavalle and Tyerman, 2006:2-4).

Pennington (1995) has argued that teacher change and development require an awareness of a need to change (1995:706). She further defined teacher development as 'a metastable system of context interactive change involving a continual cycle of innovative behaviour and adjustment to circumstances', seeing two key components of change: innovation and critical reflection (1995:725).

Richards (1990) also saw reflection as a key component of teacher development, arguing that self-inquiry and critical thinking can help teachers move from a level where they may be guided largely by impulse, intuition, or routine, to a level where their actions are guided by reflection and critical thinking (1990:5). In referring to critical reflection, in an interview with Farrell (1995), Richards argues:

Critical reflection refers to an activity or process in which experience is recalled, considered, and evaluated, usually in relation to a broader purpose. It is a response to a past experience and involves conscious recall and examination of the experience as a basis for evaluation and decision-making and as a source for planning and action (1995:95).

In this context, Hatton and Smith (1994) argue that, although in the past decade the terms ‘reflection’ and ‘critical reflection’ have increasingly appeared in descriptions of approaches to teacher education, it is clear that the terms are often ill-defined, and have been used rather loosely to embrace a wide range of concepts and strategies (1994:33). Ten years later, Ottesen (2007) declares that, despite its apparent ubiquity in research conducted and reported, the term reflection remains problematic encompassing a range of theoretical and practical approaches (2007:31).

2.2.2 The Concept of Reflection: Theories and Models, Constituents and Defining Attributes

When looking at the etymology of the word ‘reflection’, one discovers that it has a Latin origin, i.e. the word ‘reflection’ originates from the Latin verb ‘reflectere’ which means bend or turn (‘flectere’) backwards or back (‘re’) and is used broadly (French ‘reflexion’, German ‘Reflektion’, Swedish ‘reflektion’) with a common meaning that doesn’t seem to have changed much over time (Bengtsson, 1995:26).

In physics, the term is used in optics to describe the reflection of light against a smooth surface, such as a mirror and, where humans are the object being reflected, this means a physical self-mirroring; in psychology, aspects of consciousness of self have been tested by means of mirrors, not only on animals such as cats or chimpanzees but human infants have been placed in front of mirrors to find out if and when they recognize that the reflected image is of themselves; in literal mirroring, it is

assumed that the viewer sees an exact image of that which is being reflected (Brown and McCartney, 1999:24).

The notions 'reflection', 'reflective practice', and 'reflective practitioner' are entrenched and abound in the literature of teachers' professional development, with reflection being advanced as an ideal in numerous teacher education programs (Ottesen, 2007:31). However, the concept remains rather vague, although Schon's notion of the 'reflective practitioner' seems to be at the core of several understandings (ibid.).

Regardless of how it is defined, the seminal impact of Dewey (1910/1977) and Van Manen (1977, 1991) has strongly influenced the development of a variety of understandings and perspectives on reflection in education (Calderhead, 1987; Zeichner, 1987; Grimmet and Erickson, 1988; Zeichner and Tabachnick, 1991; Russell and Munby, 1992; Valli, 1992; Korthagen, 2001 in Ottesen, 2007:31-32).

Nearly 100 years ago, John Dewey articulated his concept of how we think in a book by the same name (*How We Think*, 1910/1933); he identified several modes of thought, including belief, imagination, and stream of consciousness, but the mode he was more interested in was reflection (Rodgers, 2002:844). Indeed, it was Dewey (1933) who argued that reflection involves not simply a sequence of ideas, but a consequence, a consecutive ordering in such a way that each determines the next as its proper outcome, while each outcome in turn leans back on, or refers to, its predecessors (1933:4), seeing reflective action as entailing active, persistent, and careful consideration of any belief or supposed form of knowledge in light of the grounds that support it and the further consequences to which it leads (1933:9).

Dewey has argued that reflection comprises of several steps including doubting and feeling perplexity in relation to a given situation, tentatively interpreting the possible meanings of the situation or factors involved in it and their consequences, examining/exploring/analysing all considerations that might help clarify the problem, elaborating the preliminary hypotheses, and deciding a plan of action (El-Dib, 2007:25).

For Schon (1983, 1987) reflection involves some form of experimentation, in which practitioners constantly interpret situations by means of problem-setting and problem-solving, a process which can lead to a reframing of the situation (Korthagen and Wubbels, 1995:52). According to Schon (1983), a practitioner's reflection can serve as a corrective to over-learning; through reflection, he can surface and criticize

the tacit understandings that have grown up around the repetitive experiences of a specialised practice, and can make new sense of the situations of uncertainty or uniqueness which he may allow himself to experience (1983:61).

Ross (1987) related reflection to rationality and responsibility, arguing that reflection is a way of thinking about educational matters which involves the ability to make rational choices, and to assume responsibility for those choices; in this respect, she appears to see the teacher as a professional who is accountable for the way he or she teaches (Korthagen and Wubbels, 1995:52).

Pennington (1992) connected development to reflection, where reflection is viewed as the input for development, while also reflection is viewed as the output of development (1992:47). She also proposed a reflective/developmental orientation as means for improving classroom processes and outcomes, and developing confident, self-motivated teachers and learners (1992:51).

Van Manen (1995) defined reflection as the process by which teachers engage in aspects of critical thinking such as, careful deliberation and analysis, making choices, and reaching decisions about a course of action related to teaching (1995:9). He further maintained that a proper sequencing of such reflective steps make up reflective experience, which in turn can lead to analysis and evaluation, then to further reflective action (1995:34).

In a review of the literature on reflective teaching, one discovers that there is much variance in the definition as well (Farrell, 1998:12). In 1977, Van Manen's article 'Linking ways of knowing with ways of being practical' started a process of considering the importance of reflection in teaching, learning and practice, which has been carried on by Donald Schon's influential books on the topic of reflection, i.e. *The Reflective Practitioner* (1983), *Educating the Reflective Practitioner* (1987) and *The Reflective Turn* (1990) (Brown and McCartney, 1999:17).

Based on Dewey's notion of reflection, Bartlett (1990) suggested a cycle for the process of reflective teaching containing the five elements of mapping, informing, contesting, appraising, and acting. Wallace (1991), on the other hand, adapted Schon's concept of reflective practitioners and proposed a reflective mode of professional education/development, which highlights the continuing process of reflection on 'received knowledge' and 'experiential knowledge' in the context of professional action (practice) (1991:56).

For Schmidtz (1994), reflective teaching, *_inter alia_*, is a concept about how teachers learn to teach (or learn to improve their teaching) and (more importantly) about how they ought to learn to teach (or improve their teaching) (Blunden, 1996: 19); how teachers learn to teach, or improve their practice, is a pragmatic matter, but how they ought to learn to teach, or improve their practice, is a moral matter (Schmidtz, 1994:226-251). Stanley (1998) proposed a framework for reflective teaching practice in terms of five phases: engaging with reflection; thinking reflectively; using reflection; sustaining reflection; and practicing reflection (1998:584).

The table that follows illustrates a summary of different approaches to reflective teaching, including details of the object of reflection, followed by a brief discussion of the different approaches illustrated:

Summary of Different Approaches to Reflective Teaching	
Reflection Type and Author	Content of Reflection
Technical Rationality (Schulman, 1987; Van Manen ,1977)	Examining one’s use of skills and immediate behaviours in teaching with an established research/theory base.
Reflection-in-action (Schon, 1983, 1987)	Dealing with on-the-spot professional problems as they occur. Thinking can be recalled and then shared later.
Reflection-on-action (Schon, 1983, 1987; Hatton and Smith, 1995; Gore and Zeichner, 1991)	Recalling one’s teaching after the class. Teaching gives reasons for his/her actions/behaviours in class.
Reflection-for-action (Killon and Todnew, 1991)	Proactive thinking in order to guide future action.
Action Research (Carr and Kemmis, 1986)	Self-reflective enquiry by participants in social settings to improve practice.

Table 2.2 Summary of Approaches to Reflective Teaching (Farrell, 1998)

The first type of reflection, technical rationality, examines teaching behaviours and skills after an event, with the object of reflection being on effective application of skills and technical knowledge in the classroom (VanMannen, 1977), focusing on cognitive aspects of teaching (Schulman, 1987); the second notion of reflective practice is called reflection-in-action (Schon, 1983, 1987) and is concerned with

thinking about what we are doing in the classroom while we are doing it, with the end result being reshaping what we are doing; the third notion of reflection is reflection-on-action, which deals with thinking back on what we have done to discover how our knowing-in-action may have contributed to an unexpected action (Schon, 1987; Hatton and Smith, 1995), including reflecting on our reflecting-in-action, or thinking about the way we think; the fourth notion, reflection-for-action, is proactive in nature and it is the desired outcome of both previous types of reflection as we undertake reflection, not so much to revisit the past or to become aware of the metacognitive process one is experiencing (both noble reasons in themselves) but to guide future action (the more practical purpose) (Killon and Todnew, 1991:15); finally, the fifth notion of reflection is connected to action research, i.e. the investigation of those craft-knowledge values of teaching that hold in place our habits when we are teaching, and it concerns the transformation of research into action (McFee, 1993) (Farrell, 1998:10-17).

Historical Influences and Political Reverberations

On the whole, although reflective practice is an accessible notion and has achieved great popularity as a means of synthesizing thinking and doing, it is contested in terms of its conceptualization and application; in addition, it is not neutral and value free, but affected by personal, political and professional factors that impact upon practitioners (Issitt, 2003:173).

For example, Hatton and Smith (1995) point out that the concept of critical reflection implies ‘the acceptance of a particular ideology’ (1995:35); this view of critical reflection in teaching also calls for considerations of moral and ethical problems (Adler, 1991; Gore and Zeichner, 1991; VanMannen, 1977), and it also involves ‘making judgments about whether professional activity is equitable, just, and respectful of persons or not’ (ibid.). Therefore, the wider socio-historical and political-cultural contexts can also be included in critical reflection (Zeichner and Liston, 1987; Schon, 1983, 1987 in Farrell, 1998:15).

In a similar context, Fendler (2003) argues that, although recent literature portrays reflection as a wholly beneficial practice for teachers (Artzt and Armour-Thomas, 2002; Margolis, 2002; Mayes, 2001; Moore, 2002; Rock and Levin, 2002; Smyth, 1992; Zeichner, 1996), significant critique of reflection has come from several directions (MacNay, 1999; Smyth, 1992; Zeichner, 1996); for example, Zeichner’s

(1996b) critique of reflection suggests four themes that explain why some reflective practices tend to undermine their intended purposes for teachers, i.e. the privilege of university research over teacher research, an emphasis on teaching techniques and classroom management, disregard of the social and institutional context of teaching, and individual reflection instead of collaborative sharing (Fendler, 2003:16):

The term reflection has become a slogan around which teacher education all over the world have rallied in the name of teacher education reform ... one of the most notable characteristics of this emerging literature on reflective inquiry in teaching and teacher education is its 'ahistorical' nature (Zeichner, 1992:161-162).

Despite the lofty rhetoric surrounding efforts to help teachers become more reflective, in reality, teacher education has done very little to foster genuine teacher development and to enhance teachers' roles in school reforms (Zeichner, 1996b:201).

Another criticism refers to the degree to which reflective practices serve to reinforce existing beliefs rather than challenge assumptions; some reflective practices may simply be exercises in reconfirming, justifying or rationalizing preconceived ideas, with Loughran (2002) noting that 'rationalization may masquerade as reflection' (2002:35) (Fendler, 2003:16). In a similar vein, Korthagen and Wubbels (1995) have argued that, in a comparative study they carried out, they found no indication between reflexivity and inclination towards innovation (1995:69).

The degree to which reflective practices tend to provide instrumental analyses of teaching and ignore issues of social justice has been another major focus in the critical research on reflection; Vallis's (1992) edited book, *Reflective Teacher Education*, includes six chapters that criticize the kinds of reflective practices that are designed to help teachers be more efficient in delivering information or raising students' test scores, the so-called 'technical' or 'instrumental' approach to reflection (Fendler, 2003:16).

Ottesen (2007) has argued that the ideals or purposes of reflection in education are as manifold as the term itself, with a proliferation of terminology employed such as the development of self-monitoring teachers, teachers as experimenters, teachers as researchers, teachers as inquirers, teachers as activists; in addition, it is not always clear whether reflection is conceptualised as an exclusively cognitive activity (as a

special case of thinking, or pondering), or what exactly constitutes its relationship to ongoing, past or future events (Ottesen, 2007:32). As Ecclestone (1996) put it, there is a need for the education community ‘to offer ... much clearer accounts of different interpretations and values which underpin reflection and to structure its forms and focuses more coherently than we do at present’ (1996:152).

In this context, Rodgers (2002) has attempted to distil and condense four criteria which, she feels, characterize Dewey’s concept of reflection and the purposes she felt it served (2002:845):

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1. Reflection is a meaning-making process that moves a learner from one experience into the next with deeper understanding of its relationships with and connections to other experiences and ideas. It is the thread that makes continuity of learning possible, and ensures the progress of the individual and, ultimately, society. It is a means to essentially moral ends.
 2. Reflection is a systematic, rigorous, disciplined way of thinking, with its roots in scientific inquiry.
 3. Reflection needs to happen in community, in interaction with others.
 4. Reflection requires attitudes that value the personal and intellectual growth of oneself and of others.
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Table 2.3 The Four Criteria that Characterize Dewey’s Concept and Purposes of Reflection (Rodgers, 2002)

Fendler (2003), on the other hand, argues that these days the meaning of professional reflection is riddled with tensions between Schon’s notion of practitioner-based intuition, on the one hand, and Dewey’s notion of rational and scientific thinking, and that these tensions between intuition and science are combined with Cartesian impulses toward self-awareness and feminist interventions (2003:19).

Schon (1987) had suggested that professional education undervalues practical knowledge and grants privileged status to intellectual scientific and rational knowledge forms that may only be marginally relevant to practical acting:

This is not just an issue of sociology of knowledge. The literature of teaching and teacher education has shown that professional practices of educating cannot be properly understood unless we are willing to conceive of practical knowledge and reflective practice quite differently. It is for this reason that I would like to

raise some questions about the meaning and place of practical reflection in teaching and about the relation between knowledge and action in teaching, the kind of teaching that is educational or pedagogical (Van Manen, 1995:33).

Similarly, the nature of reflective practice, as Hargreaves and other educators envisioned it, involves thinking critically about a wider range of issues than mere technical matters:

Practice is not merely an intentionally structured pattern of individual action, but an expression of values which have been publicly formed and critically developed through a tradition. Practices, in this sense, are inherently social—they are socially constructed, expressing and realizing an idea of the good for humankind through the interactions of the practitioner and others in a particular situation. Practices may thus be distinguished from merely technical instrumental action (Kemmis, 1987:77).

Hannay (1994) appears to be in agreement when she argues that an effective reflective process is characterised by dialogue that focuses on real world versus theoretical problems, involves problem framing rather than simply problem solving, questions past practices, develops alternatives and attempts to identify consequences (Herod, 2003:16). Embodied in the notion of reflective practice in a constructivist environment is a view of teaching and learning as a contextual, dynamic and fluid endeavour, where practitioner and organisational development must necessarily act in an ongoing affair (Fullan, 1995; Guskey, 1995; Hannay, 1994; Wood and Thompson, 1993) (*ibid.*).

Brookfield (1995) also advocated that teachers ought to investigate and question their assumptions and search for multiple perspectives; only this way, they could become critical reflectors (El-Dib, 2007:27). Similarly, Fullan (1995) suggested that education is a moral enterprise (1995:253) and Hannay (1994) proposed that reflective practice involves the moral questions of ‘should’ and ‘ought’ (Herod, 2003:16).

Louden (1992) as well identified a moral or ethical component to reflection; he proposed that there are four general interests in reflection, the first of which is ‘technical reflection’ (found in the pre-professional phase in the focus is on teaching skills and strategies), ‘personal reflection’ (which involves individual introspection about one’s practice), ‘problematic reflection’ (in which practitioners begin to

dialogue collectively about problems that fall outside the technical aspects of the profession) and ‘critical reflection’, in which practitioners question the underlying assumptions of their profession and investigate moral and ethical issues (Herod, 2003:17).

2.2.3 Assessing Reflection: An Overview of Contemporary Assessment Tools and Taxonomies

While pointing out that the focus of the discussions of teacher reflexivity has been given to the definitions and the processes of reflection, most recently discussions have taken place investigating evidence of reflection (Inson, 2004:113).

Fendler (2003) argues that hierarchical orders of reflection are incorporated into educational research when it is assumed that a one-step removed examination of events will afford a more intelligent and ‘reflective’ account; some teacher education research uses the taxonomy of reflective thought found in Pultorak (1993) and Van Manen (1977) or Collier’s (1999) three levels of reflexivity, in which the first category is descriptive, the second makes references to context, and the third takes an ‘objective’ perspective (2003:20).

Another major historical source on critical thinking has been Bloom’s cognitive taxonomy of educational objectives (1956), with the top three categories ‘analysis’, ‘synthesis’, and ‘evaluation’ often equated with ‘critical thinking’; some educators though have been dissatisfied with Bloom’s taxonomy because it does not offer much useful, practical guidance for instruction (Ennis, 1981; Furst, 1981; Nelson, 1981; Paul, 1985; Seddon, 1978 in Kennedy *et al.*, 1991:13).

For Admiraal *et al.* (1998) the measurement of student teachers’ reflection was based on the process of reflection described by Korthagen (1985), including the five successive phases of ‘action’, ‘looking back on the action’, ‘awareness of essential aspects’, ‘creation of alternative models of actions’ and ‘trial’ (1998:66).

Other studies have ranked student responses using a scale or taxonomy such as the three levels of reflexivity defined by Mezirow (1981), Biggs’ SOLO Taxonomy (1982) or Garrison’s four Cognitive Processing Categories (2004) (Maurino, 2006:3). In a similar context, Yost *et al.* (2000) propose the following framework for evaluating levels of reflexivity:

a) no descriptive language, b) simple, layperson description, c) events labelled with appropriate terms, d) explanation with tradition or personal preference given as the rationale, e) explanation with principle or theory given as the rationale, f) explanation with the principle/theory and consideration of other factors, and g) explanation with consideration of ethical, moral, political issues (2000:45).

Hawkes (2001) proposed a ‘Taxonomy of Teacher Reflective Thinking’ consisting of seven levels, which, however, appears to be particularly classroom focused:

1. No description of event. Message unrelated to practice.
2. Events and experiences, described in simple, layperson terms, generally unattached to classroom activities.
3. Descriptions of events and experiences employ pedagogical terms.
4. Explanation of events or experiences is accompanied by rationale of tradition or personal preference.
5. Explanation of an event or experience using cause/effect principle.
6. Explanation provided that identifies cause and effect factors while also considering contextual factors.
7. Explanation of events, experiences or opinions that cites guiding principle and current context, while referencing moral and ethical issues (2001:294-295).

In a discussion of evidence of reflection, Liou (2001) described the reflective practice of 22 pre-service teachers in Taiwan by employing Ho and Richards’ (1993) categorisation of ‘descriptive’ and ‘critical’ reflection (Son, 2004:114). Booth and Hultén (2003) explored learning in a web-based discussion group and in analysing discussion transcripts for pivotal contributions in the discourse, they developed a ‘taxonomy of contributions to on-line discourse’ consisting of four categories of contributions, namely ‘participatory’, ‘factual’, ‘reflective’ and ‘learning contributions’; the authors described the taxonomy as a ‘necessary hierarchy for learning’ explaining:

For a learning contribution to be made it is necessary that questioning and justified agreement and disagreement of the reflective contributions have been present. Reflection can only occur when participants in the discussion are presenting, proposing, asking for, facts related to the problem in hand and the emergent solution, or factual contributions. These, then, are prerequisites for learning. The participatory contributions are what identifies the individuals as members of a collaborative unit where such discussions are allowed, trusted and

supported in a social sense, what makes each contribution worthy of examination and response (Booth and Hultén, 2003:82).

Ottesen (2007) analysed discussions between student teachers and mentors during internship and his findings suggest three modes of reflection: ‘reflection as induction to warranted ways of seeing, thinking and acting’, ‘reflection as concept development’ and ‘reflection as off-line or imagined practices’ (2007:31). More recently, Kember *et al.* (2008) presented a protocol that they argue it can be used to guide the allocation of written work to four categories, namely ‘habitual action/non-reflection’, ‘understanding’, ‘reflection’ and ‘critical reflection’ (2008:369).

The table that follows is an attempt to present an indicative overview of the plethora of existing taxonomies that claim to assess reflexivity:

Author (s)	Reflective Categories	Explanation
Van Manen (1977)	Reflexivity comprises of 3 levels	<ol style="list-style-type: none"> 1. the teacher’s dominant concern is with technical rationality 2. investigating, questioning, and clarifying the end objectives and the assumptions behind teaching activities designed to achieve these objectives 3. the teacher is reflecting upon the larger context where all education exists. Moral and ethical questions are incorporated into one’s line of thinking (critical reflection).
Zeichner and Liston (1987)	Inspired by Dewey, he argues for 2 levels of reflection	<ol style="list-style-type: none"> 1. routine action, guided by outside authority 2. reflective action , inspired by the concept of the teacher as a moral craftsperson who is concerned with the ethical issues involved in carrying out certain actions.
Schon (1987)	3 forms of reflection but not in a developmental sense	<ol style="list-style-type: none"> 1. reflection on action (reflecting on the action that has already taken place) 2. reflection –in-action (reflecting during the action itself) 3. reflection-for-action (what guides the teacher to think and plan for his future actions).
King and Kitchner (1993)	Reflection encompasses three visions of knowledge. These visions are later classified into 3 types of thinking	<ol style="list-style-type: none"> 1. pre-reflective thinking (a person perceives knowledge as coming from authority and therefore is certain of its correctness) 2. quasi-reflective thinking (a person starts to realize how matters are complicated and the uncertainty of knowledge and finds processing of problems difficult) 3. reflective thinking (a person assumes that knowledge is gained from different resources

		and its meaning comes from context).
Brookfield (1995)	He focuses on critical reflection, which is characterised by 2 features. He does not reject other types of reflection; he maintains that it is possible to teach reflectively, whilst concentrating on the details of every day class.	<ol style="list-style-type: none"> 1. to understand how considerations of power undergird, frame, and distort educational processes and interactions 2. to question assumptions and practices that seem to make our own best long term interests.
Galvez-Martin et al. (1998)	They propose a seven level scheme	Ranging from zero (a student teacher does not mention – in his journals – pedagogical concepts or skills) to seven (he evaluates instructional/non-instructional events from multiple perspectives, giving suggestions and recommendations using ‘if-then-because’ statements).
Ross (1999)	She describes three developmental levels	<ol style="list-style-type: none"> 1. low level (a student gives examples, describes practices or agrees with positions in the literature) 2. moderate level (a student teacher provides good critique for practice from one perspective, analyzes in more details teaching practices, and recognizes that instruction must vary to meet different demands and needs of different situations and students) 3. highest level (a student teacher starts to view things from different perspectives and recognizing the impact of teachers’ actions that go beyond classroom settings.
Kember et al. (1999)	Four criteria for assessing reflective thinking in a student’s written reflective journal	<ol style="list-style-type: none"> 1. non-reflective actions (habitual action, thoughtful action and introspection) 2. reflective action includes content reflection where one reflects upon experiences or events or thoughts and feelings. 3. process reflection is where we examine how we perform our own thinking, feelings, and thinking 4. premise reflection (one becomes aware of the reasons for one’s thinking, feeling, and acting in certain ways which requires a critical review of our beliefs and suppositions).
El-Dib (2007)	Three stages of action research <ol style="list-style-type: none"> 1. planning (stating the problem and planning for action) 2. acting (describing the 	In each of these stages, reflective thinking is conceptualised as existing at 4 levels, starting from low, to low-medium, high-medium and high.

steps taken to solve the problem)
 3. reviewing (examining the actions and their consequences, questioning the results and envisioning future actions

Table 2.4 Overview of Existing Taxonomies for Assessing Reflection

In this context, and despite the enormous proliferation of literature on the nature and practice of reflection, it has become evident that still little is agreed about what ‘reflection’ is, and that which is asserted is confusing and contradictory; even the work of Schon, which lies behind the debate on reflective practice in the professions, appears to be problematic, as according to Ixer (1995) it leaves more questions than answers and, until such time as we can state more clearly what it is, we may have to accept that there is no theory of reflection that can be adequately assessed (1995:513).

Hence, what is reflection and what constitutes evidence of reflection after all? I feel it is imperative that I re-examine the nature and scope of reflection and take a stance on this matter, for the pertinent enquiry in this study involves examining whether, and if yes, how reflective thinking is promoted through collaborative asynchronous computer mediated discourse; for it is through the lens of the reflexive theoretical framework adopted in this study that significant decisions were made on matters regarding ‘what constitutes evidence of reflection’ and, how it was represented for the purposes of reporting on the study’s comparative research outputs.

2.2.4 Multiple Mirrors: Reflections on Reflexivity

Zeichner and Liston (1990) have argued that any concept or definition of reflection is embedded in a particular ideology and epistemology and that these can then be said to form a theoretical framework in which any research program and its activities are embedded; thus, each phase of the research, from the manner in which research questions and hypotheses are framed, through the manner in which data gathering and analysis techniques are established, to the decisions regarding what constitutes evidence and the conclusions drawn, will all be framed and directed by the definition of ‘reflection’ employed (Smith and Hatton,1992:1).

An analysis of the literature reveals a plethora of words associated with the concept of reflection, each of which, as Adler (1990, 1991) suggests, is embedded in and reflects a different discourse (*ibid.*). Ecclestone (1996) appears to be in agreement when she is asking the education community to ‘offer much clearer accounts of different interpretations and values which underpin reflection and to structure its forms and focuses more coherently than we do at present’ (1996:152).

Regarding the Nature, Scope and Object of Reflection

Although there are many different conceptualizations of ‘reflection’ and ‘reflective teaching’ (Calderhead, 1989; Grimmer, 1988), most of them seem to share the underlying assumption that teachers should use logical, rational, step by step analyses of their own teaching and the contexts in which that teaching takes place; language, whether spoken or written, plays a central role in these analyses, as it is the vehicle by means of which teachers can express their observations or analyses to another person or to themselves (Korthagen, 1993:317).

Korthagen and Wubbel (1995), however, have provided empirical data that support the views of those who challenge reflection as being an entirely rational, cognitive process, in which emotions and attitudes play a subsidiary role (Day, 1995:5). In addition, the thinking and problem-centred view of reflection as characterised by Dewey, and supported by others (Wildman *et al.*, 1990; Calderhead, 1989; Cutler, Cook and Young, 1989; Gilson, 1989), may be contrasted, for example, with a view of reflection that emphasises either the framing and reframing of beliefs and perceptions to generate alternative ways of viewing a situation or experience (Noordhoff and Kleinfeld, 1988; Boud, Keogh and Walker, 1985) or one that suggests that reflection may consist of more than thinking and constitutes thinking only as part of wider reflective action (Noffke and Brennan, 1988; Grant and Zeichner, 1984 in Smith and Hatton, 1992).

Ottesen (2007) argues that to clarify the notion of reflection in teacher education, a distinction needs to be made between ‘reflecting’ and ‘thinking’; the notion of the object of the activity (Leont’ev, 1978; Miettinen, 2005; Stetsenko, 2005) is helpful in making this distinction (2007:33):

The constituting characteristic of an activity is its object-orientedness. The object is doubly constituted in activity: as the object to be transformed or

produced in the activity, and as its representations in individual minds. By acting in the world, subjects incorporate relations into the object of their activity, thereby reconstructing the object as an entity in the world and as a social representation (Wartofsky, 1979 in Leont'ev, 1978:52).

The objects so constructed give direction and generate meaning and intention; goal-directed actions constitute the empirical realizations of activity (Leont'ev, 1978:63).

To this end, Ottesen (2007) makes a helpful distinction between 'reflection as an objective in teacher education' and 'reflection as a discursive tool mediating learning' (2007:32), arguing that it is this sense of purposeful object-oriented action that distinguishes reflection from 'mere' thinking (2007:33).

For example, numerous teacher education practices are designed to develop student teachers as reflective practitioners (Zeichner, 1994; Korthagen, 2001; Admiraal and Wubbels, 2005); reflective teachers are 'outcomes' of learning processes during teacher education. In contrast, the focus [here] is on student teachers' and mentors' employment of reflection in communicative action as a culturally constituted tool in processes of meaning-making. Thus, I want to investigate how student teachers and mentors reflect in discussions during internship, and what they accomplish together when they reflect (2007:32).

It would seem that the most useful way of thinking about reflection within the context of professional education is in its relationship to action, as much of the rationale for reflection lies in its relation to action and in its potential to improve professional practice (Smith and Lovat, 1991; Smyth, 1989; Boud, Keogh and Walker, 1985 in Smith and Hatton, 1992). The most important point, however, is that whatever answers are derived for the question 'What constitutes evidence for reflection?' are inherently linked to the definition of reflection employed in any research and the assumptions on which the definition is based:

Thus, if one employs a Deweyian notion of reflection, evidence would be based upon some form of searching/inquiring to resolve some state of doubt or perplexity (Farrah, 1988). In addition, such searching would be confined to thinking and the thinking would be of a structural, logical and sequential nature (Farrah, 1988). Thus, if a researcher was to employ such a definition of reflection not only is the nature of evidence already construed by the definition

but so is the nature of the task or problem by which the evidence is gathered. (Smith and Hatton, 1992:1).

Two key implications appear to arise from the preceding discussion and in the context of the present empirical investigation. First, Dewey (1933) has argued that ‘reflection involves not simply a sequence of ideas, but a con-sequence, a consecutive ordering in such a way that each determines the next as its proper outcome, while each outcome in turn leans back on, or refers to, its predecessors (1933:4). However, although this conceptualization of reflection as a rational process is important, and has undoubtedly proved useful in promoting the professional development of teachers, it describes only one way in which the human mind can process information and direct decision – making:

Moreover, as much of everyday classroom teaching relies on non-rational teacher behaviour (Carter, 1990; Clark and Yinger, 1979), it is important to give serious attention to these other ways in which the mind can operate, i.e. processes of interpreting information and guiding actions. Schon (1983, 1987) describes these processes as ‘knowing-in-action’, in which rational analysis plays no role, at least not at the moment of action. He criticizes the ‘model of technical rationality’ in which professional activity is seen as ‘instrumental problem solving made rigorous by the application of scientific theory and technique’ (Korthagen, 1993:317).

Second, an inherent risk in an imprecise picture of reflection is that, in an age where measurable, observable learning takes priority, it is easily dismissed precisely because no one knows what to look for (Rodgers, 2002:844). In fact, Latour (1988) rejects the ranking of reflection in order of discourse, arguing that devaluing immediate description is a way of censoring certain ways of perceiving and talking about teaching (Fendler, 2003:20).

Dewey reminds us that reflection is a complex, rigorous, intellectual, and emotional enterprise that takes time to do well. He gives us a way to talk about reflection and reflective practice so that it does not fall into disuse and instead becomes richer and more complex as a result of that conversation. He provides us with a touchstone, a taproot, from which the conversation can flow and to which it can return when it gets lost or muddled (Rodgers, 2002:844).

Indeed, I feel that the debate reported in the literature regarding the concept of reflection ‘gets lost or muddled’, and it is in this context that I will now turn to report on the stance taken in this thesis.

2.2.5 Coming to Terms with the Literature: Setting the Parameters

Education, Experience and Reflection: Reflections on Dewey’s Thinking

For Dewey, the purpose of education was the intellectual, moral, and emotional growth of the individual and, consequently, the evolution of a democratic society (1916/1944:99). Dewey (1916/1944) defines education as a verb, rather than a noun, arguing that education is ‘that reconstruction or reorganization of experience which adds to the meaning of experience, and which increases [one’s] ability to direct the course of subsequent experience’ (1944:74).

An experience according to Dewey is broadly conceived; what is important is that there is interaction between the person and his or her environment – an experience is not an experience unless it involves interaction (Rodgers, 2006:846). Because an experience means an interaction between oneself and the world, the effect is dialectical and there is a change not only in the self but also in the environment as a result (ibid.).

The second important element of experience is ‘continuity’; Dewey (1938) speaks of ‘social continuity’: ‘the continuity of any experience through renewing of the social group is a literal fact; education in its broadest sense, is this means of this social continuity of life’ (1938:39), attributing the advances in science and technology as more civilized ways of interacting with one another, to continuity (Rodgers, 2006:846). More narrowly defined, ‘continuity’ resembles Piaget’s ‘schema building’:

What [one] has learnt in the way of knowledge and skills in one situation becomes an instrument of understanding and dealing effectively with the situations which follow. The process goes on as long as life and learning continue (Dewey, 1938:44).

Experiences alone, however, even educative ones, are not enough, Dewey asserts; what is critical is the ability to perceive and then weave meaning among the threads of experience; ‘experience is not primarily cognitive’ (Dewey, 1916/1944),

that is, experience isn't the same as thought, rather it is the meaning one perceives in and then constructs from an experience that gives that experience value (Rodgers, 2006:848). An experience exists in time and therefore is linked to the past and the future (ibid.): 'the measure of the value of an experience lies in the perception of relationships or continuities to which it leads up; it includes cognition in the degree in which it is cumulative or amounts to something, or has meaning' (Dewey, 1916/1944:140). To the above, I would also like to add Eisner's (1988) point of view who has argued that knowledge is rooted in experience and requires a form for its representation (1988:15).

This is where reflection comes up. The function of reflection is to make meaning, to formulate the 'relationships and continuities' among the elements of an experience, between that experience and other experiences, between that experience and the knowledge that one carries, and between that knowledge and the knowledge produced by thinkers other than oneself (Rodgers, 2006:848):

In discovery of the detailed connections of our activities and what happens in consequence, the thought implied in cut and try [sic] experience is made explicit ... Hence the quality of the experience changes; the change is so significant that we may call this type of experience reflective – that is, reflective par excellence (Dewey, 1916/1944:170).

Of great significance as well is Dewey's thinking on how the 'meaning making' impacts on human life in helping us make sense of and attribute value to the events of our lives; in fact, he ascribes the act of meaning making to the soul, contemplating:

What avail is it to win prescribed amounts of information about geography and history, to win the ability to read and write, if in the process the individual loses his own soul: losses his appreciation of things worth-while, of the values to which these things are relative; if he loses desire to apply what he has learned and, above all, loses the ability to extract meaning from his future experiences as they occur? (1938:49).

If education then, and after Dewey, is 'that reconstruction or reorganisation of experience, which adds to the meaning of experience', reflection is 'that process of

reconstruction and reorganisation of experience, which adds to the meaning of experience' (Rodgers, 2006:849).

In the era after Dewey, the word 'reflection' is used in a number of ways, both in everyday life and in educational situations, as something that occurs in/during action; as something that is a cognitive activity separated from (physical) action; and as the image produced in the reflection of light against a smooth surface (Brown and McCartney, 1999:20). Both teaching and learning contain elements of discretion, judgement and forethought; reflective thinking is important not only as a tool for teaching and learning, but also as an aim of education, since it enables us to know what we are about when we act (ibid.).

Schon (1983) has argued that reflective practice in its own right poses a set of questions that researchers avoid at their own peril, and he poses a number of questions on the back of his statement that there is nothing in the reflective turn that requires a uniform approach to reflection (Grey and Fitzgibbon, 2003:11):

What is it appropriate to reflect on? What kind of phenomena? What is an appropriate way of observing and reflecting on practice? In what sort of activity does reflection consist? How ought we to represent, in words or other symbols, our discoveries about practice? By telling stories ... explanatory models? How shall we assess the consequences of our choices (of strategy of different purposes? What constitutes appropriate rigour? How do we know what we claim to know? (Schon, 1983:9).

Schon is primarily concerned with reflection for action (its purpose to affect action currently in progress; for Kolb, on the other hand, prime concern is reflection for learning, which is expected to affect future actions but not usually those still in progress (Eraut, 1995:16). Schon's use of the term 'reflection on action refers to the process of making sense of an action (or event) after it has occurred and possibly learning something from the experience which extends one's knowledge base; it may affect future action but cannot affect the action being reflected upon because that has already passed (ibid.). Schon in the *Reflective Practitioner* puts an emphasis on tacit knowledge and artistry as opposed to technical rationality (Eraut, 1995:17).

Schon (1987) has suggested that professional education undervalues practical knowledge and grants privileged status to intellectual scientific and rational knowledge forms that may only be marginally relevant to practical acting; the

literature of teaching and teacher education has shown that professional practices of educating cannot be properly understood unless we are willing to conceive of practical knowledge and reflective practice quite differently (Van Manen, 1995:33). While strongly supporting his view of the significance of knowledge creation by working professionals out of the academic context (Eraut, 1985), one may not be convinced that this results mainly from reflection-in-action rather than more deliberative reflection out of action (Eraut, 1995:21).

Moments: Personal Reflections

In reflecting on the preceding discussion, my thoughts are, and after Korthagen and Wubbels (1995), that the view of reflection as a purely rational process is too limited; emotions and attitudes play a crucial role:

We are convinced that the stimulus to engage in reflection is almost always rooted in a need to get a better grasp of the situation. However, when fear becomes too great, as often happens during the ‘transitions shock’ (Muller-Fohrbrodt *et al.*, 1978; Corcoran, 1981) reflection may disappear altogether... It is as if the capacity for reflection is pushed away when you’re confronted with an accumulation of conflicts. You feel empty. I no longer had any point of reference (1995:70).

According to Kolb (1984), there are two ways of grasping the world: apprehension (a way of summarizing our sensations) and comprehension (a way of introducing order in such sensations and making them communicable). Gelter (2003) makes reference to the theory of dual-knowledge epistemology, i.e. this theory of two distinct, coequal and dialectically opposed ways of understanding the world, which has also gained support from psychology, with Zajonc (1980) showing that feeling and thinking are separate processes, and that feelings and affective judgement occur before cognitive analysis, a conclusion also reached by neurobiology (Damasio, 1994 in Gelter, 2003:339).

This view of an affective apprehension mode as the primary way to knowing about the world is supported by human evolution, where non-verbal communication based on expressed feelings precedes verbal language communication based on logical and analytical conceptualizations; neurobiology has found that feelings regulate our

attentions and influence our logical reasoning and this might be a consequence of feelings being an ancient survival mechanism (Damasio, 1994):

Libert *et al.* (1983) argue that all our actions start unconsciously; the execution of our consciously determined actions are always initiated by unconscious brain activity that starts 0.5 seconds before the action, which means that this delay in the conscious 'I' demonstrates that our conscious cannot initiate actions, but only to execute them! (Gelter, 2003:340).

What would be most interesting to consider though is the following extract from Dewey (1933), where he clearly demonstrates his awareness of what educators call the 'affective dimension' of learning, which is often overlooked in the literature, perhaps because, and as Rodgers (2002:858) put it in a particularly witty manner, he wrote the *How We Think* and not the *How We Feel*:

Human beings are not normally divided into two parts, the one emotional, the other coldly intellectual – the one matter of fact, the other imaginative. The split does indeed often get established, but that is always because of false methods of education. Natively and normally the personality works as a whole. There is no integration of character and mind unless there is fusion of the intellectual and the emotional, of meaning and value, of fact and imaginative running beyond fact into the realm of desired possibilities (1933:278).

And finally, what is the stance taken in this thesis? This study projects a concept of reflection as a 'meaning – making process' (Dewey, 1916/1944) and also as a 'discursive tool mediating learning' (Ottesen, 2007:32). A view on reflection based on socio-cultural perspectives on human activity is advanced, recognizing reflection as action embedded in societal activities (*ibid.*) and embracing the whole gamut of one's life experiences, as it progresses gradually in terms of awakening, cultivation, and transformation; to this end Connelly and Clandinin (1995) explain vividly:

Cultivation is mainly found in the intentional hard work of schooling and in the unintentional lessons of play and other forms of daily life; awakening is found in the romance of becoming aware of the possibility of seeing oneself and the world in new ways; transformation is found in the process and outcome of falling into living new ways of seeing. Transformation returns a person to

cultivation though in a different place. The awakenings and transformations of one person or generation may be or become the cultivations of another (1995:82).

Through this notion of ‘holistic reflexivity’ projected in this thesis, the whole of the person is engaged, and the intellectual, moral, and emotional growth of the individual – as Dewey (1916/1944) conceptualizes the purpose of education – is achieved, and eventually ‘self control’ and ‘integration with nature’ may be accomplished (Confucius). In a similar context, Connelly and Clandinin (1995) speak of the significance of attending of the whole of one’s life significant histories:

What does it mean to have an education? Connelly and Clandinin in a paper entitled ‘Narrative and Education’ (1995) discuss the importance ‘of attending of the whole of life significant histories (learning) of students which themselves contribute to their lives, learning, teaching and education which are distinctions within, and abstractions of, a lived life’ (Day, 1995:5).

In other words, I see reflection as a life process that spirals through a number of in-built stages; these stages may serve different purposes and vary depending on the focus or the context in which they appear to surface. Schon’s concept of reflection focuses on present action, whilst Dewey’s work on future action. In a sense, I pursue an alternative epistemology of professional development practice that goes beyond concentrating on a thorough investigation of ‘reflection in action’ and ‘technical rationality’. To this end, I would like to draw from Day (1999) who, in arguing that professional development takes many forms, urges us to resist the pressures to focus solely on the technical, surface and performance features of teaching and to learn to look at values, and the ethical and human aspects of being a teacher (1999:39).

The theoretical framework for ‘reflection’ in this thesis emerged by consulting the literature and analyzing the empirical data, in an attempt to present a pragmatic view on ‘what constitutes evidence of reflection’, and how it may be represented in words or other symbols in the context of reporting on the research outputs. A mind map that illustrates my reflections on developing the conceptual framework for the notion of reflexivity, as it is employed in this study, may be found at the end of this thesis, in Volume II. The ‘Scheme of Indicators for Determining Evidence of

Reflection' portrayed in this study, and which is discussed in detail in Chapter 5, depicts the 'depth' of reflexivity in the reflective units of the discourse analysed.

In sum, the identified 'episodes' in the discourse were coded as either 'Un-reflective/Other' or 'Reflexio Act'; this 'Un-reflective/Other' aspect resembles what Dewey calls 'stream of consciousness', that is, 'an uncontrolled coursing of ideas through our heads (1933:4).

Three indicators for determining evidence of reflexivity (or 'Reflexio Act') were identified. The first one is 'Reflective Thinking'. This stage, resembles Dewey's stage of 'invention' (which is short imagination), and which Dewey thinks it is an important stage as reflection requires that the thinker draws on past experience, 'image-ing' other events that are similar to or different from the experience being inquired into; as Dewey calls it, it is 'short imagination'. I see this stage as the subset for the second stage, the 'reflective interpretation' stage, which follows.

The second indicator is 'Reflective Interpretation', which consists of 'Non-rational Interpretation' (non-analytic explanation using gestalts, patterns, unreasoned evaluative responses, e.g. habitual action, rigid, strong personal beliefs, emotions, values) and 'Rational Interpretation' (analytic explanation, argumentation, extensive analysis of the issue with reference to e.g. causal relationships, socio-economic and political context, decomposing, reframing, reconstructing).

The third indicator is the 'Core/silent reflection', where one thinks outside the boundaries of an episode and makes contact with deeper levels inside (deep examination of one's being rather than just examination of external episode). The focus is on the inner experience and evidence may be all or some of the following: examining, tasting, comprehending, understanding, confirming, verifying; overcoming inner conflict; probe more deeply into personal knowledge; beliefs become uncertain/revised decisions; self-criticism (not just intellectual argumentation); an experience finally makes sense and can be relied on future action; possibility of creating new knowledge. The ultimate result is self-actualization/realization.

It would be of significance to draw to the reader's attention though, and after Ottesen (2007), that these depths referred to here are not to be taken as levels in a hierarchic structure leading to a 'more true reflection', or necessarily 'better learning'; rather, they must be seen as empirically developed constructs, demonstrating how an object's expansion is carried out in dialogue contingent on the purpose directing the action:

[First], how an object of reflection is expanded is neither intrinsic to the object nor the experience. Secondly, any one reflective event may (and often does) comprise elements of all [reflexive aspects and/or depth]. What it becomes is contingent on contextual influences as well as the agency of the participants and the work of dialogue itself (2007:40).

In other words, the projected ‘Scheme of Indicators for Determining Evidence of Reflection’ depicts a process that spirals through emerging ‘reflective dividends’ or ‘building blocks’ that lead to core reflexivity, which is the ultimate depth and also evidence of a lifelong journey to one’s personal and professional development.

I would also like to emphasize that my intention has not been to offer yet another definition of reflection. It has become obvious to me that many others have worked towards this purpose, and by examining the proliferation of definitions in the pertinent literature, which I must admit has added more to my confusion than shed light in my thinking. Instead, my intention has been to work towards a comprehensive understanding of the concept ‘reflection’, bringing unity in the landscape of past and contemporary definitions and perspectives. In Taylor’s (1986) words:

From its inception in Greece, Western philosophy has, for the most part, privileged oneness and unity (the Same) at the expense of manyness and plurality (the Other). Accordingly, [this] project can be understood as the repeated effort to overcome plurality and establish unity by reducing the many to the one (1986:4).

Furthermore, I would like to draw from Bernstein (1983), who cites Arendt as arguing in a similar vein:

What Arendt is struggling to discriminate and isolate for us is a mode of thinking that is neither to be identified with the expression of private feelings nor to be confused with the type of universality characteristic of ‘cognitive reason’. It is a mode of thinking that is capable of dealing with the particular in its particularity but which nevertheless makes the claim to communal validity. When one judges, one judges as member of a human community (1983:217).

Having critically discussed the concept of reflection and having exemplified the theoretical framework underpinning reflexivity in this study, I will now continue with

the analysis of the pertinent literature by discussing the interplay between information and communication technologies and teachers' professional development.

2.3 ICTs and Teacher Professional Development: Mapping the Terrain

Son (2004) has argued for the significant role that professional development plays in ensuring that teachers are able to enhance student learning in their teaching situations; teacher quality has a great impact on student achievement (Albion, 2003; Darling-Hammond, 2000; Pratt, Lai and Munro, 2001) and, in improving the quality of teachers, professional development has been identified as a key factor (Pratt, Lai and Munro, 2001 in Son, 2004:107).

Teacher professional development is essential to efforts to improve our schools; however, despite recognition of its importance, the professional development currently available to teachers is woefully inadequate (Borko, 2004:3). Each year, schools and the government spend a wealth of resources on in-service seminars and other forms of professional development that are fragmented, intellectually superficial, and do not take into account what we know about how teachers learn (Ball and Cohen, 1999; Putnam and Borko, 1977 in *ibid.*).

One notable development in the last few years is the increasing exploration around the nature of teaching and learning itself, which has been fed, stimulated and challenged by the increasing use of computing in most educational arenas (Salmon, 2000:x-xi). The Internet, particularly the World Wide Web, provides teachers with a rich and varied teaching environment and, along with a huge increase in schools accessing the Internet, there is a growing recognition that teachers need to be well equipped to meet the challenges of the new on-line environment; those challenges are placing pressures on teachers, including the need to develop new skills and strategies required in the use of information and communication technology (ICT) for their teaching and now, more than ever, teachers are requested to not only know about ICT but also use it for their professional development (Lai, 2001 in Son, 2004:108).

2.3.1 On-line Teacher Professional Development: A Seductive Image or a New Research Agenda?

Professional development is a matter of high priority and integral to educational change and reform (McRae, Ainsworth, Groves, Rowland and Zbar, 2001 in Vance and McKinnon, 2002). Current models of professional development have not been successful in helping teachers change their practice; to address this issue, on-line teacher professional development (oTPD) programs have emerged (Sprague, (2007:145).

Sprague (2006) argues that on-line teacher professional development models provide high quality learning opportunities, as teachers have access to experts in a given field and they are able to collaborate with others. In addition, on-line learning allows time for reflection and for dialogue and for flexibility in scheduling, timing, and the development of one's own learning spaces; in other words, it can be empowering as teachers take ownership of their own learning (2006:657-658). By playing out their 'selves' on-line in relation to textual authorship, teachers are in a position to enter into powerful negotiation around the meaning of professional phenomena (Pachler and Daly, 2006:63).

There are several models available for on-line teacher professional development: some of these models, such as the Milwaukee Professional Support Portal (Spicer and Dede, 2006) and the Inquiry Learning Forum (Barnett, 2006), are formal and developed through multiple partnerships, whilst other models are less formal and involve the use of a variety of tools, including case studies (Paulus and Roberts, 2006) or e-mail and discussion boards (Parr, 2006), or course websites (Friedman, 2006) supplementing face-to-face professional development programs (Sprague, 2006:657). However, all of these models have the same goal in mind: to improve teachers' understanding of learning and to change their teaching practice (ibid.).

Dede (2006) in acknowledging that today's professional development programs are frequently mediocre, fragmented, and superficial, argues that the promise of on-line professional development is that, if properly designed, it can provide cost-effective, tailored, 'just-in-time' training, with the challenge being 'making it work', a task that has suffered due to a lack of careful consideration of existing efforts (2006:145):

Studying the many subtle aspects of individual learning styles – cognitive, affective, and social – that shape learning across distance and time has proven a challenging and rewarding endeavour far from complete (Dede, 2005:68); we are just beginning to understand how these representational containers can reshape the content, process, and delivery of presentation-centred distance education (ibid., 2005:69).

Luppini (2007) seems to be in agreement when he argues that few research studies have explored the effects of on-line training and professional development (Anderson and Kanuka, 1997; Bonk *et al.*, 1998; Hawkes, 2000; Briton and Taylor, 2001; Gold, 2001) and he poses a number of significant questions (2007:165):

Do on-line learning environments work? How do they work (or not)? Who do they work for (not work for)? Research literature on different aspects of on-line [communication] is rapidly expanding, but most of it consists of anecdotal reports, theoretical articles, and non-empirical research. Much of the research on on-line education addresses the viability of on-line instruction compared to the traditional classroom. The main bodies of research in this area are comprised of course development research, and evaluation research (2007:152).

Indeed, limited research has focused specifically on teacher professional development, mainly investigating issues such as the nature of the on-line activities and the rate of participation in discussion (Drot-Delange, 2001), the factors affecting participation, the type of communication, group processes and social environments (Fahraeus, 1999); later studies appear to concentrate on the micro-level identifying the features of computer mediated communication (CMC) that best facilitate collegial discourse and collaboration (Hawkes, 2000), or predictors for CMC use by teachers (Van Braak, 2001 in Vance and McKinnon, 2002:2).

Indeed, in on-line environments, CMC is increasingly considered as a means of providing opportunities for teachers to discuss and facilitate reflective practice (Johnson and Brine, 2000; Kamhi-Stein, 2000; Motteram and Teague, 2000; Nunan, 1999; Son, 2002; Wolcott, 1995 in Son, 2004:114). A quick browse through this literature is sure to uncover glowing reports of the power of electronic teacher networking; however, a closer look at the claims about the power of CMC and teacher professional development and the research in this area raises far more questions than it

answers (Zhao and Rop, 2001:81). But what exactly is computer mediated communication?

2.4 Computer Mediated Communication Technologies

Computer mediated communications (CMC) are described as communications, mediated by interconnected computers, between individuals or groups separated in space and/or time; common characteristics of CMC include asynchronous and synchronous communication capacity, and multi-way communication (Luppicini, 2007:142).

Computer mediated communication, and its collaborative sister, computer mediated conferencing, actually arrived before the Internet and the World Wide Web became widely available (Salmon, 2000:vii). CMC was first implemented in the United States through a computer network called ARPANET; ARPANET offered a restricted multi-communication pathway linking universities and government research institutes (Elmer-Dewitt, 1994 in Luppicini, 2007:142).

With the rapid growth of the Internet, CMC is changing the way of interpersonal communication and is linking individuals and educational institutions with their counterparts in other locations (Son, 2002:127): it establishes an electronic environment that is accessible to participants who might otherwise be separated by time zones and physical distance (Wells, 1992:1).

CMC includes tools such as email and computer conferencing which allows learners and tutors to send and receive messages without being connected all at the same time (Steeple *et al.*, 1996:71). In CMC, interaction can occur synchronously or asynchronously and can be utilized in a wide range of educational settings; for example, it can be easily integrated into a distance education course or, considering that many teachers are unable to attend a conventional face-to-face course for various reasons, distance education can provide those teachers with opportunities for further professional development without leaving school or home (Son, 2002:127).

Synchronous technologies require all participants to be available (though not in the same place) at the same time and communication usually involves short comments, as occurs in chats for example (Preece and Maloney-Krichmar, 2003:560). Asynchronous technologies, such as bulletin boards or email, do not require participants to be available at the same time; correspondence via asynchronous

technologies therefore tends to take longer because it more closely resembles written notes in which one person raises or debates issues and others respond days, weeks or even months later (ibid.).

Computer mediated discourse is the communication produced when human beings interact with one another by transmitting messages via networked computers. The study of computer-mediated discourse (henceforth CMD) is a specialization within the broader interdisciplinary study of computer-mediated communication (CMC), distinguished by its focus on language and language use in computer networked environments, and by its use of methods of discourse analysis to address that focus (Herring, 2002:612).

But what are the benefits of utilizing computer mediated communication in teacher professional development?

2.4.1 Transcending the Barriers of Traditional Professional Development

Hargreaves (2000) proposes several criteria for designating a profession, including a specialised knowledge base, high degrees of autonomy, and long periods of training; integral to the nature and purpose of the profession is the ongoing development of both the individual practitioner and the field as a whole (Herod, 2003:14).

According to Quigley (1999), given how geographically dispersed adult basic and literacy practitioners are, teaching in cities, towns, villages, and farms using virtually any workable facility, it becomes extremely difficult to reach practitioners (1999:256). It is also commonly agreed that the professional development of teachers should be sustained over time; most professional development, however, is delivered in single or short sequences of face-to-face sessions, paying little heed to this requirement:

Once the face-to-face training is completed, a large proportion of teachers seemingly succumb to entropy. Often there is limited application of the proposed outcomes of the professional development in the classroom and few (if any) opportunities to share examples of successful programs or student work examples, particularly when teachers return to isolated or regional areas (Anderson and Henderson, 2004:383).

Recently however, a proliferation of CMC technology has resulted in cost-effective and viable means by which to do so (Herod, 2003:13-14). Over the past two decades, computer mediated communication (CMC) technologies have been used in a variety of efforts aimed at fostering teacher learning and teacher collaboration (Huberman, 1995; Levin, Waugh, Brown, and Clift, 1994; US Congress Office of Technology Assessment, 1995; Willis and Mehlinger, 1996) (Zhao and Rop, 2001:81):

A number of new possibilities for teacher support have begun to emerge with the advent of web-based technology; (CMC) is increasingly being seized upon as an attractive, low-cost alternative for facilitating teacher dialogue by providing round-the-clock opportunities for both individual and group interaction (Lieberman, 1996; Loiselle, St. Louis and Dupuy-Walker, 1998; Schrum and Berenfeld, 1997 in Hough *et al.*, 2004:361-386).

In the same vein, Zhao and Rop (2001) argue that innovations are solutions to perceived problems and that the reasons that CMC technologies have been used for teacher professional development are closely related to the challenges in helping teachers to become better professionals, whilst addressing the problems related to isolation:

The two characteristics of CMC technologies that have been most frequently promoted in the literature as having the potential to counter the difficulties in teacher professional development are their power to transcend time and space. The asynchronous nature of CMC enables teachers to participate in a discourse community at any time of the day, thus alleviating some of the time-pressures teachers face. CMC technology's capacity to enable communication across distance is believed to have the potential to provide teachers with collaborators or professional colleagues beyond their immediate physical situation (2001:82-83).

Dede (2005), in an early work back in the 1990s, also described the potential advantages of mediated interaction from a teaching/learning perspective:

Students who are shy can be more expressive, given the privacy and relaxed pace of mediated communication; people who are less assertive or who are methodical can formulate responses at their leisure, rather than competing with

others who jump in the instant a speaker has finished talking; people who wish to skim the messages of others rather than read in detail can do so (saving considerable time over the forced listening to an entire communication that takes place in real-time verbal interaction); all users will enjoy the comfort, convenience, and access of interacting from their individual environments, rather than gathering at a common place of minimum mutual inconvenience (2005:67).

In a similar context, Son (2002) argues that CMC promotes self-paced learning and autonomy (2002:128), with Salmon (2000) advocating that CMC encourages teachers to challenge perceived and received wisdom and practice about learning on-line and to reflect on their experiences (2000:vii).

2.4.2 Reflection in Asynchronous Computer Mediated Environments

Teacher reflection has long been identified as a vital tool for professional development and ultimately for educational reform (Richardson,1990,1994) and growing understanding about the role of social and cultural processes in human learning has emphasized the vital role of discourse in this process of reflection (Zhao and Rop, 2001:82). However, despite this general understanding of the importance of reflective discourse to teacher change and improvement, a common-place of the field is the recognition that the work of teaching occurs in contexts which are antagonistic to the conditions that foster both reflection and discourse (Little, 1990):

Reflection requires time – a teacher’s most limited commodity; discourse is by definition a communal practice – an activity limited by the isolating nature of teaching (Lortie, 1975; Jackson, 1986). Beyond physical isolation is recognition of the long-standing traditional perception of our private, individual nature of teaching (Little, 1990) (Zhao and Rop, 2001:83).

Since interactions with other learners are crucial in the formation of new constructs (Vygotsky in Glasson and Lalik, 1993), communication technologies provide opportunities to form collaborative, reflective networks of teachers (Louks-Horsley, 1998) for the purpose of improving practice (Dimauro and Jacobs, 1995 in Sundberg, 2002:2).

Computer mediated asynchronous environments, otherwise known as Asynchronous Learning Networks (ALN), are those in which individuals and/or groups can interact on-line without both parties being logged on at the same time (Berge, 2001 in Dede, 2002:11). A primary goal driving the formation of these electronic teacher communities is the desire to facilitate teacher reflection (Bonk, Daytner, Daytner, Dennen and Malikowski, 1999; Harrington and Quinn-Leering, 1995; Hawkes, 1998; Lieberman, 1996; Loiselle *et al.*, 1998; Schrum and Berenfeld, 1997 in Hough *et al.*, 2004:361-386).

The on-line asynchronous, text-based discussion provides benefits that result from freedom from temporal and spatial constraints; the time and place independent nature of this form of on-line communication facilitates self-directed learning (Harasim, 1990) and supports more interaction and flexibility in communication (McComb, 1993) (Murphy and Coleman, 2004:2).

In this context, Eraut (1995) argues that benefits include the availability of time to reflect, the disposition to reflect once the obligations of practicum discussions and assessed work have been removed, with a third advantage being the post-qualification routinization of professional work:

Newly qualified teachers have less need to reflect as they develop habitual routines and become familiar with a wider range of situations. The development of these routines enables them to cope with the pressures and stains of professional life by limiting the amount of new thinking they have to do everyday and increasing their productivity so that they get at least some leisure time. On unfortunate side-effect is a tendency to associate reflection with the other professions. Unless supported and/or demonstrated by colleagues in the workplace, reflection can come to be seen as inauthentic behaviour within a community of professionals, an intrusion from the old of academia and possibly also, at an unconscious level, a threat (1995:18).

Similarly, Murphy and Coleman (2004) argue that unlike face-to-face discussions, there is typically no requirement for turn taking and individuals respond, not according to a pre-imposed order, but on the basis of their interest in the topic (Murphy, 2001); in other words, participants in an on-line discussion contribute at their own pace (McComb, 1993; Morgan, 2000) and the benefit of that is that they have time to reflect on their and others' comments, with both slow and shy responders benefiting from an equalizing effect (Ortega, 1997) that derives from being able to

control the pace of one's interaction and communication (Murphy and Coleman, 2004).

In the same vein, and in line with the present study's findings, numerous other researchers appear to concur; Branon and Essex (2001) have argued that asynchronous on-line discussion is useful for encouraging in-depth, more thoughtful discussion, communicating with temporally diverse students, holding ongoing discussions where archiving is required, and allowing all students to respond to a topic (2001:36); Li (2004) reported that on-line discussion can support reflection and other forms of higher-order thinking' (Hannafin *et al.*, 1999) (such as reflection and synthesizing), which enhance students' learning (2004:24); Wegerif (1998), in explaining that one of the main advantages of text-based on-line forums is that CMC fosters deeper discussion, points out:

The benefits of taking part in collaborative learning [via CMC] were derived from taking part in a developing conversation where many of the replies were much more considered than might have been the case had the same people met and talked together over several hours (1998:13).

The most plausible explanation for these research outputs is that on-line forums provide an accurate record of what has been said so that participants can re-read a discussion, rather than rely on their memories; this provides participants with the opportunity to review and reflect on what has been said and make more considered responses (Herod, 2003:18):

An interrelated result of time-delayed dialogue is that knowledge is built layer by layer in what Bereiter (1994) terms as "progressive discourse." Scardamalia and Bereiter (1999) describe this as "sustained versus single pass knowledge creation" in which a problem or issue is revisited many times versus discussed in a time-limited setting such as a class. Costa *et al.* (1997) refer to this as "feedback spirals," which they suggest, "provide potent processes of continuous growth and learning" (1997:102).

Wells and Chang-Wells (1992) point out that by making a record of text of thought available for reflection, and, if necessary, revision, a written text serves as a 'cognitive amplifier', allowing the reader or writer to boot-strap his own thinking in a

more powerful manner than is normally possible in speech (1992:122). The concept of cognitive amplification builds on the work of researchers such as Bruner (1972), Scribner and Cole (1981) and Heath (1983), who investigated the relationship among texts, talk, and literate thinking:

These researchers urged that texts be used epistemically, that is, treated as a tentative and provisional attempt on the part of the writer to capture his or her current understanding so that it may provoke further attempts at understanding as the writer or the reader dialogues with the text in order to interpret its meaning (Wells and Chang-Wells, 1992:139-140). When students attempt such interpretation by writing down their responses, they can capture those insights and perceived connections so that they can be returned to, critically examined, reconsidered (Warschauer, 1997:471-472).

Research comparing the learning of critical thinking and argumentation skills in on-line and face to face groups also indicates advantages for CMC groups; Quinn *et al.* (1983) compared the content of face to face and on-line course discussion, finding more critical interactions within email discussion; Martunnen (1998) compared email and face-to-face discussions within an argumentation course and found that email discussions demonstrated more well-grounded opinions and counter argumentation compared to face to face discussion (Luppacini, 2007:148-149). Other evidence in this context suggest that CMC results in less inhibition, more expression of personal viewpoints, and more argumentation compared to face to face groups (Quinnetal, 1983; Martunnen, 1998; Jonassen and Kwon, 2001; Martunnen and Laurinen, 2001) (*ibid.*).

In these lines, Murphy and Coleman (2004) make reference to other benefits that have been identified by researchers including opportunities for constructing and negotiating meaning (Lapadat, 2002), engaging students in meaningful on-line dialogue (Biggs, 1999), promoting critical thinking processes (Aviv, Erlich, Ravid and Geva, 2003; Newman, Johnson, Cochrane and Webb, 1996), and achieving higher levels of abstract cognitive processes than in face-to-face communication (Heckman and Annabi, 2003); additional benefits include more careful, formal and reflective responses (Heckman and Annabi, 2003) and an increased motivation to participate and to write well due to the presence of a real audience and purpose for communicating (Biesenbach-Lucas, 2003; Lapadat, 2002) (Murphy and Coleman, 2004:3-6).

Overall, research on professional education indicates that the capacity to support collaboration, reflection, and professional development, as well as to over come

barriers of time and place, makes the use of on-line forums a potentially useful and cost effective innovation (Anderson and Kanuka, 1997:2). However, although research about teacher reflection has a long history, not much is yet known about how to help teachers reflect in computer-mediated environments (ibid.).

Efforts to examine reflection in these environments are still in the beginning stages; the literature is primarily comprised of descriptive reports that present anecdotal information, and quantitative studies that report basic statistics such as length of time on-line or the number of messages posted (Romiszowski and Mason, 1996 in Hough *et al.*, 2004:361-386). A need for a more in-depth investigation, employing qualitative methods and analysis appears to be of urgent need.

2.5 Real Walls Down, Virtual Walls Up? The Social Dimension of Computer Mediated Communication

From the preceding discussion it has become evident that asynchronous textual communication is preferable when having time to reflect is useful or when participants cannot be co-present; however, Preece and Maloney-Krichmar (2003) observe that because face to face is the default we are used to, it has become the standard for judging other media (2003:567). There are also times when no matter which media is available, face to face communication is preferable because there is no substitute for the commitment of being there, sharing a hug, and getting a broad understanding of the context in which the conversation is occurring (Olson and Olson, 2000 in ibid.). As Baskin *et al.* (2004) put it 'face-to-face learning continues to act as the edge that defines what counts as learning' (2004:2).

Research shows that just placing learners in a group and put computer communication software to their disposal do not guarantee collaboration for learning (Soller, 2001; Wännman Thoresson, 2002; Rekkedal and Qvist-Eriksen, 2004 in Östlund, 2005:1). Wiesenberg and Hutton (1996), for example, observed some of the challenges related to computer-mediated communication (CMC) experienced by learners in graduate-based courses (Murphy and Coleman, 2004:1); these included the amount of time involved in participating in on-line conversations and the challenges of communicating without visual cues (ibid.).

Similarly, Magee and Wheeler (1997) suggest that participants may have difficulties with the loss of non-verbal cues; they cite Love (1992) who found that the

lack of social cues in electronic conferencing led to the subsequent development of 'emoticons' (figures created with character symbols on the keyboard that are used to convey the emotional context in which a line of text is typed) and he suggested that it was easy for a lack of a social dimension to group processes to lead to a drop in the number of contributions about the task (Magee and Wheeler, 1997:15 in Greg *et al.*, 2002:26-27).

Short *et al.* (1976) conducted an exhaustive review of the media comparison studies and reached the following conclusion:

In most cases, the function of non-verbal cues has been in some way related to forming, building or maintaining the relationship between interactants. The absence of the visual channel reduces the possibilities for expression of socio-emotional material and decreases the information available about the other's self-image, attitudes, moods, and reactions. So, regarding the medium as an information transmission system, the removal of the visual channel is likely to produce a serious disturbance of the affective interaction (1976:59-60).

In a similar context, Rourke and Anderson (2002) argue that three consequences of the reduced repertoire of communication cues are discernable in the computer conferencing literature, with the first being predicted accurately by Short *et al.* (1976), that is, the lack of information concerning mutual attention and awareness (2002: 261). Bullen (1998) has summarized his students' feeling in this regard by stating that 'the asynchronous communication left them feeling remote, detached, and isolated' (1998:10).

Another implication is that, and in line to the findings of this study, it is more difficult to achieve consensus in on-line discussion than face-to-face; Weisband (1992) found that electronic discussion reduces conformity and convergence as compared with face to face group discussion (Warschauer, 1997:475). In addition, there is also the danger of information overload; discussants can be so overwhelmed with messages that they ignore what others write and the conversation becomes 'a set of asocial monologues' (Moran, 1991 in *ibid.*).

Van de Hoof (1994) has shown that individuals are influenced by others' opinions and by past behaviour; medium characteristics such as cost, speed of information transfer and information-processing characteristics can be recorded

perfectly, these data, however have little or no influence on the ability to predict whether a decision is made to adopt a medium or not (Van Braak, 2001:44).

Many leading researchers in educational science explain knowledge and learning as socio-cultural, influenced by the theories of Vygotsky (Vygotsky, 1978) who postulated that interaction and collaboration between the individual and the social surrounding are central to learning (Östlund, 2005:1).

Social presence is required to enhance and foster on-line social interaction, a major vehicle of social learning (Tu, 2000:27). Anderson and Henderson (2004) have presented a helpful argument for the connection between sustained activity and social processes, which it could be usefully explored from the theoretical perspectives of situated learning, CoP, reflective practice and social presence theory (and its interrelated theories of social affordance and transactional distance) (2004:386). To this end, they present a summary of key theories in relation to sustainable professional development that should be taken into account when designing e-PD in ways intended to promote the desired sustainability that is manifestly lacking in current models (ibid.) and which is illustrated in the table that follows:

Situated Learning	CoP	Reflective Practice	Social Presence
<p>Learning occurs over time through legitimate peripheral participation of a community, which is sustained through the reproductive cycles of newcomers becoming old-timers (Lave and Wenger, 1991).</p> <p>Activity-based situated learning theory suggests that sustained engagement is supported by providing authentically complex contexts and activity (Herrington and Oliver, 2000).</p>	<p>Sustained learning is a characteristic of cohesive CoP. Cohesion is produced through mutual engagement, joint enterprise and shared repertoire (Wenger, 1998).</p> <p>A CoP can be designed for by providing a learning space which incorporates the dimensions of participation/reification, designed/emergent, local/global, and identification/negotiation (Wenger, 1998). Sustained trajectories though CoP are further supported by multiple modes of belonging, engagement, alignment, and imagination (Kreijns and Kirschner, 2001).</p>	<p>‘Critical friends’ provide not only valuable opportunities to make meaning from different perspectives but also sustain learning through socially supportive roles (Bonk et al., 2001).</p>	<p>Social presence theory argues that language and the medium of communication can affect perceptions of presence and therefore levels of alienation or engagement (Picciano, 2002).</p> <p>Transactional distance argues that the interplay of structure and dialogue impact on learners’ engagement (Faust, 2004).</p> <p>Social affordance argues that properties of an environment can trigger social interaction and therefore help sustain engagement (Kreijns and Kirschner, 2001).</p>

Table 2.5 Summary of Existing Influential Models for Sustainable Development (Anderson and Henderson, 2004)

The concept of community appears to be a pertinent matter as, in a similar context, Allard *et al.* (2007) have declared that their recent inquiry has led them to appreciate teachers’ needs to reflect on practice and their assumptions in supportive communities:

Through reflection, our assumptions become illuminated. This process is more difficult than we had anticipated. We understand, our judgements are based on our tacit theories, on values and beliefs that are culturally determined not explicitly articulated (Newman, 1987). Investigating the self may be seen as

self-absorbed and self-serving. Teachers reflect within and about practice, but often, do so alone without benefit of meaningful dialogue with colleagues. Our inquiry led us to appreciate teachers' needs to reflect on practice and their assumptions in supportive communities (2007:307).

2.5.1 On-line Learning Communities: A Magna Carta for the Knowledge Age² or a Learning Curve?

The open society, the unrestricted access to knowledge, the unplanned and uninhibited association of men for its furtherance - these are what may make a vast, complex, ever growing, ever changing, ever more specialized and expert technological world, nevertheless a world of human community (Oppenheimer, 1954:221).

The quality of teachers can be enhanced when teachers engage professionally in collaborative learning (Albion, 2003; Pratt, Lai and Munro, 2001) and CMC is argued to have great potential to foster collaboration connected to the real world (Son, 2004:111). In 2000, Carroll urged educators to recognize the power of communication technologies to bring about the needed transformation in education, making a number of predictions:

First, the purpose of education will move from being curriculum driven to being learning centered. Learning is a verb, not a noun— *learning* centered, not learner centered. The focus will be on the learning and collaborative knowledge construction in which we engage. It will not be driven by a fixed, structured curriculum. It will be driven by knowledge work in a networked learning community (2000:135).

A learning community consists in a group of people who take an active, reflective, collaborative, learning-oriented, and growth-promoting approach toward both the mysteries and the challenges of teaching and learning (Mitchell and Sackney, 2000:125). In contrast, technology-oriented definitions describe on-line communities by the software that supports them, with some of the most common terms being chat, bulletin board, listserver, UseNet News, MUDs (Multi-user dungeons), MOOs (Object-oriented MUDs), and web-based communities (Preece and Maloney-Krichmar, 2003:599). Such descriptions are concise and meaningful to those who know about software and while they indicate what conversation protocols are like,

² The subheading has been partially captured by the article 'Cyberspace and the American Dream: A Magna Carta for the Knowledge Age' (Dyson *et al.*, 1994).

they say little about social interaction in the community; for example, two defining characteristics are whether software is synchronous or asynchronous (Ellis, Gibbs and Rein, 1991 in *ibid.*).

Carroll (2002) makes a distinction of significance when she argues that a networked learning community is not a community of learners; a learning community learns ‘as a community’, unlike a community of learners in which each individual is engaged in his or her own learning (2000:122). In addition, and within the Knowledge Management domain, communities for professionals and others who share knowledge and resources are often referred to as ‘communities of practice’ (CoPs) (Wenger, 1998) to distinguish them from special interest communities and support communities; their members often have a shared task and well-defined roles (Feenberg, 1993) and they offer professionals emotional support as well as information and discussion (Moon and Sproull, 2000; Sproull and Faraj, 1997; Williams and Cothrel, 2000a in Preece and Diane Maloney-Krichmar, 2003:561). CoPs have been described as ‘groups of people informally bound together by shared expertise and passion for a joint enterprise’ (Wenger and Snyder, 2000 in Sharratt and Usoro, 2003:188).

In 1996, a multidisciplinary group of academics held a workshop at which they identified the following core characteristics of on-line communities (Preece and Maloney-Krichmar, 2003:596):

Members have a shared goal, interest, need, or activity that provides the primary reason for belonging to the community. Members engage in repeated, active participation and there are often intense interactions, strong emotional ties and shared activities occurring between participants. Members have access to shared resources and there are policies for determining access to those resources. Reciprocity of information, support and services between members is important. There is a shared context of social conventions, language, and protocols (Whittaker *et al.*, 1997:137).

Carroll (2000), not long after, identified three dimensions of a learning community; the first dimension is ‘knowledge transmission and conservation’ (in this learning mode, the community focuses its resources on ensuring that the young learn from the old stability is valued, and ‘Change is Bad’); the second dimension of a learning community is ‘knowledge adaptation’ (in this mode, traditions and existing knowledge are modified to accommodate new developments); and the third dimension of a learning community is ‘invention and knowledge generation’ (in this mode,

young and old learn to collaboratively construct new knowledge and through this collaborative learning, young and old join forces to create the future; the community values innovation and ‘Change is Good’) (2000:120). According to Carroll again, our educational system has suffered by largely ignoring the last two dimensions (ibid.).

2.5.2 The Benefits of Participating in an On-line Learning Community

On-line participants are part of a very recent and constantly accelerating history of change in how learning can be organised and conceptualised; this shift in emphasis to the ‘knowledge age’ (as opposed to the transmission-oriented ‘information age’) denotes an altered perception of people as agents, who share what we term ‘corporate responsibility’ for making their knowledge through collaborative processes:

The notion of ‘corporate responsibility’ invokes the professional domain of their learning, and means more than peer-to-peer collaboration. It is, rather, a process of engagement with shared professional phenomena, by which teachers develop critically informed orientations towards their roles as practitioners, and which engages their professional identities and the reassessment of the professional values that inform practice (Pachler and Daly, 2006:64).

Fullan (1995) also supports the need for collaborative versus individual reflection, for there is a ceiling on how much we can learn on our own, and argues that the goal in the *collegial professional phase* is the creation of ‘professional discourse communities’ in which knowledge evolves through reflective, progressive spirals of discussion by practitioners; Hargreaves (2000) suggests that professional development does not end with this phase though:

Hargreaves final or post-professional phase extends the notion of professional development to include input from peripheral parties. That is, groups that have a "stake" in the conduct and outcomes of education such as learners, community and/or government representatives, and researchers are included in ongoing reflective dialogue in order to more fully inform practice (Brandon, 1999; Cronbach, 1983; Kemmis, 1987; Roby, 1985; Schwab, 1973; Sparks and Hirsh, 1997 in Herod, 2003:18).

Allard *et al.* (2007) in speaking of the value of dialogue argue that collective reflection intensifies professional development:

Reflection occurs with two possibly connected strands – the personal and the social. The writer gains deeper personal understanding through revisions and editing of cases. This inquiry process is greatly enhanced through dialogue with others, extending it beyond the personal to the learning community and back again. Discussion is a community activity that causes our personal assumptions to surface and be transformed (2007:307).

Cobb (1994) has argued that learning should be viewed as both a process of active individual construction and a process of enculturation into the practices of wider society (1994:13). Situative³ theorists conceptualize learning as changes in participation in socially organised activities, and individuals' use of knowledge as an aspect of their participation in social practices (Greeno, 2003; Lave and Wenger, 1991), with several scholars arguing that learning has both individual and socio-cultural features, characterizing the learning process as one of enculturation and construction (Borko, 2004:4):

From a situative perspective, teacher learning is usefully understood as a process of increasing participation in the practice of teaching, and through this participation, a process of becoming knowledgeable in and about teaching (Adler, 2000:37).

Dede (2002) argues that 'Social Constructivist Models of Learning' are generally based on the educational philosophies of constructivism (students are active constructors of knowledge rather than passive recipients) and situated learning (social context and culture shapes individual understanding):

³ The term 'situative' refers to a set of theoretical perspectives and lines of research with roots in various disciplines including anthropology, sociology, and psychology (Borko, 2004:4).

Constructivist learning environments, as described by Jonassen (1996) are those in which students are ‘constructors and producers of personal knowledge (p.13). He contends that ‘when learners actively construct knowledge, it is more meaningful, applicable, and memorable’ (Jonassen, 1996:13). Building on Jonassen’s work, Maddux (2001) has identified attributes that foster SCLEs. Included among them are collaborative and cooperative learning, learning communities, and reflective learning (2002:10).

The Internet opens up opportunities not only for situated and collaborative learning but also for building on-line learning communities (Lai, 2001); Son (2004) argues that on-line communities can provide teachers with opportunities for ongoing learning in professional manners (2004:116). Professionally oriented networks can create knowledge-rich communities of practice (Blunt, 2001); Trewern and Lai (2001) argue that groups of teachers can get together and make use of communications technologies to access teaching resources, source new ideas, share ideas or innovative teaching practices, and reflect on aspects of classroom practice (2001:45).

Carroll (2000) convincingly argues that these interactive communication technologies give power to the learning revolution, which has been recently summarized in a book edited by Bransford *et al.* (1999) called *How People Learn*:

The learning revolution is about constructivist learning, and these new communication and information technologies allow us to facilitate constructive learning in ways that we could never do before. They are becoming *cognitive amplifiers* that will accelerate learning and the development of new knowledge in the same ways that machines accelerated production during the industrial revolution (2000:133-135).

2.5.3 Developing and Sustaining an On-line Learning Community

According to Allard *et al.* (2007) capacity for a learning community needs to be built deliberately and explicitly, and such communities require some sort of glue to hold the members together, whether that is a shared vision or common understanding of a common goal; capacity can be enhanced when members are able to maintain close contact and communication during and between regular meetings:

Through listening, interacting, considering, rejecting and constructing new knowledge, participants became a web, a support net for one another. One member observed ‘we accommodated each other’s learning styles, diversity and needs throughout. We encouraged discussion, opened and difference...to communicate and express our understandings (2007:311).

In a similar context, Bielaczyc and Collins (1999) state that the defining quality of a learning community is that there is a culture of learning in which everyone is involved in a collective effort of understanding (1999:271) and that there are four characteristics that such a culture must have: (1) diversity of expertise among its members who are valued for their contributions and given support to develop, (2) a shared objective of continually advancing the collective knowledge and skills, (3) an emphasis on learning how to learn, and (4) mechanisms for sharing what is learned (1999:272):

Imagine a collection of individuals, working in close proximity, sharing a common purpose and passion – a desire to learn ... Imagine this same collection of individuals, working closely together, sharing knowledge, aspiring to the same vision ... Imagine that same collection of individuals, sharing each other’s hopes and fears, empathizing emotionally, unleashing the power of their collective intelligences. This is a learning community (Collarbone, 2001 in Chapman *et al.*, 2005:218).

Previous studies have indicated the viability of communication technologies to promote dialogue within a community of reflective educators (Bos *et al.*, Loucks-Horsley, 1998 in Sundberg, 2002:4). However, Lucey *et al.* (2009) argue that the literature indicates the on-line community development occurs through stages and that the environments in which dialogue and collaborative reflection occur may relate to rates of progression; positive settings that prompt user comfort enhance reflective processes (2009:210).

Research also demonstrates the strong positive effect of interactivity on learning (Bosko, 1986); educational theory has long established that people learn material faster and have a better attitude toward learning material when they learn in a participative environment (Vygotsky, 1978; Bruner, 1986):

Constructivism encourages learners to develop meaningful, scaffolded, student-directed or deep learning, which takes into account individual differences, and is grounded in the daily world of learners' experience. Learning therefore, takes place within a social environment that encourages reflective dialogue and collaboration. Van Weigel (2002) even defines deep learning as 'learning that promotes the development of conditionalised knowledge and metacognition through communities of inquiry' (2002:xiv) (Chapman *et al.*, 2005:220-221).

Research outputs have demonstrated that matters related to interactivity and learners' motivation are often affected by challenges related to technological implications. Studies indicate that distance learners have periods of frustration, anxiety and confusion because of technical difficulties or because of delayed peer responses; some learners have reported feeling shame and even guilt when they were unable to address effectively technical related challenges to computer mediated communication (Blum, 1999; Hara and Kling, 2002; O'Reagan, 2003); these feelings have an influence on how the learners experience their participation in an on-line community, but also on the learning process as well, since negative feelings can reduce concentration, memory and motivation (Damasio, 1996; Sylwester, 1997 in Östlund, 2005:10).

Two important factors also related to motivation are the learners' feeling of belonging to a group and social presence of fellow students; learners increase their level of satisfaction if they feel involved in a learning community and can develop a relationship with other members of the community (Wegerif, 1998; Soller, 2001; Rovai, 2001; Kreijns, Krischner, Wim, 2003 in Östlund, 2005:5-7).

Thus, engagement in communities of practice is a fundamental process through which persons learn; according to Etienne Wenger (1998) and his colleagues (Wenger, 1998; Wenger, McDermott and Snyder, 2002), the social theory of learning focuses on learning as social participation, and his conceptual framework integrates components necessary to define these social experiences as a process of learning and of knowing (1998:4). The components include:

meaning, a way of talking about our (changing) ability; practice, a way of talking about shared historical and social resources; community, a way of talking about the social configurations in which our enterprises are defined as worth pursuing and our participation is recognizable as competence; and identity, a way of talking about how learning changes who we are and creates personal histories of becoming in the context of our communities (*ibid.*, 1998:5).

However, an on-line community takes time to evolve (Cox, 1997) and requires support in the form of professional, experienced on-line learning (White, 2001); for example, it has been observed that many members come to the on-line community space seeking information and quick answers to difficult question (Chapman *et al.*, 2005:219). Strategies such as ice breakers, an explicit statement of expectation regarding participation and congeniality, and guidelines for effective on-line behaviours need to be introduced at the early stages of developing an on-line community (*ibid.*).

Similarly, Lucey *et al.* (2009) argue that electronic communications offer mediums to prompt reflective engagement through structured processes; for example, Wade, Niederhauser, Cannon and Long (2001) posted weekly questions about inclusion for small groups of students and the small groups facilitated communities within the course, enabled dialogues, and fostered discussions (2009:200).

2.6 Concluding Remarks

This chapter has offered a critical analysis of the pertinent literature and in relation to the present empirical investigation. Initially, I framed the study within the landscape of technology evolution and pertinent research findings.

I then presented a critical analysis of the notion ‘reflection’, discussing implications regarding taxonomies and tools for assessing reflection, and I illustrated the theoretical background of reflexivity adopted in this thesis, introducing the ‘Scheme of Indicators for Determining Evidence of Reflection’, which emerged during the analysis of the empirical data.

Next, I presented an overview of emerging models and theories related to ICTs and teacher professional development, discussing models of on-line teacher professional development. The concept of computer mediated communication was also discussed and the interplay between its asynchronous mode and reflection was examined. Finally, the social dimension of asynchronous mediated communication was discussed, and implications related to matters around developing and sustaining on-line communities in the context of enhancing reflexivity were raised.

The section that follows, Section II, consists of three chapters (Chapters 3, 4 and 5), and it presents an analysis of the empirical investigation by discussing research design and methodology matters.

Section II

Principles and Perspectives: An Analysis of the Empirical Investigation

As the reader might recollect, the preceding section offered a discussion of the *Background to the Study* (Chapter 1) and a *Critical Analysis of the Pertinent Literature* (Chapter 2). Section II consists of Chapters 3, 4 and 5.

In this section, I wish to advocate for presenting an *analysis* of the empirical investigation into those instances where *analysis* means breaking the present inquiry ‘into its constituent parts and viewing them in relation to the whole they form’ (Ragin, 1994:55). In essence, the analysis of the present empirical investigation involves breaking down to its key component parts so that it no longer appears to be ‘an amorphous, teeming mass of revolutionaries, but rather can be seen as a combination of key elements and conditions; these elements can be viewed in isolation from one another, and they can be understood in the context of the other parts’ (ibid.).

For instance, and in the context of the present inquiry, the idea of the *paradigm* could be examined both in isolation (What are the key ideas behind *interpretivism?*) and in relation to the formulation of the research question, the research methodology, data collection and analysis methods, or in the context of seeking *causal explanation* (How do these key ideas resonate with the methods of data collection and analysis or with searching for *causal explanation?*). I see this understanding of the concept *analysis* (exploring or offering an explanation of something in terms of its aspects or

parts) as an essential background to presenting an *analytic frame* of the present empirical investigation (Ragin, 1994:56) because it constitutes a way of seeing.

Hereto, this section reports on the research approach employed in this thesis, i.e. it describes the procedures adopted and illustrates the instruments employed for data collection and analysis by drawing upon the pertinent literature, and argues for the criteria assumed for evaluating the present empirical account.

Yet, and ‘to jump the gap between data and theory’ (Collin, 2002:50), I feel one would also need to report on the (value-led) principles that guide the inquiry, the former acting as a set of ‘coherence conditions’ (to borrow a term employed by Hesse, 1980) in providing *unity* throughout the research process.

In these lines, I will first describe and explain my ‘social, philosophical and physical location in the study’ (Denzin and Lincoln, 2000:389) within the context of conducting social scientific research (Chapter 3), and progress the discussion by reporting on the research approach employed in this thesis, arguing for the criteria assumed for evaluating the present empirical account and concluding with remarks on the limitations to be taken under consideration (Chapter 4). Chapter 5 builds on the preceding discussion regarding the criteria assumed for evaluating this research study by portraying a narrative description of how the ‘Scheme of Indicators for Determining Evidence of Reflection’ evolved and in order to make the decisions about the development of the scheme both more explicit and transparent.

Chapter 3

Social Scientific Research: Principles and Perspectives

3.0 Introduction

As the reader might recollect, the central foci throughout the present enquiry have been to examine whether, and if yes, how reflective thinking - as a meaningful professional development objective - is promoted through collaborative asynchronous computer mediated communication (ACMC) by comparison with traditional face-to-face discussion.

In this chapter, I wish to advocate for presenting an *analysis* of the empirical investigation into those instances where *analysis* means breaking the present inquiry 'into its constituent parts and viewing them in relation to the whole they form' (Ragin, 1994:55). In essence, the analysis of the present empirical investigation involves breaking down to its key component parts so that it no longer appears to be 'an amorphous, teeming mass of revolutionaries, but rather can be seen as a combination of key elements and conditions; these elements can be viewed in isolation from one another, and they can be understood in the context of the other parts' (ibid.).

I see this understanding of the concept *analysis* (exploring or offering an explanation of something in terms of its aspects or parts) as an essential background to presenting an *analytic frame* of the present empirical investigation (Ragin, 1994:56) because it constitutes a way of seeing.

Hereto, this chapter reports on the research approach employed in this thesis, i.e. describes the procedures adopted and illustrates the instruments employed for data collection and analysis by drawing upon the pertinent literature, and argues for the criteria assumed for evaluating the present empirical account.

3.1 Social Scientific Research: Traditions and Contradictions, Tensions and Emerging Confluences

Traditionally, social research has involved a dialogue amid philosophical axioms that may underpin research, considerations concerning the formulation of research questions, the decisions made in designing the research methodology, the process of collating the data (or evidence), the articulation of ideas that will help researchers make sense of the evidence and the course of action in making explicit arguments on the goodness of the evidence gathered. It has also been apparent that intense conversations have been taking place amongst scholars, the latter arguing whether ‘there is’ (and to what degree) or whether there ‘should be’ a correlation amongst all these *steps* or *instances* in the process of conducting social research.

On these grounds, most accounts on empirical investigations ‘begin with some attempt to define’ (Ritchie, 2003:2) the author’s stand on the overall research strategy implemented and conclude with reflections on evaluating the empirical account by engaging in discussion around validity and reliability.

I ‘will follow this honoured tradition’ (ibid.) because I feel it is important to locate myself ‘in the face of essential paradigmatic differences and inherent contradictions among styles and types of research (Denzin, 2000:xi), and also because it is essential that the reader ‘understands where and how I situate my approach within the broader field of research designs in order to assess the value and appropriateness of the present research practice’ (Ritchie, 2003:2), which unfolds in the following pages.

3.1.1 Background to Social Scientific Inquiry

During most of the 20th century, social and behavioural research was dominated by ‘quantitative methods’ with positivism (and variants thereof such as postpositivism) as its dominant worldview (Tashakkori and Teddlie, 2003:ix). In

summarizing the quantitative approach to inquiry, Flick (1998) observes that it has been used for purposes of isolating causes and effects, operationalizing theoretical relations and measuring and quantifying phenomena allowing the generalization of findings (1998:2-3).

However, today doubt is cast on such projects, since rapid social change and the resulting diversification of life worlds are increasingly confronting social researchers with new social contexts and perspectives, and traditional deductive methodologies are failing; thus, research is increasingly forced to make use of inductive strategies instead of starting from theories and testing them (Denzin and Lincoln, 2003b:14-15).

In the same vein, Langenhove (1996) makes a point when he argues that social sciences are dominated today by positivism and nomothetic and quantitative thinking, and that, unless a non-positivist view of science is adopted, social sciences will not be able to make much progress in explaining and understanding man and society (Harre, 1979; Harre and Secord, 1972 in Langenhove, 1996:46).

Vidich and Lyman (2003) observe that ‘modern social sciences disciplines have taken as their mission the analysis and understanding of the patterned conduct and social processes of society’ and this has resulted in a proliferation of ‘qualitative methods’ in research (2003:55). Such a view implies an emphasis on qualitative methods, case studies, action research, and above all dialogue between researchers and those who are the ‘subjects’ of research (Smith *et al.* in Langenhove, 1996:46).

Overall, ‘there has been a fairly wide consensus that qualitative research is a naturalistic, interpretive approach concerned with understanding the meanings which people attach to phenomena within their social worlds’ (Ritchie and Lewis, 2003:3).

3.1.2 The Landscape of Qualitative Research: Theoretical Paradigms and Perspectives⁴

Qualitative research is as old as social science itself, well over a hundred years: 1842 is regarded as the birth year of sociology by those who consider Auguste Comte its founder; in 1871 anthropology matured into a discipline with Edward Taylor’s work *Primitive Culture*; in 1878 William James established the first course in

⁴ The subheading ‘The Landscape of Qualitative Research’ has been captured from the text book entitled *The Landscape of Qualitative Research: Theories and Issues* edited by Denzin and Lincoln (2003b).

psychology, whilst education as a discipline did not surface until the twentieth century (Tesch, 1990:9).

In sociology, the work of the ‘Chicago school’ in the 1920s and 1930s established the importance of qualitative inquiry for the study of human group life and soon qualitative research would be employed in other social and behavioural science disciplines, including education (especially the work of Dewey), history, political science, business, medicine, nursing, social work, and communications (Denzin and Lincoln, 2003b:1).

There is no single wellspring of qualitative research. Its history is extensive, drawing from the evolving curiosities of humankind over the centuries, formally disciplined by ethnographers, social psychologists, historians, and literacy critics (Bogdan and Biklin, 1982; Eco, 1994; Hamilton, 1981; Stake, 1978 in Stake, 1995:35).

Thomas Schwandt (2003), in observing that ‘qualitative’ inquiry is among other things the name for a reformist movement that began in the early 1970s in the academy, states that the interpretive paradigm is central to this movement (Denzin and Lincoln, 2003b:viii).

In discussing the concept of *paradigm*, Guba (1990) explains that ‘the net that contains the researcher’s epistemological, ontological, and methodological premises may be termed as *paradigm*, or an ‘interpretive’ framework, a basic set of beliefs that guides action’ (1990:17). Nelson *et al.* (1992) in arguing for the paradigm and the theories that frame the context of qualitative research explain:

Qualitative research is an interdisciplinary, transdisciplinary, and sometimes counterdisciplinary field. Qualitative research is many things at the same time. It is multiparadigmatic in focus. Its practitioners are sensitive to the value of the multimethod approach. They are committed to the naturalistic perspective and to the interpretive understanding of human experience (Nelson *et al.*, 1992:4).

And they go on to declare:

Qualitative research embraces two tensions at the same time. On the one hand, it is drawn to a broad, interpretive, post experimental, postmodern, feminist, and critical sensibility. On the other hand, it is drawn to more narrowly defined

positivist, postpositivist, humanistic, and naturalistic conceptions of human experience and its analysis. Further, the tensions can be combined in the same project, bringing both postmodern and naturalistic or both critical and humanistic perspectives to bear (ibid.).

Their view coincides nicely with Denzin and Lincoln's stance that the open-ended nature of the qualitative research project leads to a perpetual resistance against attempts to impose a single, 'umbrellalike' paradigm over the entire project (Denzin and Lincoln, 2000:xv).

Indeed, the panorama of work represented at professional meetings or in publications is vast and not highly defined (Ball and Forzani, 2007:530). Further, scholars have referred to the qualitative *approach, perspective, paradigm, methods, research, enquiry, findings, theory, researcher, and data* without making any clear-cut distinctions between these terms, further promoting the category of 'qualitative' as an homogenous and all-inclusive label (Rolfe, 2006:306).

3.1.3 The Quantitative and Qualitative Divide: A Vicious Circle or Simply the Wrong Question?

At the same time, and as a result of the increasing popularity of qualitative research and the identification of philosophical distinctions between traditional *postpositivist* and *naturalistic* research, a 'flurry of philosophical discussions' (Southerland *et al.*, 2005:1) has surfaced leading to the so-called *paradigm debate* (Reichardt and Rallis, 1994).

Guba and Lincoln (1988), for example, identified paradigm differences between postpositivist philosophical assumptions and naturalistic assumptions in terms of epistemology (how we know what we know), ontology (the nature of reality), axiology (the place of values in research), and methodology (the process of research) (Hanson *et al.*, 2005:225). This has led to a dichotomy between traditional inquiry paradigms and naturalistic paradigms (ibid.).

This debate about the relationship between rationalistic [quantitative] and naturalistic [qualitative] research paradigms has been characterised as being often *muddled* and *confused* (Bryman, 2002), and the clutter of terms and arguments has resulted in the concepts becoming *obscure* and *unrecognisable* (Morse *et al.*, 2002 in Tobin and Begley, 2004:389).

In these lines, and in response to Hope and Waterman's (2003) stance in the ongoing debate about the quantitative and qualitative research paradigms, Rolfe (2006) suggests that the answer lies in our conceptions of what we take the term 'qualitative research' to mean, and particularly in the ways that we usually distinguish between the qualitative and quantitative research paradigms:

These distinctions are sometimes made solely on the type of data being collected, such that quantitative researchers gather numerical data whilst qualitative researchers are concerned with textual data (see, for example, Polit & Hungler 1995, p.15). This is seen as over simplistic by some writers, who make the distinction on epistemological or even ontological rather than methodological grounds (Rolfe, 2006:305).

Guba and Lincoln (1998) made a similar point when they argued that the term 'qualitative' should be reserved for a description of data collection methods and suggested the alternative paradigms of postpositivism, critical theory and constructivism (Rolfe, 2006:307).

Equally, Henwood and Pidgeon (1993) offer their point of view when they argue that part of the confusion has come from the narrow association of qualitative methodology, either with particular modes of data gathering or its non-numeric character in the analysis and interpretation of data, both of which are always conducted within some broader understanding of what constitutes legitimate inquiry and *warrantable knowledge* (Henwood and Pidgeon, 1993:14-15).

In this respect, the quantity - quality debate has been anchored within two apparently opposed epistemological positions, the two poles known variously as 'experimental', 'hypothetico-deductive' or 'positivist' and the 'naturalistic', 'contextual' or 'interpretative' approaches respectively (ibid.:15).

The Blurring of Genres

Yet, and in the last decade, substantial change has occurred in the landscape of social scientific inquiry, where the prophesy about 'the blurring of genres' is rapidly being fulfilled and the various paradigms are beginning to 'interbreed' such that two theorists previously thought to be in irreconcilable conflict may now appear, under a different theoretical rubric, to be informing one another's arguments (Lincoln and

Guba, 2003:253-254). In fact, they direct us to a personal example of theirs in a work which has been heavily influenced by action research practitioners and post-modern critical theorists (ibid.:254).

Appleton and King (2002), in examining the philosophical underpinnings (or methodologies) of 1) constructivism, 2) postpositivism, 3) critical realism (in terms of realistic evaluation) and 4) participatory inquiry, identified commonalities that have resulted in the emergence of a generic research strategy gaining increasing popularity in health services research: ‘often this research approach appears to be operationalised without any debate about the differing philosophical standpoints of constructivism and other qualitative methodologies’ (Appleton and King, 2002:641). Hanson *et al.* (2005) take this point of view a step further and, in discussing the ‘paradigm–method fit’ issue, they ask: ‘Do philosophical paradigms and research methods *have* to fit together?’ (2005:225).

There has been a flurry of philosophical discussions (Southerland *et al.*, 2005:1) about how one might combine what are sometimes called the ‘two modalities’, the ‘qualitative’ and ‘quantitative’ approaches to social research, which generally ends up suggesting a division of labour, in which qualitative research generates hypotheses and quantitative research tests them (Becker, 1996:66). This question is invariably raised, and this solution proposed, by quantitative researchers, who seem to find it an immense problem, and never by qualitative researchers, who often just go ahead and do it: ‘they don’t think it’s a problem because they focus on questions to be answered, rather than procedures to be followed’ (ibid.).

To add to this, Stake (1995) argues that ‘getting comfortable about the distinction between qualitative research methods is important’ (1995:xii). In essence, Stake argues that the distinction between quantitative and qualitative methods is a matter of emphasis - for both are mixtures; for example, in ethnographic or naturalistic studies (i.e. qualitative studies), enumeration and recognition of differences-in-amount have prominent places, whilst in statistical surveys and controlled experiments (i.e. quantitative studies), natural-language description and researcher interpretation are important (Stake, 1995:36).

In the same context, Becker (1996) asserts that the similarities between these methods are at least as, and probably more, important and relevant than the differences and, in fact, declares that the same epistemological arguments underlie and

provide the warrant for both (1996:53). Thus, he asks and answers the question eloquently:

How so? Both kinds of research try to see how society works, to describe social reality, to answer specific questions about specific instances of social reality. Some social scientists are interested in very general descriptions, in the form of laws about whole classes of phenomena. Others are more interested in understanding specific cases, how those general statements worked out in this case. But there's a lot of overlap (ibid.).

And in discussing the matter of *emphasis*, he explains:

The two styles of work do place differing emphasis on the understanding of specific historical or ethnographic cases as opposed to general laws of social interaction. But the two styles also imply one another. Every analysis of a case rests, explicitly or implicitly, on some general laws, and every general law supposes that the investigation of particular cases would show that law at work. Despite the differing emphases, it all ends up with the same sort of understanding, doesn't it? (ibid.).

Still, and regardless of their obvious merits, each of the two basic approaches to research has been criticised by proponents from the other orientation (Tashakkori and Teddlie, 2003:x-ix) and, despite acknowledgments by research scholars that the quantitative – qualitative divide should not be viewed in binary terms, the dichotomy persists (Luttrell, 2005:185).

3.1.4 Mixed Methods Research: An Alternative Perspective. Or is it?

On the whole, and although much of the controversy has focused on *paradigm* or *worldview*, each camp has also criticised the other's methods of study, the rigor of its procedures, and the validity of its outcomes (Tashakkori and Teddlie, 2003:x-ix).

In this 'inability to settle the question' (Becker, 1996:53), and as both sides continue to draw *unrelenting fire* (Ball and Forzani, 2007:538), the field of 'mixed methodology' or 'mixed methods research' (Johnson and Onwuegbuzie, 2004) has surfaced. Tashakkori and Teddlie (2003) call it the 'third methodological movement'

and argue that it has evolved as a result of these discussions and controversies and as a pragmatic way of using the strengths of both approaches (2003:x-ix).

Indeed, the perspective exists today that multiple methods may be used in a single research study to, for example, take advantage of the ‘representativeness’ and ‘generalizability’ of quantitative findings and the in-depth, contextual nature of qualitative findings (Greene and Caracelli in Hanson *et al.*, 2005:225). Bryman (2006) argues that ‘these are exciting times for writers and researchers concerned with the process of mixing different research methods and approaches to research generally’ (Bryman, 2006:5). However, despite this growth and development, a number of controversial issues and debates have limited the widespread acceptance of mixed methods research (Greene and Caracelli in Hanson *et al.*, 2005:225).

Freshwater (2006), in a recent *focus editorial*, is being sceptical of Bryman’s enthusiasm by highlighting her uncertainty of using the term ‘excitement’ to describe ‘this interest’ and offers the counter-argument that ‘it should be observed that social scientists have been mixing methods and data sources for decades; thus, mixed-methods research is not a new phenomenon, despite its growing popularity’ (Freshwater, 2006:179). Becker (1996) seems to agree when discussing the question about how one might combine what are sometimes called the ‘two modalities’, the qualitative and quantitative approaches to social research:

And how do researchers actually go about combining these different kinds of data? This is not an easy matter to summarize briefly, because qualitative researchers have been doing this for a very long time, and there are many examples of it being done in many parts of the literature (Becker, 1996:66).

This type of ‘peaceful coexistence’ between methodological paradigms (Erzberger and Prein, 1997:146) has also been criticized by Luttrell (2005) who argues that the recent call for ‘mixed methods research’ does not adequately resolve the problem, and in fact, serves to mask the stamp of superiority bestowed on quantitative research (2005:189). In the same vein, Rolfe (2006) argues that, if the terms ‘qualitative’ and ‘quantitative’ refer merely to data collection methods, then there is really very little at issue with mixed methodology studies (2006:306).

Furthermore, Hanson *et al.* (2005) observe that, despite the momentum mixed methods research has gained over time as a viable alternative research method, a

number of controversial issues and debates have limited its widespread acceptance: two important and persistent issues, the *paradigm–method fit* and the *best paradigm* issues, have inspired considerable debate regarding the philosophical basis of mixed methods research; from this perspective, mixed methods research was viewed as untenable (i.e., incommensurable or incompatible) because certain paradigms and methods could not *fit* together legitimately (Smith in Hanson *et al.*, 2005:225-226).

3.1.5 Moments: Personal Reflections

Indeed, this wide-ranging representation with a fascinating mix of foci that take one beyond narrow preoccupations is a gratifying development and one that augurs much (Thomas and Pepin, 2006:127).

However, all these voices have also seriously questioned the practice of social scientific inquiry, in that the many debates about ‘critical questions about paradigmatic boundaries or about what is methodologically correct’ in conducting social research have not yet reached ‘a consensus about how to study phenomena’, let alone ‘provoking radical changes in the mainstream activities of the academic community’ (Langenhove, 1999:46-48). At best, it has only resulted in excitement or healthy self-reflection; at worst, it has been experienced as anxiety-provoking and threatening (*ibid.*).

Still, it is through walking this pathway of complexities and controversies in the landscape of social scientific inquiry that one becomes equipped to make more informed decisions about the way forward, in that, it is one’s this ‘kind of collective consciousness [that] produces the intellectual results’ (Maxwell in Fodor, 1934).

What strikes me at this point is how ‘words muddle our thoughts if they are misused and how philosophical problems arise through misuse of language because this misuse produces pseudo-concepts and pseudo-problems’ (Wittgenstein in Trusted, 1981:5). In these lines, Ayer (1963) highlights the Wittgensteinian verbatim that ‘the remedy [is] to trace the muddle to its source by exposing the linguistic misconceptions from which it arose’ (1963:7).

With these thoughts in mind, and in feeling in the midst of such a swirl of ‘personal proclivities’ (Luttrell, 2005:189) and contradictions, I feel the need to *go back to the basics* and ask myself: What is the role and purpose of social scientific

inquiry? I wish to do so because I want to understand and, in doing so, I feel it is an onus to explain my understanding.

3.1.6 With a Glimpse into the Past and an Eye to the Future: The Role and Purpose of Social Scientific Inquiry

About a century ago, philosopher Wilhelm Dilthey argued that science was not moving in the direction of helping humans understand themselves:

Only from his actions, his fixed utterances, his effects upon others, can man learn about himself; thus he learns to know himself only by the round-about way of understanding...We understand ourselves and others only when we transfer our own lived experience into every kind of expression of our own and other people's lives (Dilthey in Stake, 1995:35-36).

Social sciences has also undergone a kind of crisis of purpose, with its more thoughtful practitioners daring to question what their purpose might be and whom they do, or should, serve (Lincoln and Denzin, 2003:6).

Historically, the emergence of social sciences may be identified within a context related to power, to coping with problems and to societal change; consequently, they are closely linked to the pursuit of answers to concrete problems and this makes it possible to differentiate the intellectual roots of the social sciences from those of the natural sciences: they are closely tied to what we today would call *applications* (Langenhove, 1999:45).

On the other hand, walking the distance from those concrete problems to their solution has been no easy journey with the key question about *how we know what we know* often dominating the discussions amid scholars. According to Becker (1996), epistemology has been seen as a 'traditionally *negative* discipline, mostly devoted to saying what you shouldn't do if you want your activity to merit the title of science, and to keeping unworthy pretenders from successfully appropriating it; in other words, traditionally epistemological disciplines were concerned primarily with *oughts* rather than *is's*, settling their questions by reasoning from first principles rather than by empirical investigation' (1996:53-54).

However, this lack of unity has seriously questioned the practice of social scientific inquiry and one might think that this would have provoked radical changes

in how social science research is conducted, but the many critical questions about paradigmatic boundaries or about what is methodologically correct have on the whole not changed the mainstream activities of the academic community (Langenhove, 1999:48). This has been evident, for example, in Keeves and Lakomski's argument that there is a proliferation of confusion over both the term 'paradigm' and the problem of unambiguously identifying paradigms of educational research (Keeves and Lakomski, 1999:47).

Important as such preoccupations can be, occasionally they can become involuted in such a way that they distract attention from the broader concerns of educators (Thomas and Pepin, 2006:127). Echoing that, Ball and Forzani (2007) make the point that debates about method and evidence have swamped the discourse on education research to the exclusion of the fundamental question of what constitutes education research and what distinguishes it from other domains of scholarship (Ball and Forzani, 2007:530).

Langenhove (1999), in offering his point of view in a piece of work entitled 'Rethinking the Social Sciences', argues that research driven by problems and their driving forces is urgently needed (1999:49) and he further goes on to declare that:

Social science has to be brought into the public sphere by promoting research that brings together researchers, those who play a role in the phenomena researched, and those who are in a position to make decisions about the phenomena studied. We are urgently in need of a scientific community that seeks to advance the scientific study of societies and people so as to generate theoretical and practical insights that can lead to the empowerment of people in governments, industry and civil society (ibid.:47-48).

In this context, Byram and Feng (2004), and in discussing work on the cultural dimension of second and foreign language learning, present what they call 'the first-order distinctions', i.e. 'research' and 'scholarship', the former seeking for *explanation* or *understanding* (two different perspectives on 'what is'), the latter attempting to establish 'what ought to be', and sometimes attempting to implement and evaluate 'what ought to be':

Research in the 'sciences of education' – to use a designation borrowed from some European traditions – can be broadly categorised under three headings: work which seeks to establish explanations in terms of cause and effect, work

which seeks to understand the experience of people involved in education, and work which attempts to create change (2004:150).

On these grounds, they go on to declare that ‘they are not following the distinction frequently made between quantitative and qualitative research, which is in their view a ‘second-order distinction’, as research which is explanatory in purpose can draw on quantitative and qualitative methods and data, as can research which is searching for understanding, or scholarship attempting to advocate and introduce new practices’ (ibid.).

It is in this context that I will now turn to define and describe my stance for the adopted study and design in the field of the present inquiry.

3.2 The Stance in this Thesis

There are a few words I feel that need to be said before I reveal my stance for the philosophical underpinnings and the research design within which the present inquiry is bound. First, and in view of the preceding prolonged discussion, I would like to highlight that I acknowledge that there is a plethora of views that ‘reflect different ways of making knowledge claims’, and I wish to advocate for honouring and respecting the different paradigmatic perspectives that researchers bring to bear on a study (Hanson *et al.*, 2005:226).

Second, and whilst bearing in mind that the reader will endeavour to elaborate evaluative judgements of the *correctness* of my articulations further below, I would like to emphasize that I wish to advocate for the superiority of an argument that achieves its goals through identifying and resolving a contradiction in the original interpretation, pointing to confusion that interpretation relied on or acknowledging the importance of some factor which it screened out (Smith in Schwandt, 2003:325).

Finally, I wish to draw from Solzhenitsyn (1993) who once pointed out that ‘no new work of art comes into existence (whether consciously or unconsciously) without an organic link to what was created earlier’ (Vidich and Lyman, 2003:87).

3.2.1 ...many arrows, loosed several ways, fly to one mark...⁵

This is a research study, bound ‘within the sciences of education, that seeks to establish explanation in terms of cause and effect’ (Byram and Feng, 2004:150), i.e. it is searching for a causal explanation of difference, where independent variables of two kinds – face to face and asynchronous – are compared for the outcomes in dependent variables. It takes an *educational perspective*⁶ in *research in education* (complementary to the theoretical perspectives offered by other disciplines), in that, through this educational perspective, it offers a lens for presenting and studying particular sorts of phenomena as forms of teaching and learning (Ball and Forzani, 2007:530).

From a theoretical perspective, the present inquiry has been influenced by the *situative theory* which conceptualizes learning as changes in participation in socially organised activities, and individuals’ use of knowledge as an aspect of their participation in social practices (Greeno, 2003; Lave and Wenger, 1991 in Borko, 2004:4), and by *connectivism* which acknowledges that learning can reside outside of ourselves e.g. within an organisation or a database (Siemens, 2004).

Specifically, I utilize an interpretive approach to this ‘empiricist venture’ (Crotty, 1998:28):

From an interpretivist point of view, what distinguishes human (social) action from the movement of physical objects is that the former is inherently meaningful...to find meaning in an action, or to say one understands what a particular action means, requires that one interprets in a particular way what the actors are doing (Schwandt, 2003:296).

I understand that this process of *interpreting* or *understanding* (of achieving *Verstehen*) is differentially represented, and therein lie some important differences in philosophies of interpretivism (and between interpretivism and philosophical hermeneutics); I wish to define (theorize) the notion of interpretive understanding (*Verstehen*) in this study through the representation of analysis of language

⁵ William Shakespeare, Henry V in Crotty (1998:1).

⁶ Ball and Forzani (2007) in a recent article entitled *What makes Education Research ‘Educational’?* label an approach to research that focuses inside educational transactions, which they call *research in education* and distinguish it, without implying superiority, from inquiry into *phenomena related to education*.

approaches that take their inspiration from Wittgenstein's *Philosophical Investigations*, especially the work of Peter Winch (1958):

Human action is meaningful by virtue of the systems of meanings (in Wittgenstein's terms, the 'language game') to which it belongs. Understanding those systems of meanings (institutional and cultural norms, action-constituting rules, and so on) is the goal of *Verstehen* (Schwandt, 2003:298).

The crux of the epistemological considerations that form the central thrust of this study (Bryman, 2004:13) demonstrates an affiliation to the neo-Kantian desire to emphasize the contribution of human subjectivity (i.e. intention) to knowledge without thereby sacrificing the objectivity of knowledge; in other words, interpretivists argue that it is possible to understand the subjective meaning of action (grasping the actor's beliefs, desires and so on), yet do so in an objective manner (Schwandt, 2003:298).

I wish to reserve the term *constructivism* for epistemological considerations focusing exclusively on the 'meaning-making activity of the individual mind' and to use *constructionism* where the focus includes the 'collective generation [and transmission] of meaning', i.e. one might have a *constructivist* view of scientific knowledge of the natural world but a *constructionist* view of scientific knowledge of the social world (Crotty, 1998:58). I wish to support a *constructionist* view of both, as *constructivism* tends to resist critical spirit whilst *constructionism* tends to foster it (ibid.).

...human beings do not find or discover knowledge so much as we construct or make it; we invent concepts, models, and schemes to make sense of experience, and we continually test and modify these constructions in the light of new experience. Furthermore, there is an inevitable historical and sociocultural dimension to this construction. We do not construct our interpretations in isolation but against a backdrop of shared understandings, practices, language, and so forth (Schwandt, 2003:305).

This social constructionism is sometimes also called *perspectivism* (so called in contemporary epistemology, e.g. Fay, 1996): the view that all knowledge claims and their evaluation take place within a conceptual framework through which the world is described and explained (ibid.:306).

Social constructionism is at once realist and relativist: to say that meaningful reality is socially constructed is not to say that it is not real (Crotty, 1998:63). From the constructionist viewpoint, therefore, meaning (or truth) cannot be described simply as 'objective'; by the same token, it cannot be described simply as 'subjective' (ibid.:43): moreover, constructionism embraces the whole gamut of meaningful reality, and this reality is socially constructed (ibid.:54). It has to be said though that, and in this instance, 'socially' means 'collective' (Collin, 2002:5). Collin goes on to declare:

The debate is not about the reality of certain entities postulated by science but of entities known to and considered real by everyday agents (or, as couched in the alternative terminology, it is not about the truth of theoretical facts, but about everyday facts) (Collin, 2002:19).

In these lines, the present study adopts an 'ontological formulation' (Lincoln and Guba, 2000:176) within constructionism that assumes a '*relationist* construal of [its] relativist premise' (Collin, 2002:54). To this end, Collin explains vividly:

The relativist claim may be understood...as referred to the rationality standards valid in one society, the (social) world is such-and-such, in terms of the standards of another, it is different. This is not to say that members of either society live in different worlds, but merely that they view it from different cognitive perspectives. They are like people who observe the same landscape from different mountain peaks (ibid.).

In a similar vein, Berger and Luckman (1967) conclude succinctly:

...knowledge about society is thus a realization in the double sense of apprehending the objectivated social reality, and in the sense of ongoingly producing this reality...The sociology of knowledge understands human reality as socially constructed reality (Berger and Luckman, 1967:84, 210-11).

In sum, I have argued that I feel comfortable to make the following claims for the present work: it is an inquiry that lies within an *interpretive* framework that assumes a *constructionist* view for its epistemological considerations and an ontological formulation within *constructionism*, which embraces the whole gamut of

reality (i.e. reality is both objective and subjective), and that, in the present study, it adopts a *relationist construal* of its relativist premise.

However, ‘to understand the activities of an individual, scientific investigator, we must take account not only of his relation to the phenomena which he investigates, but also his relation to his fellow scientists’ (Winch in Segerstedt, 1966:66). I wish to translate the latter and within the context of the present inquiry by acknowledging that there is a long-lasting debate about the *quantitative* and *qualitative* research distinction and that, because of this, one might query how the present study *fits* within the current quantitative and qualitative debate.

To this end, I would like to present a view of how the present inquiry might fit nicely within the qualitative research campus whilst embracing causation, and by addressing a *prima facie* objection to the argument in the discussion that follows.

3.2.2 A *Prima Facie* Objection to the Argument ⁷

It is my understanding that, and at first glance, one might offer a counterargument to the preceding reasoning for the present empirical investigation, i.e. that this study may also fit nicely within the qualitative campus. A possible criticism might lie in the following argument:

The positivist paradigm emphasizes universal laws of cause and effect based on an explanatory framework which assumes a realist ontology; that is, that reality consists of a world of objectively defined facts. The hypothetico-deductive method then is the principal means by which causal relationships are established (Henwood and Pidgeon, 1993:15).

In the preceding, and in attempt to address the above argument, I have declared that the central foci throughout the present enquiry have been to examine *whether*, and if yes, *how* reflective thinking - as a meaningful professional development objective - is promoted through collaborative asynchronous computer mediated communication (ACMC) by comparison with traditional face-to-face discussion. I have also explained that the present study is searching for a *causal explanation of difference* where

⁷ The subheading ‘A *Prima Facie* Objection to the argument’ has been captured from the text book entitled *Social Reality: The Problems of Philosophy* authored by Finn Collin (2002:53).

independent variables of two kinds – face to face and asynchronous – are compared for the outcomes in dependent variables.

It would appear then that I have to argue for two instances as, and at first glance, one might argue that the following contradict the philosophical underpinnings lying within the qualitative campus: a) the meaning of the word *whether* in the research question, which seems to imply a hypothetico-deductive approach to the study, and b) the search for *causal explanation* of difference between two independent variables.

First of all, and in an attempt to clarify the meaning of the word *whether* as adopted in the formulation of the research question, I wish to emphasize that by no means I have employed the ‘Principle of Deductive Closure’⁸ (PDC) approach, i.e. I have not employed a deductive approach with reference to the relationship between theory and research, as I do not wish to advocate for justification transmitted through deduction from propositions one is justified in believing (Lemos, 2007:24-26).

On the contrary, I wish to argue, and after Crotty (1998), for the case of *intentionality* and to emphasize that I assume an *intentional* approach to the formulation of the research question that drives the present study. It is important to note that ‘intentionality’ and ‘intentional’ as employed here have nothing to do with ‘purpose’ or ‘deliberation’; Crotty’s argument is instructive here:

The root stem of these words is the Latin *tendere*, which means ‘to tend’ – in the sense of ‘moving towards’ or ‘directing oneself to’. Here ‘in-tending’ is not about choosing or planning but about *reaching out into* (just as ‘ex-tending’ is about *reaching out from*). Intentionality means referentiality, relatedness, directedness, ‘aboutness’ (Crotty, 1998:44).

The concept of *intentionality* is one that fits well within the campus of constructionism: it ‘mirrors the concepts of intentionality in that objectivity and subjectivity need to be brought together and held together indissolubly’ (ibid.).

An equally interesting argument may be found in Fulk’s *et al.* (1992) discussion of *context-specific hypotheses* when they refer to Georgoudi and Rosnow’s (1985)

⁸ The Principle of Deductive Closure: If *S* is justified in believing that *p* and *p* entails *q* and *S* deduces *q* from *p* and accepts *q* as a result of this deduction, then *S* is justified in believing *q*. The PDC tells us roughly that justification is transmitted through deduction from propositions one is justifying in believing (Lemos, 2007:25).

approach to *contextualism*⁹ which focuses on the nature of context itself rather than on epistemology matters as originally advocated by McGuire (1983); specifically, they argue for a conceptualization of context that incorporates not only traditional definitions of contexts as particular settings, relationships and shared symbol systems but also involve complex and numerous factors (which shape human communication and our perceptions of social reality) that include dynamic processes which change and unfold over time (1992:8-9).

Research then cannot just question action independently from context, as ‘context is not just a stimulus environment, but a nested arrangement of structures and processes where the subjective interpretations of actors perceiving, comprehending, learning, and remembering help shape the process’ (Pettigrew, 1990:429).

Following this, and to address the matter of causality within the qualitative campus, I wish to draw from the work of Nisbett and Wilson (1977); they argued that, when one is unaware of how a stimulus (in this case the on-line forum) might have affected a response, it is suggested that:

When people attempt to report on cognitive processes, that is, on the processes mediating the effects of a stimulus on a response, they do not do so on the basis of any true introspection; instead, their reports are based on a priori, implicit causal theories, or judgments about the extent to which a particular stimulus is a plausible cause of a given response’ (Nisbett and Wilson, 1977:231).

Indeed, the argument rests on the interdependence of a lot of more-or-less proved statements, i.e. the point is not to prove, beyond doubt, the existence of particular relationships so much as to describe a system of relationships, to show how things hang together in a web of mutual influence or support or interdependence or what-have-you, to describe the connections between the specifics one knows by virtue of having been there (Becker, 1996:56).

This means that I have to acquire the knowledge that I am not right ‘by accident’: ‘knowledge requires true belief where one’s true belief is not the result of accident or coincidence’ (Lemos, 2007:26). It is this view that has led some philosophers to hold that knowledge requires some causal connection between the fact

⁹ McGuire (1983) articulated *contextualism* as a counterpoint to *logical empiricism*; the latter is directed towards testing the external validity of a theory, whilst contextualism views testing as a process of clarification of the hypothesis under review, defining when that hypothesis is supportable and when it is not (Fulk *et al.*, 1992:8).

that ‘p’ and one’s belief that ‘p’ (ibid.). In fact, Lemos, and in his recent discussion about attempts to solve the *Gettier problem*, refers to this as the ‘third approach’ or ‘causal approach’ to *causality*, i.e. an early attempt to use the notion of causal connection to make sense of the idea that knowledge is true belief, that is not the result of accident or coincidence (ibid.:27). Indeed, this brings to the surface the matter of *causality* and its application in the qualitative campus.

The ability of qualitative research to address causality has been a ‘contested issue’ for some time now with the predominant view deriving from the positivist/empiricist position arguing that ‘qualitative research methods cannot by themselves be used to establish *causal relationships* or *causal explanations*’ (Maxwell, 2004:1). In addition, views of qualitative purists such as Lincoln and Guba (1985, 1989) have been highly influential in criticizing causality in qualitative research when arguing that ‘all entities are in a state of mutual simultaneous shaping...it is impossible to distinguish causes from effects’ (1985:7).

However, a number of other qualitative researchers (Denzin, 1970:26; Britan, 1978:231; Kidder, 1981; Erickson, 1986:82; Fielding and Fielding, 1986:22 in Maxwell, 2004:3) and mainly Miles and Huberman (1984, 1985) posed strong objections to any ‘positivist rejection of using qualitative research for causal explanation’ (ibid.) by arguing that:

Until recently, the dominant view was that field studies should busy themselves with description and leave the explanations to people with large quantitative data bases. Or perhaps field researchers, as is now widely believed, can provide “exploratory” explanations—which still need to be quantitatively verified. Much recent research supports a claim that we wish to make here: that field research is far *better* than solely quantified approaches at developing explanations of what we call *local_causality*—the actual events and processes that led to specific outcomes (Miles and Huberman, 1984:132).

However, and after Maxwell (2004), the view that qualitative research can rigorously develop causal explanations has never been given a systematic philosophical and methodological justification:

There are two essential tasks that such a justification must accomplish. First, it must establish the philosophical credibility of this position, since the traditional, positivist/empiricist view is grounded in a philosophical understanding of

causation that inherently restricts causal explanation to quantitative or experimental methods. Second, it must address the practical methodological issue of how qualitative methods can identify causal influences and credibly rule out plausible alternatives to particular causal explanations, a key tenet of scientific inquiry (Maxwell, 2004:246).

Indeed, for the constructionist researcher the issue is not a purely empirical one, to be adjudicated by experiment or controlled observation, and it cannot be solved by investigating the statistical correlation between societal events (Collin, 2002:16-17). Instead, illuminating those interconnections is a task of philosophical analysis (ibid.). In these lines, and after Weber, I wish to argue that as far as human affairs are concerned, any understanding of causation comes through an interpretative understanding of social action and involves an explanation of relevant antecedent phenomena as meaning-complexes (Crotty, 1998:69).

To this end, I think it will be of interest to draw directly from Collin (2002) who, in discussing construction and causal generation and explaining that he characterizes the ‘construction of fact’ as the ‘generation of fact’ by social consensus, by description or by conceptualization, argues for the need to distinguish this kind of generation from the more familiar causal one:

First, questions about causal generation are purely empirical matters. They pertain to regularities in the patterns of events that may be discovered and expressed in scientific laws. On the other hand, the status of social reality as a social construction is not an empirical discovery, in particular not a discovery based upon observed regularities.

It is not as if we have been struck by certain correlations between social facts and certain societally distributed ways of thinking about them or explaining them, and venture the hypothesis that the former must be generated by the latter. The relationship between the two is not the same as, say, the relationship between labour’s push for higher wages and an ensuing inflation (2002:14).

In this sense, I could draw from the independently developed distinction between two approaches to research, which Mohr (1982, 1995, 1996) labels *variance theory* [which deals with *variables* and the correlations among them] and *process theory* [which deals with *events* and the processes that connect them], and argue for

the latter which, and in contrast with the former, is based on an analysis of the causal *processes* by which some events influence others (Maxwell, 2004:248).

3.3. Concluding Remarks

On the whole, I believe that the approaches employed in the present study have enabled me to raise a number of reservations about the uncritical use of quantification in social sciences practice, in particular, the challenge of inappropriately fixing meanings where these are variable and renegotiable in relation to their context of use; the neglect of the uniqueness and particularity of human experience (cf. the nomothetic-idiographic debate in psychology); and because of concern with the overwriting of internally structured subjectivities by externally imposed ‘objective’ systems of meaning (Henwood and Pidgeon, 1993:16). I also feel I have presented adequate – at least to a degree – *argumentation* of how the present interpretive inquiry might fit nicely within the qualitative campus.

In the subsequent chapter, I will illustrate how I have adopted a comparative methodology within the case, i.e. ‘a comparison of situations in which the presumed cause is present or absent, affirming the value of case studies for causal explanation’ (Maxwell, 2004:4). Last, but not least, I will exemplify how I epitomize a mixed methods approach to data collection and analysis to address credibility matters to the particular causal explanation.

The diagram that follows (Figure 3.1) offers an overview of both the philosophical underpinnings and the research design of the present empiricist venture.

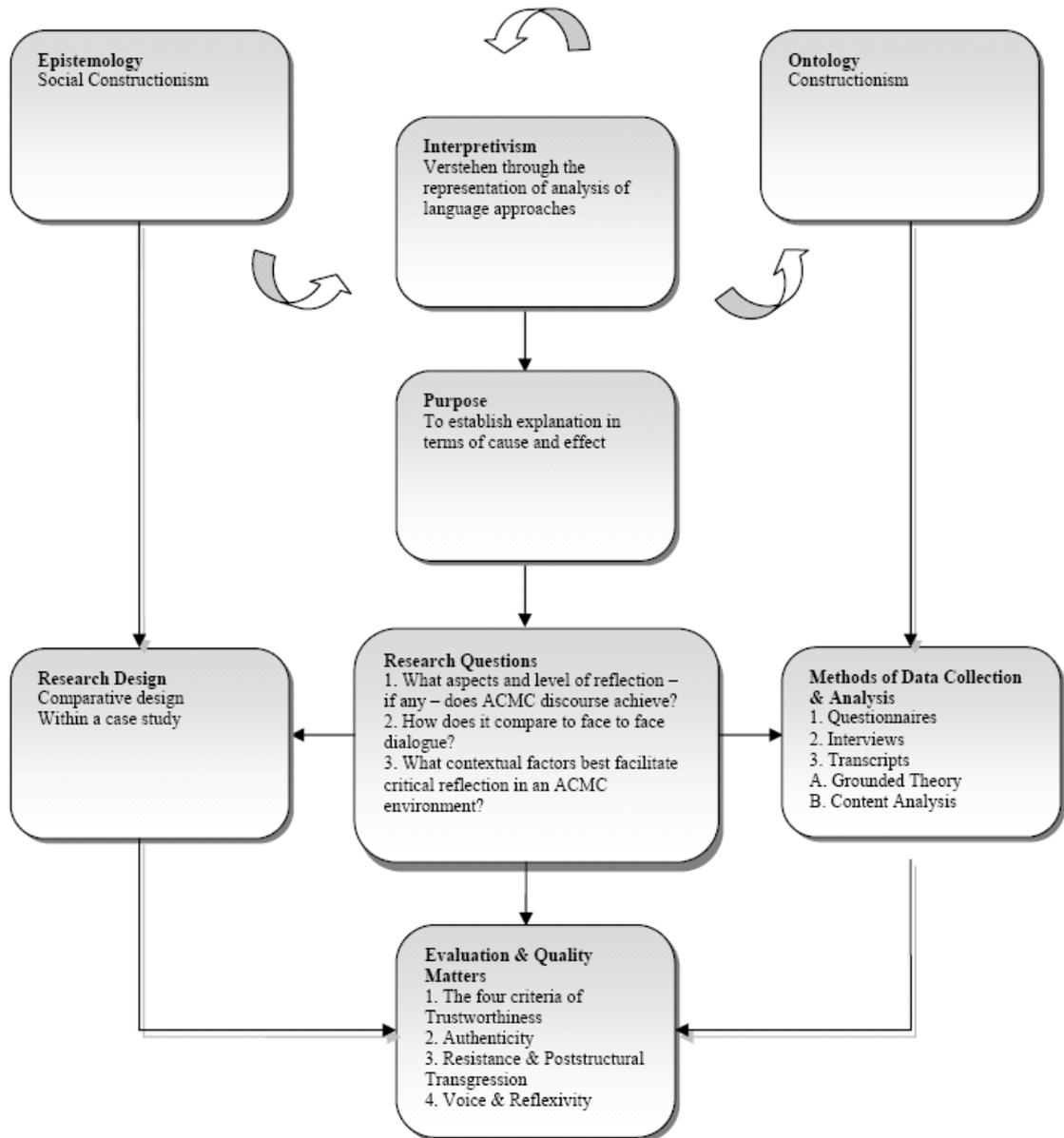


Figure 3.1 Philosophical Underpinnings of the Study and Overview of the Research Design

But something else needs to be said and prior to moving on to discuss the research design employed in this thesis. Drawing from Schwandt (2003), who observes that the interpretive paradigm is central to the movement of ‘qualitative’ inquiry (Denzin and Lincoln, 2003b:viii), and in acknowledging that the majority of contemporary research textbooks refer to ‘qualitative research’ when discussing the interpretive paradigm, I wish to draw the reader’s attention to the following.

Often, I will use some direct quotations in which my stance for this thesis is advocated and this will further define the position with which I will be dealing (Collin, 2002:4). At times, I shall also fall back upon formulations in terms of

‘qualitative research’ instead of ‘interpretive study’ or ‘constructivism’ instead of ‘constructionism’ when presenting the work of an author that uses these terms and, regularly, I shall also use them as ‘a stylistic variant when expounding my own arguments’(ibid.:10). In the latter case, these mode of expressions should always be translatable back into the canonical terminology of the *interpretive study* or *constructionism* as defined earlier in this chapter.

Whilst bearing these thoughts in mind, I will now turn to discuss the research design of the present empirical investigation.

Chapter 4

An Analysis of the Empirical Investigation

4.0 Introduction

As the reader might recollect, the central foci throughout the present enquiry have been to examine whether, and if yes, how reflective thinking – as a meaningful professional development objective – is promoted through asynchronous computer mediated communication (ACMC) by comparison with traditional face-to-face discussion.

In this chapter, I wish to advocate for presenting an *analysis* of the empirical investigation into those instances where *analysis* means breaking the present inquiry ‘into its constituent parts and viewing them in relation to the whole they form’ (Ragin, 1994:55). In essence, the analysis of the present empirical investigation involves breaking down to its key component parts so that it no longer appears to be ‘an amorphous, teeming mass of revolutionaries, but rather can be seen as a combination of key elements and conditions; these elements can be viewed in isolation from one another, and they can be understood in the context of the other parts’ (ibid.).

I see this understanding of the concept *analysis* (exploring or offering an explanation of something in terms of its aspects or parts) as an essential background to presenting an *analytic frame* of the present empirical investigation (Ragin, 1994:56) because it constitutes a way of seeing.

Hereto, this chapter reports on the research approach employed in this thesis, i.e. describes the procedures adopted and illustrates the instruments employed for data collection and analysis by drawing upon the pertinent literature, and argues for the criteria assumed for evaluating the present empirical account, concluding with deliberations on some ethical issues relevant to this study and the limitations to be taken into consideration.

4.1 On Framing the Strategy of Inquiry: The Research Design

In examining the strategies of inquiry within the interpretive paradigm, Denzin and Lincoln (2003b) explain that ‘a research design describes a flexible set of guidelines that connect theoretical paradigms first to strategies of inquiry and second to methods for collecting empirical material (2003b:36). However, one must make thoughtful, informed decisions about the designs and methods most appropriate to the specific questions under investigation, as it is the research questions that should guide the selection of inquiry methods (Borko, 2004:13).

With a focus on the research questions and the purpose of the study, i.e. ‘in deciding what information most appropriately will answer [the] specific research questions, and which strategies are most effective for obtaining it’ (LeCompte and Preissle, 1993:30), the present interpretive inquiry adopts a comparative approach within the case study and employs a multi-method or ‘mixed methods’ approach (Tashakkori and Teddlie, 2003) to data collection and analysis.

As Flick (1998) reminds us, ‘the essence of good qualitative research design turns on the use of a set of procedures that are simultaneously open-ended and rigorous and that do justice to the complexity of the social setting under study’ (Janesick, 2000:379).

4.1.1 Case Studies

The concept ‘case study’ is strongly associated with qualitative research although it is used in a variety of ways (Ritchie, 2003:51-52). A case study is a detailed examination of one setting, or a single subject, a single depository of documents or one particular event (Bogdan and Biklen, 2003:54). As Stake (1995) puts it: ‘a case study is expected to catch the complexity of a single case, i.e. it is the

particularity and complexity of a single case, coming to understand its activity within important circumstances' (1995:xi).

Louis Smith was one of the first educational ethnographers who helped define the case as a 'bounded system', drawing attention to it as an object rather than a process: 'let us use the Greek symbol Θ (theta) to represent the case, thinking all the while that Θ has a boundary and working parts' (ibid., 1995:2). Focusing on those case studies that are attached to the interpretive paradigm, Stake contends that the case study is not a methodological choice, but a choice of object to be studied and ultimately the researcher is interested in a *process* or a *population of cases*, not an individual case (Denzin and Lincoln, 2000:372).

Selection

The most common use of the term associates the case study with a location, such as a community or organisation (Bryman, 2004:49). However, much case study takes place on what might be called *exemplifying case*, in that cases are often chosen not because they are extreme or unusual in some way but because they will provide a suitable context for certain research questions to be answered; in other words, the case merely provides an apt context for the working through of these research questions (ibid.:51).

Stake (2000) offers a similar description for what he calls an *instrumental case study*.¹⁰ when he argues that:

In an instrumental case study the particular case is examined mainly to provide insight into an issue or to redraw a generalisation. The case is of secondary interest, it plays a supportive role, and it facilitates our understanding of something else...Here the choice of case is made to advance understanding of that other interest (Stake, 2000:437).

The epistemological question that arises at this point, and which will be the driving question in this thesis, is: *What can be learned from the single case?* (ibid.:435). Often qualitative case researchers orient to complexities connecting

¹⁰ Stake (2000) further distinguishes between the *intrinsic and collective* interest in cases; the first denotes that the study is undertaken to provide the researcher with a better understanding of this particular case and the latter for the researcher to jointly study a number of cases to investigate a phenomenon or population.

ordinary practice in natural habitats to the abstractions and concerns of diverse academic disciplines, for example, anthropology and ethnographic cases; this broader purview is applied to the single case, but does not replace it as focus (ibid.:440).

Hereto, I will emphasize designing the study to optimise understanding of the case rather than generalization beyond (ibid.:436), assuming, and after Stake, that the readers will be able to generalize subjectively from the case in question to their own personal experiences (ibid.:370).

Sample Design and Selection

It is a general feature of social enquiry to design and select samples for study, even if a study involves very small populations or single case studies; decisions still need to be made about people, settings or actions (Burgess, 1982, 1984 in Ritchie and Lewis, 2003:77).

Qualitative research uses non-probability samples for selecting the population of study. In a non-probability sample, units are deliberately selected to reflect particular features of or groups within the sampled population. The sample is not intended to be statistically representative: the chances of selection for each element are unknown but, instead, the characteristics of the population are used as the basis of selection. It is this feature that makes them well suited to small-scale, in-depth studies (ibid., 2003:78).

In the present research design, sampling decisions were observed in two *instances* (in terms of time) or *stages* (with reference to the research design) and they are discussed below.

First Sampling Decision

A number of authors have identified *convenience sampling* as one of the sampling methods often used in qualitative research (Burgess, 1984; Honingmann, 1982; Maxwell, 1996; Patton, 2002 in Ritchie and Lewis, 2003:81).

Similarly, and in the first instance, the present empirical investigation utilised the *convenience sampling* method, i.e. the researcher chooses the sample according to ease of access (ibid.), and by further adopting the *flow population* approach, i.e. approaching people in a particular location or setting, and the *snowballing or chain*

sampling approach, i.e. asking people who were willing to consider taking part in the study to identify other people they knew who fitted the selection criteria (ibid.:94).

These methods and approaches resulted in framing the sample of this study with a total of twenty participants who soon after, and in order to meet certain methodological requirements of the study (i.e. the comparative stage of the research design), became the *parent population* to the second sampling stage and as illustrated below.

Second Sampling Decision

To be able to identify whether the presumed cause in this study is present or absent, the research design demanded that, after framing the initial sample, I compose two comparable groups to shape the on-line and the face to face forums, and which I will conceptualize as two ‘empirical units’ (Stake, 2000:438) or otherwise ‘two cases within the case’ (ibid.:447). Indeed, I will join Stake when he argues that ‘we may simultaneously carry on more than one case study, but each case study is a concentrated inquiry into a single case (ibid.:436).

To this end, the second sampling stage adopted a purposive approach to sampling from the initial sample or ‘subpopulation’ (ibid.:446). Specifically, the subpopulation was ‘grouped into strata’ (McClintock, 1979:621) that consisted of predetermined selection procedures and ‘salient criteria’ (Ritchie and Lewis, 2003:78) that depend on theoretical expectations about sources of bias in the sample’ (McClintock, 1979:620). As such, two groups or comparable samples were created to offer a detailed picture of the particular phenomenon under investigation, i.e. individuals who belong to the same subculture or have the same characteristics, as this allows for detailed investigation of social processes in a specified context (Holloway and Wheeler, 1996; Patton, 2002; Robson, 2002 in Ritchie and Lewis, 2003:79).

Ritchie and Lewis argue that a purposive approach to sampling relies on the use of prescribed selection criteria, although prescription might take place at different stages of the research (2003:82). They further explain:

In the criterion based or purposive sampling, the selection of participants, settings or other sampling units is criterion based or purposive (Mason, 2002; Patton, 2002). The sample units are chosen because they have particular features or characteristics which will enable detailed exploration and understanding of the central themes and puzzles which the researcher wishes to study. These may be socio-demographic characteristics, or may relate to specific experiences, behaviours, roles. Burgess (1984) and Honigmann (1982) call this judgement sampling (*ibid.*).

I will join LeCompte and Preissle (1993) in arguing that *criterion based* is perhaps a more appropriate term than *purposive* on the grounds that all sampling is purposive, although it is generally acknowledged that ‘purposive is the term most commonly used in the literature’ (Ritchie and Lewis, 2003:78).

Moreover, there are a range of different approaches to purposive sampling, designed to yield different types of sample composition depending on the study’s aims and coverage (*ibid.*:79). Often, the probability of units being selected is equal, in which case groups will be represented in the sample in their true proportions, i.e. the aim is to produce a statistically representative sample that is a kind of small-scale model of the population from which is drawn (*ibid.*:78).

However, it is important to note at this point that, unlike quantitative research using statistical procedures, qualitative research does not set out to estimate the incident of phenomena in the wider population and as such, qualitative sampling requires a different logic to quantitative inquiry, one in which neither statistical representation nor scale are key considerations (Ritchie and Lewis, 2003:81); rather, the precision and rigour of qualitative research sample is defined by its ability to represent *salient characteristics* and it is these that need priority in sample design (*ibid.*:82). Ritchie and Lewis explicitly argue:

Units are chosen because they typify a circumstance or hold a characteristic that is expected or known to have salience to the subject matter under study, which has been termed as a principle of qualitative sampling as the requirement for ‘symbolic representation’ because a unit is chosen to both ‘represent and ‘symbolise’ features of relevance to the investigation (*ibid.*:82-83).

4.1.2 The Comparative Design

Comparisons may be drawn between groups around which the sample design was structured, or may be between groups which emerge inductively from the analytical process (Ritchie and Lewis, 2003:51).

Comparison is considered to be an important feature of research design in that it is seen as something that should inform the selection of research locales and populations, that aids theory building, and that enhances the solidity of research findings (Bechhofer and Paterson, 2000; Bryman, 2001; Pole and Lampard, 2002 in Ritchie and Lewis, 2003:50). As Bechhofer and Paterson (2002) nicely put it: ‘comparison lies at the heart of good research design, whether qualitative or quantitative’ (2002:2).

Comparison is a grand epistemological strategy, a powerful conceptual mechanism, fixing attention upon one or a few attributes (Stake, 2000:444) and it can be a highly effective aspect of qualitative research design and analysis, where the nature and the value of comparison are placed primarily in *understanding* rather than simply *measuring* difference (Ritchie and Lewis, 2003:50) between, and in this instance, two independent variables. Following on from the nature of the value of comparison in qualitative research, Denzin and Lincoln (2000) agreeably explain:

Qualitative research involves the studied use and collection of a variety of empirical materials and accordingly, qualitative researchers deploy a wide range of interconnected interpretive practices, hoping always to get a better understanding of the subject matter at hand (ibid.:3-4).

At the same time a process of constant comparison of groups, concepts and observations is necessary as the researcher seeks to develop an understanding that encompasses all instances of the process or case under investigation (ibid:370).

Thus, and in agreement with Bryman (2004), ‘the key to the comparative design is its ability to allow the distinguishing characteristics of two or more cases to act as a springboard for theoretical reflections about contrasting findings’ (2004:55). In other words, by comparing two or more cases, the researcher is in better position to establish the circumstances in which a theory will or not hold (Yin, 1984 and Eisenhardt, 1989 in Bryman, 2004:55). Moreover, the comparison feature ‘is something of a hybrid in that in qualitative research it is frequently an extension of a

case study design; it even exhibits certain features that are similar to experiments and quasi-experiments, which also rely on the capacity to forge a comparison' (ibid.).

Most importantly however, and in line with Miles and Huberman's list of strategies for comparison and advice on their use (1994:254), the present controlled comparison approach adopted aims to 'address one of the main objections raised against using qualitative case studies for causal inference – their inability to explicitly address the 'counterfactual' of what would have happened *without* the presence of the presumed cause (Shadish, Cook, and Campbell in Maxwell, 2004:8).

4.2 Procedures and Methods of Data Collection

By whatever methods, we choose to study the case. We could study it analytically or holistically, entirely by repeated measures or hermeneutically, organically or culturally, and by mixed methods (Stake, 2000:435).

What follows is a full account of the procedures and instruments employed for data collection and 'which is best described in retrospect, a narrative of what actually happened' (Bogdan and Biklen, 2003:49). In other words, it is a revealing narrative from the self-of-the-writer, from a lived experience (Ricci, 2003:594). An overview of the procedures and instruments employed is illustrated in the figure that follows (Figure 4.1).

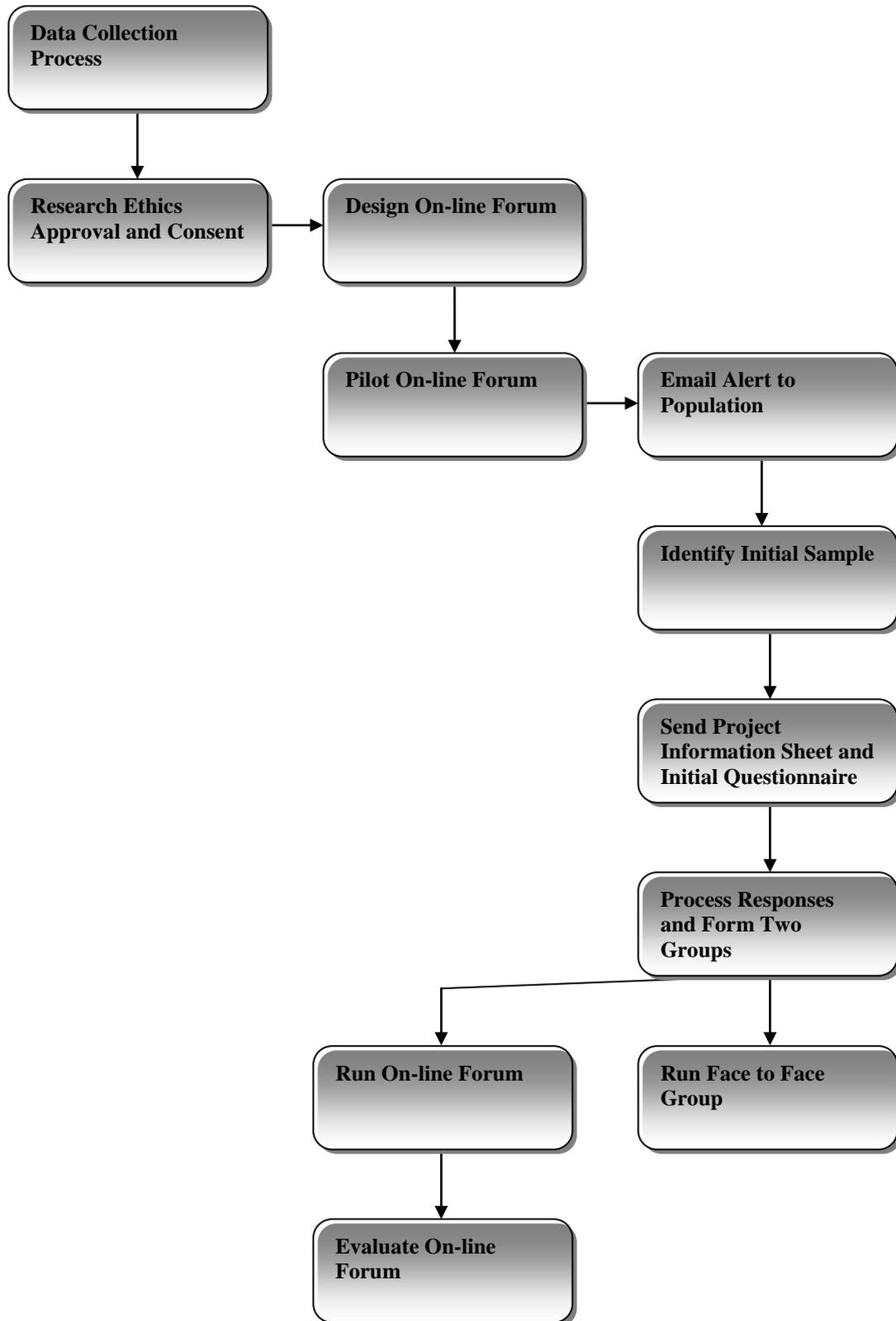


Figure 4.1 Overview of the Data Collection Process

4.2.1 The Case Study Population

Prior to presenting a full account of the procedures and instruments employed for data collection in this study, I think it is important to offer a succinct description of the subjects of the case study in order to aid the reader's understanding of the population of the study, and so that the results of the data analysis and the subsequent discussion may be usefully contextualised and in a more transparent way.

At the outset of this thesis, and when discussing the research orientation of this study (Chapter 1), I explained that my deliberations for initiating the present investigation derived from my own experience as a practitioner in the post 16 education sector in the UK, and that the Learning and Skills Development Agency (LSDA) formed the object of the present case study. LSDA shapes a strategic national resource body for the development of policy and practice in post 16 education and training, and it was formed under the UK reform umbrella for the Skills for Life agenda. It works with a wide range of sectors including education, local authorities, and private and international organisations, aiming amongst others to offer curriculum related support to lecturers and trainers, professional development support to post 16 education organisations and support for policy initiatives and local research.

In this context, LSDA's members and professional affiliations come from a wide range of sectors including but not limited to FE and HE institutions, Local Authorities, voluntary and community groups, and health and social care organisations. In November 2010, the UK Department for Business, Innovation and Skills (BIS) published a guidance document entitled 'The Quality Assurance System for post-16 education and training provision', with its paragraph 1.3 stating:

This document refers throughout to providers of post-16 education and training. This includes: school sixth forms; general further education colleges; sixth form colleges; specialist colleges, such as land based colleges and colleges of art and design; higher education institutions that offer post-16 education and training provision; work-based learning providers; third sector providers; Independent Specialist Providers for learners with learning difficulties and/or disabilities; Specialist Designated Institutions and Former External Institutions; providers that deliver learning in youth custody, prisons and youth detention accommodation; local authorities that deliver maintained adult learning services (BIS, 2010:2).

The population of the present case study then consisted of professionals employed in the capacity of Skills for Life Tutors, specializing, for example, in Literacy, Numeracy or ICT subject areas, Lecturers, and professionals occupying management related positions in the field of post 16 education provision. An *Initial Questionnaire* was distributed to the LSDA members who agreed to participate in this study for the purposes of composing a detailed profile of the case study participants, and it is discussed in more detail in the pages that follow.

4.2.2 The Preliminary Steps: Seeking Research Ethics Approval and Consent

Seeking Research Ethics Approval of Work from Durham University

Preceding implementation of any methods and procedures for data collection, research ethics approval was sought from Durham University Ethics Advisory Committee: ‘All University work with human volunteers must be assessed for ethics approval, whether it is in teaching, undergraduate or taught postgraduate project work or research’ (quoted from *Application Form for Research Ethics Approval of Work with Human Participants*, Form EC2, Durham University).

This form was completed and submitted by the researcher early in spring 2004 and it included details of the Investigator (Section A), description of work, i.e. title of project, abstract, aims and objectives, design of study, methodology, details of the project participants and recruitment methods, information on any tests, controls, risks and hazards, details of obtaining participants’ consent, confidentiality matters, project duration, and follow up action (Section B).

The Research Ethics Approval Form was approved by Durham University Ethics Advisory Committee shortly after it was submitted, with minor modifications. The guidelines provided by the Ethics Advisory Committee was adhered to strictly from the preliminary stages of the investigation and throughout the research project by e.g. employing the University’s example *Consent Form* to obtain participants’ written permission about how their contribution will be used and safeguarded in this study, and by distributing a *Project Information Sheet*, which was written in layman’s language (following again guidelines from Durham University’s Ethics Advisory Committee), to present participants with a summary of the empirical study.

A full account of the procedures and methods employed to adhere to ethical and legal matters related to the present research study is explicitly reported and embedded in the step by step narrative of the procedures and instruments employed for data collection and analysis that follows.

Access and Entry

As soon as research ethics approval was granted, I pursued an informal contact with the Regional Director and Head of Regions for the Learning and Skills Development Agency (LSDA). The reason for initiating such a contact was two-fold:

1. to seek consent for conducting research within the LSDA context, and,
2. to request permission to contact the registered members of the LSDA post-16 education network in the North East, i.e. the population of this study.

It was also envisaged that I would gain further insight into the origins and function of the specific network from the network's architect himself, alongside guidance or possible suggestions on making initial contact and engaging successfully the network members for the objectives of the present study. As such, and during a regional LSDA conference (2003), I initiated an informal approach where I introduced myself, explained briefly the motives for my enquiries and requested an informal interview. During this initial contact, it was suggested that I contact him to have a telephone conversation in the first instance.

The concept and format of this informal telephone interview, which lasted for approximately an hour, was in principle unstructured (Oppenheim, 1992) as the purpose of the interview was *exploratory*, i.e. to allow for ideas to develop through uninterrupted flow of information, and it was also *intersubjective* (Laing in Cohen and Manion, 2000), i.e. to allow for the interviewee to express and discuss how he regards the situation from his own point of view.

At last, I had hoped to participate as a group facilitator in the annual summer networking event organised by the Learning and Skills Development Agency (2004). I had envisaged that a face to face encounter with the research population would provide a good forum for seeking agreement to participate, offering the opportunity for a full account of the research study to be given and questions or concerns to be

addressed, and any necessary reassurances or encouragement to be given (Ritchie and Lewis, 2003:92). Unfortunately, and although permission was granted for my involvement in the event, the conference was cancelled at the last minute due to insufficient expression of interest by its members.

4.2.3 Moving On: Setting Up the On-line Forum

Having all necessary permissions granted, the subsequent step was to explore and identify an appropriate on-line platform to host the on-line discussion. For the purposes of the present empirical study, *phpBB* was selected as an open source forum solution; *phpBB* is a customizable free forum provider that has an easy to use administration panel and a user friendly installation process, which allows interested parties to set up a forum with relative ease. Since its creation in 2000, *phpBB* argues it is one of the most popular ways to create and support a community (<http://www.phpbb.com/>).

At the same time, it was necessary that I identify a hosting provider and decide on a *domain name*,¹¹ i.e. a name that would identify the on-line forum on the web and that it would appear as a component in its URL. For the objectives of this study the domain name selected and fully registered on the web was ‘e-developmentnetwork.com’ and the name selected to identify the website was ‘Communities of Practice’.

The preference for the name dedicated to the website is an obvious indication of how my thought has been influenced by Wenger and Lave’s ideas and arguments around the notion of ‘communities of practice’: ‘a community of practice involves much more than the technical knowledge or skill associated with undertaking some task. Members are involved in a set of relationships over time’ (Lave and Wenger, 1991:98) and communities develop around things that matter to people (Wenger, 1998).

In this study, it was envisaged that the on-line forum participants would collaborate around ‘those things that matter [most] to them’, i.e. recent challenges within the post-16 education, through forming an *e-network* and, in doing so, they

¹¹ The term domain name has multiple related meanings: i) a name that identifies a computer or computers on the internet. These names appear as a component of a Web site's URL, e.g. wikipedia.org. (this type of domain name is also called a hostname); ii) the product that domain name registrars provide to their customers. These names are often called registered domain names (quoted from *Wikipedia*, http://en.wikipedia.org/wiki/Domain_name).

would experience a different – and perhaps, but not necessarily, a more rewarding experience in terms of learning – type of professional development, that of the *e-professional development*. This thought has also been the driving force behind the selection of the domain name, i.e. *e-developmentnetwork*. The image that follows is a snapshot representation of the log-in page for the on-line forum as it appeared on the web:



The image shows a screenshot of a web forum's login page. At the top left is the phpBB logo with the tagline 'creating communities'. To the right of the logo is the text 'Communities of Practice'. Below this, there are several navigation links: 'FAQ', 'Search', 'Memberlist', 'Usergroups', 'Register', 'Profile', 'Log in to check your private messages', and 'Log in'. The main content area contains the text 'Please enter your username and password to log in.' followed by two input fields labeled 'Username:' and 'Password:'. Below these fields is a checkbox labeled 'Log me on automatically each visit:'. A 'Log in' button is positioned below the checkbox, and a link 'I forgot my password' is located below the button. At the bottom of the page, it says 'Powered by phpBB 2.0.6 © 2001, 2002 phpBB Group' and a URL 'www.e-developmentnetwork.com'.

Figure 4.2 The Log-in Page of the On-line Forum

4.2.4 The Pilot Phase: Testing the On-line Forum

As soon as the first version of the on-line forum was developed, 25 post 16 education practitioners and colleagues from the North East region of England were approached informally and they were asked to participate in the pilot phase of testing the forum. Out of the 25 possible volunteers, 7 agreed to participate. The role of the participants was meant to be of a consultative nature and it was expected to last throughout the pilot phase.

Specifically, the participants were asked to examine the layout, content and operational aspect of the on-line forum and make suggestions as appropriate. A letter offering an overview of the research project alongside specific information about the

pilot stage and explicit guidelines and instructions on how to join the forum (Notes & Glossary Sheet) were handed out or emailed to the colleagues who volunteered to review the on-line forum (Appendix I).

4.2.5 The Email Alert to the Research Study: The Invitation Letter

An email to the population of the study alerting them to the research project (Appendix II) was circulated early in September 2004 by the LSDA co-ordinator and on behalf of the researcher. The purpose of the email alert was to invite volunteers to participate in the research project. Specifically, the email circulated included an invitation letter which offered a brief overview of the empirical study, including reference to the researcher's personal interest to the study. A monetary incentive for participating in the research project was also highlighted in the hope to maximize and ensure adequate response rate (Edwards *et al.*, 2002; Cohen and Manion, 2000; Lunt and Livingstone, 1992).

4.2.6 The Response Rate

The email alert to the research study was sent to the LSDA regional network members during the third week of September 2004, asking them to express interest in participating in the research project and by the end of that month, thus allowing for a period of approximately two weeks for a reply. I had hoped to attract interest from at least half of the population (which consisted of approximately 220 members at the time) but I was unable to secure such a response rate.

During the first week of anticipating responses, I had only received six replies from colleagues expressing interest to participate in this study. A second email reminder was sent by the researcher herself and during the second week approaching the deadline for responses. This second email generated another twelve positive responses. Amongst those, there was one email requesting further information on how I planned to carry out the research, the timescale of the study and details of the work involved in one's commitment to participate (Appendix III). I decided to follow up the specific enquiry by telephone, instead of merely sending an email reply, as I felt that such a decision might make a positive difference and for the following reasons:

- a) I would show gratitude and respect to the enquirer who made the effort to respond to the email alert;
- b) I would demonstrate a professional approach and code of conduct in dealing with enquiries and in managing the research project on the whole;
- c) I would be able to identify and respond to possible questions or concerns as they arose;
- d) I would be able to follow up on any ideas as they would evolve through the telephone conversation.

Eventually, and after an approximately twenty minute's telephone conversation, I succeeded in recruiting the enquirer as a volunteer to the project. Ultimately, the latter forwarded details of the present study to three fellow colleagues of his; in this way, the number of volunteers who agreed to take part in the research study reached a total of 21 participants. However, one colleague from the initial positive responses to the email alert decided to withdraw due to changes in personal circumstances, driving the total sum of the sample of this study to 20.

4.2.7 The Initial Contact with the Sample: Obtaining Preliminary Data

Shortly after the deadline for responses to the email alert, I contacted the colleagues who agreed to volunteer in the research project (Appendix IV). My intention was first of all to express gratitude to those who agreed to participate in the study and also to request and distribute information on the following:

1. the Project Information Sheet;
2. the Notes & Glossary Sheet;
3. the Consent Form;
4. the Initial Questionnaire Tool.

The Project Information Sheet

The purpose of the *Project Information Sheet*, which was written in layman's language (following guidelines from *Durham University's Ethics Advisory Committee*), was to offer a summary of the empirical study, i.e. to explain that the project will carry out an investigation of both an on-line and a face to face discussion to identify the benefits of participating in an on-line forum (Appendix V). This information sheet also aimed to describe briefly the methodology for the project, i.e. how the research will be carried out, what is the estimated timescale, and details of the participants' involvement expected.

The issue of confidentiality was also addressed by explaining that all identifying information will be removed prior to analysing the data to safeguard the anonymity and confidentiality of the participants' records, and in compliance with the requirements of the Data Protection Act. Finally, the *Project Information Sheet* carried the 'Approved by Durham University's Ethics Advisory Committee' declaration, and as suggested by the committee itself.

The Notes & Glossary Sheet

In addition to the *Project Information Sheet*, it was considered it would be useful to distribute a *Notes & Glossary Sheet* (Appendix VI); the purpose of this document was two-fold:

- a) to offer explicit information about the study by addressing potential queries the participants might have, i.e. What is this research project about? Why is the researcher interested in it? Why you? Is this study confidential? and,
- b) to shed light on some of the most frequent key terminology used when employing the computer mediated communication mode, i.e. What is computer mediated communication? What is the difference between synchronous and asynchronous interaction? What does the word 'emoticon' represent? What do we mean when we refer to 'lurking'?

The Consent Form

The rationale for distributing the *Consent Form* was for written permission to be obtained from the participants of the study and prior to the data collection process.

As a major part of the present study would significantly rely on tape recordings, the consent form included an additional section highlighting the participants' understanding and consent to the use the researcher intended to make of the recordings after the end of the project. In this study, Durham University's consent form was employed as it was advised by the University's Ethics Advisory Committee (Appendix VII).

The Initial Questionnaire

The primary objective in devising the questionnaire was to obtain demographic data or 'public variables' on the participants, i.e. variables where the individual values are known and *known to be known* by others (Galtung, 1973:29), e.g. sex, age, occupation and so forth, and relevant to the research purposes background particulars of the sample of the study, i.e. ICT skills, frequency and purpose for using the Internet and so forth.

Specifically, its purpose was to enable the inquirer 'to match the cases on the basis of some characteristic that is known to correlate with the outcome measure' (Fitz-Gibbon and Morris, 1987:39) and assign the participants into two comparable groups (for the on-line and the face to face forums respectively), ensuring that equal percentage proportions of these characteristics appear in each group. A copy of the questionnaire distributed may be found in Appendix VIII.

The demographic and background particulars requested were related to the participants' age, gender, qualifications, occupation and subject area of expertise. In addition to gathering demographic data, it was considered to be imperative that the researcher obtains information on matters related to a) access, frequency and purpose of using a computer device, b) information and communication technology (ICT) skills and attitudes, and c) prior experience of participating in an on-line forum.

It was not until and during testing the pilot version of the questionnaire that it was suggested that one final variable should be included: the *reflectivity* attribute, and after Korthagen and Wubbels (1995) who argued that: 'during our research we also found some indications that certain teacher characteristics are correlated to reflective capacities and attitudes' (1995:53). To obtain data with reference to this specific variable an open ended question was employed as an 'attractive device for those sections of a questionnaire that invite an honest, personal comment from the respondents in addition to ticking numbers and boxes, as it is open-ended responses

that might contain the ‘gems’ of information that otherwise might not have been caught in the questionnaire’ (Cohen and Manion, 2000:255).

The open ended question required participants to refer to a recent training initiative they attended and to briefly explain the reason(s) for their participation, argue for its usefulness and reflect on the subsequent effect - if any - on their individual professional practice and performance. The responses to the open ended question were later analysed thematically with some quantification and also with textual analysis, i.e., the data were coded as either *descriptive* or *critical reflection*, based on Ho and Richards's *Table for Descriptive and Critical Reflection* (1993) [with minor modifications], to assess participants’ reflective thinking by identifying and capturing emerging characteristics of *descriptive writing*, *descriptive reflection*, *dialogic reflection* and *critical reflection* (Hatton and Smith, 1994). Both tables (Tables 4.1 and 4.2) are reported below to contextualize the reader’s understanding and for practical purposes:

Ho and Richards's Table for Descriptive and Critical Reflection (1993)

Reflection	Descriptive	Critical
1. Theories of teaching a) theories/beliefs about teaching and learning b) applying theories to	A belief/conviction An expert’s view How a theory was applied	A justification A personal opinion Contradiction practice between theory and practice How theories changed
2. Approaches and methods	Approaches and methods The content of the lesson The learners The school context/classroom management	The teacher’s knowledge in teaching: pedagogical and experience Socio-political impact
3. Evaluating teaching	Solutions to problems by seeking solutions from experts	Evaluating lessons: positive/negative Diagnosing problems: students, class interaction, teacher’s problems Solutions to problems: alternative ways of presenting Lesson; deciding on a plan

4. Questions about teaching	Asking for advice	Asking for reasons Problematizing
5. Self-awareness	Perceptions of self as teacher: style and comments on language proficiency	Recognition of personal growth Setting personal goals

Table 4.1 Ho and Richards's Table for Descriptive and Critical Reflection (1993)

Criteria for the Recognition of Evidence for Different Types of Reflective Writing (Hatton and Smith, 1995)

Reflection type	Nature of reflection	Possible content
Descriptive Writing	Not reflective. Description of events that occurred/report of literature. No attempt to provide reasons/justification for events.	
Descriptive Reflection	Reflective, not only a description of events but some attempt to provide reason justification for events or actions but in a reportive or descriptive way Two forms: (a) Reflection based generally on one perspective/factor as rationale. (b) Reflection is based on the recognition of multiple factors and perspectives.	For example, "I chose this problem-solving activity because I believe that students should be active rather than passive learners." Recognition of alternate viewpoints in the research and literature which are reported. For example, Tyler (1949), because of the assumptions on which his approach rests suggests that the curriculum process should begin with objectives. Yinger (1979), on the other hand argues that the "task" is the starting point.
Dialogic Reflection	Demonstrates a "stepping back" from the events/ actions leading to a different level of mulling	For example, "While I had planned to use mainly written text materials I

	<p>about, discourse with self and exploring the experience, events, and actions using qualities of judgements and possible alternatives for explaining and hypothesising.</p> <p>Such reflection is analytical or/and integrative of factors and perspectives and may recognise inconsistencies in attempting to provide rationales and critique.</p> <p>Two forms, as in (a) and (b) above.</p>	<p>became aware very quickly that a number of students did not respond to these. Thinking about this now there may have been several reasons for this. A number of students, while reasonably proficient in English, even though they had been NESB learners, may still have lacked some confidence in handling the level of language in the text. Alternatively, a number of students may have been visual and tactile learners. In any case I found that I had to employ more concrete activities in my teaching."</p>
Critical Reflection	<p>Demonstrates an awareness that actions and events are not only located in, and explicable by, reference to multiple perspectives but are located in, and influenced by multiple historical, and socio-political contexts.</p>	<p>For example, "What must be recognised, however, is that the issues of student management experienced with this class can only be understood within the wider structural locations of power relationships established between teachers and students in schools as social institution based upon the principle of control" (Smith, 1992).</p>

Table 4.2 Criteria for the Recognition of Evidence for Different Types of Reflective Writing (Hatton and Smith, 1995)

The Profile of the Case Study Participants

The initial analysis of the questionnaire demonstrated that the characteristics of the case study participants reflected nearly the whole of the gamut of the LSDA population.

The majority of the colleagues who agreed to participate in this research study came from the FE and the voluntary sector, with representatives from the LEA and the private sector present too. More than half reported to be employed in post 16 education management related positions, with others occupying equally teaching and lecturing positions in the subject areas of Literacy, Numeracy, ESOL and ICTs. All of the 20 participants were qualified to a minimum of a degree level with more than half of them reporting having 'good' IT skills and regular access to the Internet for work or professional development related purposes. In addition, the majority of the questionnaire responses revealed evidence of descriptive reflection and writing, with only approximately a quarter of the responses demonstrating instances of critical reflection.

Surely, this is only a succinct overview of the profile of the case study participants, and it is discussed in more detail in Section III *Research Findings: Analysis and Synthesis*, Chapter 6, which offers a comprehensive description of both the processes employed for recording and processing the questionnaire responses and also of the characteristics of the sample.

4.2.8 The On-line Forum

Forming the Group

As soon as the questionnaires were processed and the emergent characteristics of the participants were defined, the target variables were identified, analysed and categorised to form two comparable groups by ensuring equal variation within each cluster. Eventually, two clusters of ten participants each were formed.

The first group was invited to collaborate on-line by participating in the designated on-line platform early in November 2004. An invitation letter (Appendix IX) was sent out to explain that the specific individuals were allocated to the on-line forum discussion cluster and to offer essential information on the purpose and structure of the on-line forum. The *Notes & Glossary Sheet*, which accompanied the invitation letter, aimed to offer further particulars on the on-line registration and the *log in* process. Explicit information was also presented on what would be expected to be adequate users' involvement and participation style in the on-line discussion. The time framework for the on-line discussion to take place was set to eight weeks.

To comply with Health and Safety regulations for display screen users, a suitable *Health and Safety Work Assessment Form* was circulated, alongside a relevant information leaflet by the Health and Safety Executive (entitled *Working with VDUs*) and a *web link* directing the participants of the forum to a related free on-line tutorial (Appendix IX).

The Structure and Content of the On-line Forum

The on-line forum consisted of a number of pre-determined discussion topics (or threads) that were organised and categorised into subsections (or ‘mini’ discussion forums); these mini forums consisted of discussion topics that included triggering posts (or discussion themes) which were relevant to the population’s professional interests and highlighted emerging issues around national initiatives or debates.

Learning designs which encourage reflective practice need to promote the value of reflection in a context that resembles the real context in which the developing professional must practice ... the learning design should then promote knowledge application in a non-threatening environment so that students can develop a sense of achievement. This sense should be reinforced by reflection on the personal achievements and growth that contextualized application of knowledge achieves. Thus created learning environments can be developed to simulate real world case dilemmas and encourage students to challenge themselves to solve those dilemmas (Thompson, 2006:11).

However, it was emphasized that those triggering posts were only proposed themes for discussion and that the on-line forum participants were encouraged to create new threads and initiate discussion under a theme of individual professional interest or concern. A screenshot image that offers an overview of the on-line forum index can be found in Appendix X.

The On-line Discussion

The on-line discussion commenced 12th November 2004 and lasted for eight weeks, until 12th January 2005. The messages posted by the participants during those eight weeks were collated to be processed and analysed to address the key queries of the present empirical investigation.

The on-line interaction was transcribed and a copy of the transcript has been attached in Appendix XI. To aid comprehension when looking into the participants' on-line contributions, the on-line posts have been framed with the order and under the relevant discussion context in which they were posted.

4.2.9 The Face to Face Forum

Forming the Group

Shortly after setting the scene for the on-line discussion to develop, I contacted the volunteers that would form the *second case* under investigation in this study, i.e. the face to face forum. An invitation letter was sent out during the last week of November 2004 a) explaining that the recipients of the letter were the individuals who had been allocated to the second discussion forum, and b) enquiring about colleagues' availability to participate in the face to face discussion group on the date and time set by the researcher (Appendix XII).

The major challenge being to identify the most suitable date and time to accommodate individuals' requirements and availability meant that, ultimately, and out of the ten colleagues who were allocated to make a contribution to this part of the research process, only seven confirmed their availability and eventually participated in the face to face forum. Two colleagues were unable to confirm their availability for any of the alternative dates offered by the researcher due to various commitments, and one was unable to attend due to a work related emergency.

The Structure and Content of the Face to Face Forum

The face to face discussion was held on Friday 10th December 2004. In the first instance, and following the welcome foreword, a summary of the research project and an outline of the structure of the event were presented.

Next, the colleagues present were asked to participate initially in an ice breaker activity which lasted for approximately ten minutes (Appendix XIII). They were then invited to consult a booklet which was handed out to them, and included a selection of proposed topics for discussion (Appendix XIV). It was explained that the themes put forward were offered merely as a suggestion to initiate discussion, and that

participants should not feel restricted by those but allow for the conversation to develop and follow up any ideas as they evolved instead.

The proposed discussion topics employed in the face to face setting were no different than those utilized in the on-line forum, in an attempt to ensure that the total of the sample was exposed to the same triggering themes suggested for discussion. The face to face discussion was audio recorded and approximately 60 minutes of recording were transcribed (Appendix XV) employing the *Guidelines for Verbatim Transcription* (Appendix XVI) adapted by Poland (2002) and Powers (2005).

4.2.10 The On-line Forum Evaluation

The last, but not least, stage in the data collection process involved recording and appraising the participants' experience in utilizing the on-line forum. For this purpose, an *Evaluation Questionnaire* was employed to gather information about a) the contextual factors that encouraged or hindered participants' involvement in the on-line forum, and b) their perceptions of its effectiveness and value to promote collaborative continuing professional development. The evaluation questionnaire utilized in this study was adapted by the work of Anderson and Kanuka (1997) and Phares (1999), and a copy may be found in Appendix XVII.

I had hoped for a high response rate from the on-line forum participants but, despite my email reminders for completing the evaluation form, eventually only six questionnaires were returned; four colleagues forwarded the evaluation questionnaire as an email attachment, whilst the other two were returned by post. I had also hoped to carry out in-depth face to face interviews with at least seven of the participants who collaborated on-line, but I was unable to do so as most of them were unavailable due to time restrictions. However, two colleagues were able to provide feedback on the on-line interaction they experienced through a telephone conversation (again due to time constrictions) and ultimately two telephone interviews were conducted.

The format of the telephone interviews was semi-structured as a pre-determined set of questions was employed to guide the conversation, allowing for scope for ideas to develop as they occurred. The questions addressed were in principle guided by the content of the evaluation questionnaire, whilst taking into consideration Kvale's (1996) quality criteria for an interview (retrieved from

Bryman, 2004), i.e. the *nine different kinds of question* and the *list of qualification criteria of an interviewer* (Appendix XVIII).

The objectives of the telephone interviews were to explore issues around the individuals' on-line involvement, their perceived effectiveness of the on-line experience in relation to their professional development, alongside recommendations for improvements that would add value to the on-line experience and guide future forums' development. The telephone interviews were transcribed to inform the subsequent data analysis stage of the research process, and a copy of the transcription may be found in Appendix XIX.

4.3 Methods of Collecting and Analysing Empirical Data

The on-line forum evaluation might have been of course the final *act* in the process of conducting fieldwork in the context of the present inquiry, but it was by far the last *scene* in the interplay of collecting and analysing empirical data within the *play* of synthesizing meaning.

The socially situated researcher creates through interaction the realities that constitute the places where empirical materials are collected and analysed. In such sites, the interpretive practices of qualitative research are implemented. These methodological practices represent different ways of generating empirical materials grounded in the everyday world (Denzin and Lincoln, 2003a:47).

Qualitative research, as a set of interpretive activities, has no distinct set of methods or practices that are entirely its own: qualitative researchers use semiotics, content and phonemic analysis, even statistics, graphs and numbers; they also draw upon and utilize the approaches, methods, and techniques of ethnomethodology, phenomenology, deconstructionism, interviews and survey research to mention only a few (Denzin and Lincoln, 2003b:9-10). What's more, 'no specific method of practice can be privileged over any other' (ibid.) as all of these methods 'can provide important insights and knowledge' (Nelson *et al.*, 1992:2).

With Nelson's argument in mind, I will now turn to offer a succinct overview of the methods employed with reference to both collecting and analysing the empirical data generated for the purposes of the present inquiry. However, it would

be relevant to clarify at this point that the term ‘methods’ typically refers to both data collection techniques and analyses, given that the type of data collected is so intertwined with the type of analysis that is used (Tashakkori and Teddlie, 1998:43). The discussion below reflects an image of how the ‘continuum between quantitative and qualitative [methods] is embraced, and the huge range of hybrid and combined strategies in between the two end points is preserved (Luttrell, 2005:189).

4.3.1 Methods of Data Collection

From the preceding narrative, the reader might recollect that I have employed a range of data collection methods, encompassing the *questionnaire* and the *interview* techniques, and the generation of *transcript records* (originated from the discussion that occurred in two settings within the case, i.e. the face to face and the on-line forums).

What follows reflects my reasoning for the role and purpose of the methods employed in the present investigation, and offers *a view* and *a re-view* of how the data were collated and examined; quite possibly, this is a belated attempt to atone for what now might look like a fairly un-reflexive(!) qualitative research, as I inject another layer of reflexivity from the present moment (2007-2008), a *reflexive voice* which disrupts the narrative of the chapter at key points in order to develop or question my initial reflexive analysis (Finlay, 2003:148).

Questionnaires

Two different questionnaire instruments were employed in the present study. The first one, the *Initial Questionnaire*, consisted of thirteen closed items and one open ended question that informed the *self-completion* questionnaire. Specifically, the closed items were made of *personal factual questions*, i.e. questions that ask the respondent to provide personal information, such as age, occupation and so forth (Bryman, 2004:150), which provided both dichotomous and nominal variables.

The open ended question was employed as the ‘attractive device for those sections of a questionnaire that invite an honest, personal comment from the respondents in addition to ticking numbers and boxes, as it is open-ended responses that might contain the ‘gems’ of information that otherwise might not have been caught in the questionnaire’ (Cohen and Manion, 2000:255).

The *elicited text*, i.e. the text that the researcher only partially shapes, involved research participants in producing written data in response to the inquirer's request and following detailed instructions. As Charmaz (2006) observes 'a mailed questionnaire or, increasingly, internet surveys containing open-ended questions are common sources of these texts' (2006:36) and qualitative researchers often use texts as supplementary sources of data (ibid.:37-38). To the extent possible we need to situate texts in their contexts and a major way of using texts is as objects for analytic scrutiny themselves rather than for corroborating evidence (2006:40).

The responses to the open ended question were analysed thematically with some quantification but also textual analysis [i.e., the data were coded into either *descriptive* or *critical reflection* based on Ho and Richards's *Table for Descriptive and Critical Reflection* (1993) [with minor modifications] to assess participants' reflective thinking by identifying and capturing emerging characteristics of *descriptive writing*, *descriptive reflection*, *dialogic reflection* and *critical reflection* (Hatton and Smith, 1994).

The second questionnaire, the *On-line Forum Evaluation Questionnaire*, was employed as an evaluation device to gather information on the levels of participants' involvement and perceptions of the effectiveness and value of the on-line forum employed to promote collaborative continuing professional development (Anderson and Kanuka, 1997). It consisted of 30 closed questions items and one open ended question, and the data generated were analysed by adopting similar methods to those employed for the analysis of the data generated by the *Initial Questionnaire*.

Interviews

Speaking of interviews, I would like to refer, and after Manning (1997), to 'dialogical conversations' instead, as interviews between the respondents and the researcher are not one-way, information-gathering situations:

Interviews are "guided conversations" (Guba, 1985; Lincoln & Guba, 1985) or dialogical conversations between researcher and respondent. These interactions are conducted such that both parties "view reality as a process...always becoming" (Reason, 1981, p. 241), characterized by openness and collaboration (Schwandt, 1996). Dialogical conversations become part of the hermeneutic process as data, emerging themes, researcher assumptions, virtually all parts of the research process, are folded together (Manning, 1997:105).

According to Bogdan and Biklen (2003), good interviews are those in which the subjects are at ease and talk freely about their points of view (2003:96). In these lines, qualitative research questions are often very broad, an approach to research known as ‘emic’ (DePoy and Gitlin, 1998), and this means that the researcher is seeking to present an insider perspective on the subject being studied (Fade, 2003:144).

In addition, it is considered to be a valuable strategy to assure people who we interview that ‘no one will ever know what they have said to us’, i.e. that we maintain confidentiality, as if we can't make that assurance, we usually worry about the validity of the results; ‘this insulates the people interviewed from the consequences they would suffer, if others knew their opinions, and it is this insulation that helps us discover people's private thoughts, the things they keep from their fellows, which is often what we want to know’ (Becker, 1996:62). In other words, for the qualitative-minded researcher, the interview technique may offer the opportunity for an *authentic gaze* into the soul of another, or even for a politically correct dialogue in which researcher and researched offer mutual understanding and support; the rhetoric of interviewing in-depth repeatedly hints at such collection of assumptions (Silverman, 2003:343).

In these lines, the in-depth approach to the interview technique was employed in the present inquiry, and as a final act in the process of gathering rich data on participants’ experience of the on-line forum. Specifically, two interviews were conducted by telephone and they held the hallmarks of a semi-structured design ‘to gather descriptive data in the subjects’ own words so that the researcher can develop insights on how subjects interpret some piece of the world’ (Bogdan and Biklen, 2003:95): ‘in the hands of the qualitative researcher, the interview takes on a shape of its own’ (ibid.).

In particular, the interview process was heavily influenced by Kvale’s (1996) list of ‘kinds of question’ (e.g. introducing, probing, specifying and follow-up questions) and ‘qualification criteria of an interviewer’ (e.g. knowledgeable, clear, gentle, open, steering and interpreting) and a copy of the interview questions, including Kvale’s guidelines, may be found in Appendix XVIII.

There are several advantages of telephone over face to face interviews, i.e. on a like-for-like basis they are cheaper and quicker to administer or even easier to supervise, especially when there are several interviewers involved (Bryman, 2004:114). However, there is one additional, distinct advantage related to ‘evidence’,

and which I wish to highlight and in relation to the argument that respondents' replies may be affected by the researcher's presence and/or even certain characteristics such as class and ethnicity:

The remoteness of the interviewer in telephone interviewing removed this potential source of bias to a significant extent. The interviewer's characteristics cannot be seen and the fact that he/she is not physically present may offset the likelihood of respondents' answers being affected by the interviewer (Bryman, 2004:115).

In addition, the fact that the inquirer was able to demonstrate 'sensitivity in the more subtle issues' raised by the participants, and due to her prolonged involvement in the same field, was perceived as a distinct advantage in eliciting information from the participants of the study (Fernandez *et al.*, 2002:117). All in all, these approaches have enabled me to *reach* participants' thoughts on their on-line forum experience in close proximity, and ultimately gain an understanding of 'what worked' and 'what didn't'.

At this point, and to inject another layer of reflexivity from the present moment (2008), I would have to admit that it might have been useful to conduct *in depth* interviews with the face to face setting participants as well. I think that, and at that point in time (2004), I was so preoccupied with the success (or not) of the on-line forum discussion that I did not consider adequately the potential benefit of injecting additional data to the study, i.e. data generated from exploring colleagues' views on their experience of the face to face collaboration.

It could have also been that, and because of my physical presence during the face to face discussion, I felt I was able to assess whether the case *worked well* or whether *it didn't* as I can recollect that, in observing the participants collaborating vividly in a face to face mode, both my personal feeling and observation were that they enjoyed the conversation to the extent that they conversed for longer than required.

Indeed, as Charmaz puts it, and drawing from Glaser (2002): 'All is data. Yes, everything you learn in the research setting(s) or about your research topic can serve as data' (Charmaz, 2006:16). However, I can only speculate as for the 'why' face to face participants were so eager to engage themselves in a collaborative dialogue with their colleagues, even longer than required; nonetheless, I will never be able to report

on what might have been the participants' perceived reasons behind their eagerness to collaborate and through data generated from conducting *in depth* interviews.

Still, I might be able to identify 'what was missing' from the on-line forum setting, that otherwise, and had it been there, it could have made perhaps a substantial difference in terms of the interactivity attribute, by comparing participants' views on the contextual factors that promote high(er) levels of interactivity in an on-line forum with the contextual factors embraced in the design of the face to face setting.

Transcripts

Speaking of interviews, nearly all qualitative research touches upon talk and text and nearly all types of qualitative data end up in the form of some kind of text: in conducting the interviews, researchers usually work with written transcripts; similarly, audiotapes of naturally occurring interaction are usually transcribed prior to (and as part of) the analysis (Silverman, 2003:353,359): 'texts are based on transcriptions of interviews and other forms of talk; these texts are social facts, they are produced, shared, and used in socially organised ways (Denzin and Lincoln, 2003a:56).

As such, and in this case, transcripts were not generated solely from the *in depth* interviews; instead, the majority of transcripts were generated from the face to face and the on-line forums discussion, the first comprising of approximately 60 minutes of recording and the latter of a series of messages posted on the on-line forum and within an eight weeks time framework (Appendices XI and XV).

However, the transcription process may sometimes be perceived as problematic, especially in those instances where the spoken or written words are *reduced* or *magnified* to the extent that the product (the transcript) signals the creation of a *new* text, considerably deviated from the original data. Thus, Lemke (2003) asks eloquently: 'What is preserved? What is lost? What is changed? Just the change of medium from speech to writing alters our expectations and perceptions of language' (Lemke, 2003:1176).

I would like to emphasize that in light of those issues I maintained 'closeness to the data' (Weitzman, 2000:815-817), and in line with the research goals of the present inquiry, by transcribing the data myself and adhering to 'transcriptions of actual occurrences and in their actual sequence' (Sacks, 1984:25) and by employing

the method of *member checks* that allowed two participants of the study and one ‘outsider’ to review the transcription process. A copy of the guidelines for verbatim transcription employed in the present study may be found in Appendix XVI.

4.3.2 Methods of Data Analysis

Once one has achieved saturation in the process of collecting empirical data, the researcher is confronted with what I prefer to see as ‘a multiplicity of complex conceptual structures, many of them superimposed upon or knotted into one another, which are at once strange, irregular, and inexplicit, and which [one] must contrive somehow first to grasp and then to render (Geertz, 2003:150).

In all social research, some guide is needed to see what is present and what is absent in any given case as, sometimes, the things that are absent in a case help the most in explaining why it is one way and not another; however, it is easy to miss what is absent without some sort of *analytic frame* to guide the analysis as, without this guidance, the tendency is to focus only on what is present (Ragin, 1994:65).

Literature refers to *analysis* as ‘a challenging and exciting stage of the qualitative research process that requires a mix of creativity and systematic searching, a blend of inspiration and diligent approach’ (Richie and Lewis, 2003:199). I would like to expand on this and view the *analysis* of data as the ‘process of sorting out the structure of signification and determining their social ground and import’ (Geertz, 2003:149).

Scholars have developed numerous frameworks for qualitative research design to present and even more approaches to analysis (Fade, 2003:142). Due to the nature of the present inquiry, however, it is impossible for one to have a priori knowledge of the meaning that will emerge (Lincoln and Guba, 1985) and, as such, the researcher must remain open and curious, ‘casting the net widely’ (Geertz, 1973:23) in an effort not to foreclose too soon on the inquiry purposes (Manning, 1997:106).

A number of distinctions are made by researchers in terms of qualitative analysis: Seidman (1991) distinguishes between coding and thematic analysis, and the creation of several different types of narratives, which he calls “profiles” and “vignettes”; Weiss (1994) between “issue-focused” and “case-focused” analysis; Dey (1993) between “categorization” and “linking”; and Maxwell and Miller (1996)

between “categorizing” and “connecting” strategies (Maxwell, 2004:255-256). I shall argue I have been involved more or less in all of them and in one way or another.

Grounded Theory

Glaser and Strauss (1967) were concerned with how the discovery of theory from data, systematically obtained and analysed in social research, can be furthered and believed that the discovery of theory from data – which they called *grounded theory* – was a major task and that it provided us with relevant predictions, explanations, interpretations and applications (1967:1). A major strategy that they emphasized for furthering the discovery of grounded theory is the ‘general method of comparative analysis’ (ibid.).

Glaser and Strauss coined the terms *constant comparison* to describe the process of progressive category clarification and definition, and the term ‘theoretical sampling’ (Tesch, 1990:86) with reference to the judgment ‘what data to collect next and where to find them’ (Glaser and Strauss, 1967:45). Since it was first introduced in 1965, the constant comparative analysis method has been a key concept in the development and understanding of grounded theory, as this method makes probable the achievement of a complex theory that corresponds closely to the data by forcing the analyst to consider all the diversity in the data (Fernandez *et al.*, 2002:113). The figure below, illustrates the steps and processes in building a grounded theory (ibid.):

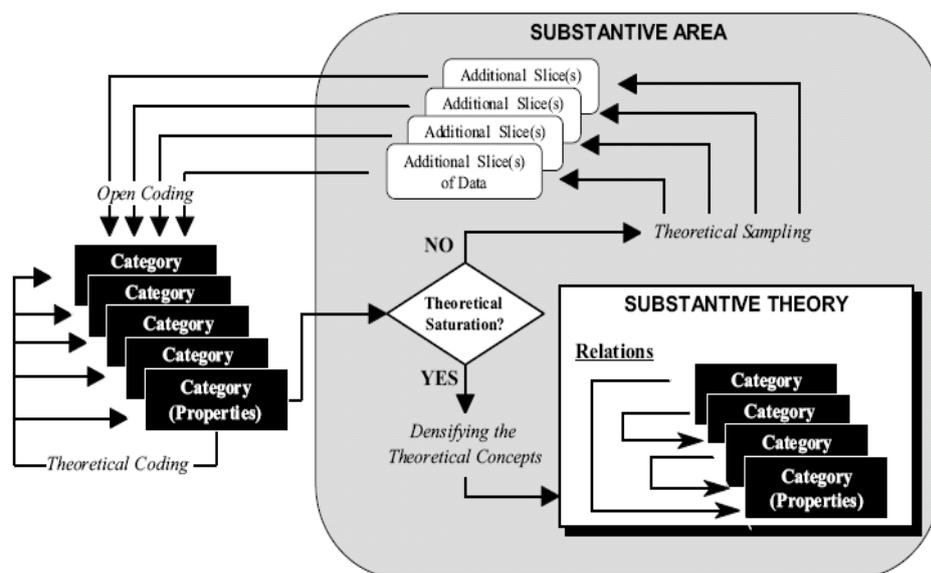


Figure 4.3 The Grounded Theory Cycle

Glaser and Strauss (1968) distinguished ‘grounded theory’, that is, theory grounded in the data collected, from theory generated from logical deduction from *a priori* assumptions; in other words, grounded theory is likely to generate more useful hypotheses in that it has been inductively developed from observational research in the real world (Sturman, 1999:104). Specifically, what Glaser (1998) guards against is ‘preconceived interview guides, units for data collection, samples, received codes, following diagrams, rules for proper memoing and so forth’ (1998:94).

However, while *case study* is perceived to be an ideal methodology for grounding theory, it does not follow that case study researchers approach (or should approach) settings without guiding theories and hypotheses; in fact, it is unlikely that they would be able to do this even if they wished (ibid.):

It is impossible to start with pure observation, that is, without anything in the nature of a theory. Selection within observation takes place and this selection is based on conjectures and anticipations and on other theories which act with as a frame of reference for investigators (Popper in Sturman, 1999:104).

Blumer’s (1969) notion of *sensitizing concepts* comes useful at this juncture, i.e. grounded theorists often begin their studies with certain research interests and a set of general concepts, which give you ideas to pursue and sensitize you to ask particular kinds of questions about your topic (Charmaz, 2006:29-30). In fact, Glaser and Strauss (1968) also recognized that researchers may come into the field with a ‘general sociological perspective’.

However, what they were warning against was allowing preconceived theories or ideas to dictate *relevances* in concepts and hypotheses in the conduct of research. Wilson (1977) talked of ‘suspending’ or ‘bracketing’ preconceptions: ‘researchers should not be expected to be free of conjectures, but these should not preclude other avenues of inquiry’ (Sturman, 1999:105). To arrive at an explanation of a case therefore, it requires a rich description of the case and an understating of it, in particular the relationship of its parts (ibid.). It is what Kemmis (1980) calls getting engaged in the process of ‘iterative retroduction’:

With each cycle of retroduction, new ‘surprises’...are encountered and new hypotheses (interpretations) are advanced. These, in turn, suggest new

implications and avenues for disconfirmation which, when pursued may generate new surprises (Kemmis, 1980:115).

Still, *causality* is only suggestive, incomplete, and indeterminate in a constructivist grounded theory, and therefore a grounded theory remains open to refinement (Charmaz, 2000:524). I argue that I address this matter by additionally employing the method of content analysis.

Content Analysis

Content analysis was an additional technique employed in this study, complementary to the method of the constant comparative analysis, for the purposes of deconstructing what occurred in the face to face and the on-line environments when synchronous and asynchronous discussions were held during the data collection process (Agostino, 2005:4).

Content analysis has been defined as a systematic, replicable technique for compressing many words of text into fewer content categories based on explicit rules of coding (Berelson, 1952; GAO, 1996; Krippendorff, 1980; and Weber, 1990 in Stemler, 2001). According to Berelson (1952), content analysis is a research technique for the objective, systematic, and quantitative description of the manifest content of communication (1952:489). This method entails the use of replicable and valid methods for making specific inferences from text to other states or properties of its source (Krippendorff, 1969:70).

Content analysis has been perceived as the *favourite method* by many quantitative researchers, where they establish a set of categories and then count the number of instances that fall into each category (Silverman, 2003:348). In its historical development, content analysis has grown to include qualitative strategies as well (Tesch, 1990:25), and today the best content analysis studies utilize both qualitative and quantitative approaches (Weber, 1985:10). For example, Spindler and Spindler (1992) offer an overview of their qualitative approach to quantitative materials by advocating that ‘instrumentation and quantification are simply procedures employed to extent and reinforce certain kinds of data, interpretations and test hypotheses across samples (1992:69).

A central idea in content analysis is that the many words of the text are classified into much fewer content categories (Weber, 1985:7). While the ‘recording

units' are sometimes larger than words (sentences, paragraphs, or themes), the basic procedure in content analysis is to design categories that are relevant to the research purpose, and to sort all occurrences of relevant words or other recording units into these categories (Tesch, 1990:79).

The crucial requirement of course is that the categories are sufficiently precise to enable different coders to arrive at the same results when the same body of material is examined (Silverman, 2003:348). Atkinson (1992), however, points out the danger of relying solely on a given set of categories by arguing that they furnish 'a powerful conceptual grid' which, although very helpful, may also lead to dangerous paths of overlooking other, crucial to the analysis categories (1992:459).

Some researchers argue that initial labels will, and should, be rather loosely defined and mundane, possibly using participants' own terms, or what Blumer (1954) termed 'sensitizing concepts', which give a general reference to empirical instances, later developing into more analytical, definitive concepts which 'refer precisely to what is common to a class of objects, by the aid of the clear definition of attributes or fixed bench marks' (1954:7).

***The Scheme of Indicators for Determining Evidence of Reflection:
Reflections on Developing the Conceptual Framework***

When it comes to the concept of reflection, literature points to a plurality of meanings and a plethora of measurement tools or 'rubrics' that claim to reliably measure or assess aspects or levels of reflection (Van Manen, 1997; Mesriow, 1981; Goodman, 1984; James and Clarke, 1994; Kim, 1999; Marchel, 2004). According to Newman *et al.* (1995), the content analysis technique seems to be a powerful way of studying critical thinking, particularly in the way it allows us to study different aspects of critical thinking and the stages of the critical thinking process (1995:89).

However, Mayring (2000) notes that classical quantitative content analysis has few answers to the question from where the categories come or how the system of categories is developed: 'How categories are defined ... is an art. Little is written about it' (Krippendorf, 1980:76). Data analysis, which was conducted during and after the data collection process, involved the identification of dominant themes and the clustering of themes into categories (Merriam, 1988) and via the procedures of inductive category development, which are oriented to the reductive processes formulated within the psychology of text processing:

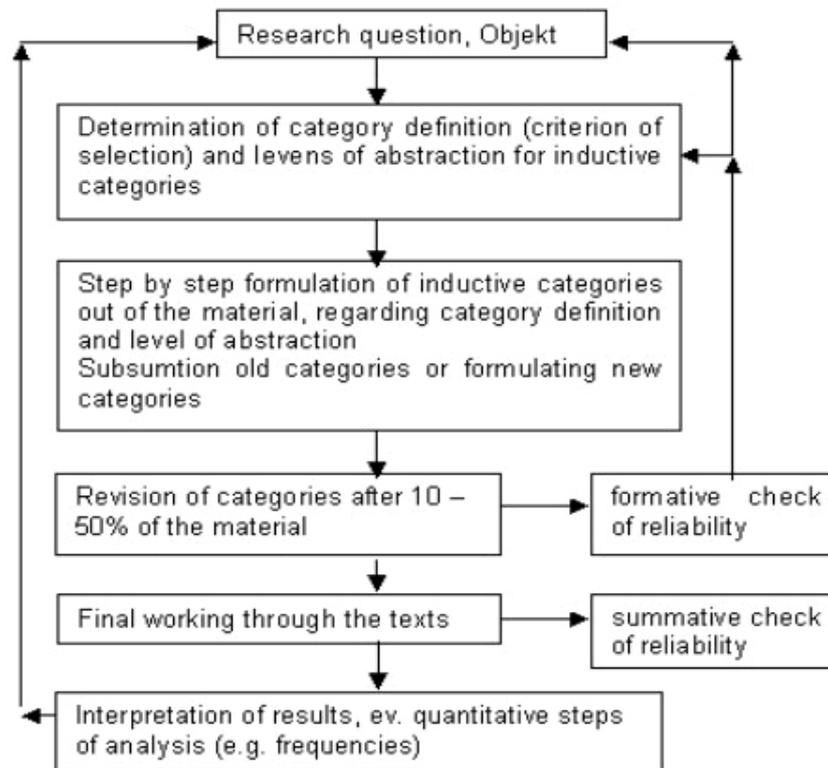


Figure 4.4 Step Model of Inductive Category Development (Mayring, 2000)

In this thesis, a new framework for determining evidence of reflection emerged by employing a meticulous, cross examination method in developing the coding scheme, utilizing more than two approaches to the investigation process. It was developed inductively by

a) analyzing the data, whilst employing the method of constant comparison (Glaser and Strauss, 1967) and the step model of inductive category (Mayring, 2000),

b) reviewing existing relevant guiding theories and hypotheses, whilst bearing in mind Glaser's (1998) advice guarding against preconceived received codes, following diagrams, and so forth (1998:94),

c) drawing from Plato's, Aristotle's, and Confucius's views on interpretation, judgement and self-actualization respectively, and

d) being inspired by the Cartesian perspective, which assumes that self-awareness drives one's knowledge and understanding for teaching and embraces all types and aspects of reflection, arguing that any sign of reflection is beneficial for the reason that it indicates a consciousness of self.

Existing philosophical and theoretical frameworks then have been the lens through which the coding scheme for assessing the reflection element was developed and the empirical data were interpreted. In other words, the projected scheme of reflective indicators offers both a philosophical, theoretical conceptualization and an empirical exploration of the notion *reflectere* (to make use of the Latin origin of the term *reflection*), which is at once grounded on and verified by the data of the present study:

The word ‘reflection’ has a Latin origin [the word ‘reflection’ originates from the Latin verb ‘reflectere’ which means bend or turn (‘flectere’) backwards or back (‘re’)] and is used broadly (French ‘reflexion’, German ‘Reflektion’, Swedish ‘reflektion’) with a common meaning that doesn’t seem to have changed much over time (Bengtsson, 1995:26).

The table that follows illustrates the coding categories that emerged for assessing reflection in participants’ face to face and on-line contributions:

SCHEME OF INDICATORS FOR DETERMINING EVIDENCE OF REFLECTION			
	ASPECT/ MODE OF EPISODE	DEPTH OF REFLEXIO ACT	DESCRIPTION [any or all of the below]
EPISODES	Un-reflective / Other [UN-R]		Realms of thought, passive agreement/acceptance, information processing, task-related, social interaction
	Reflexio Act [R]	Reflective Thinking [RT]	Bending back on an object or process, experience, philosophy /belief, description without an explanation or an evaluative judgment, (rhetoric) questions, seeking to understand in an effort to explain/make a judgment
		Reflective Interpretation [RI]	Judgement/Explanation/Justification (reference to how+what+why)
		a) Non-rational Interpretation [RI-AR]	Unreasoned evaluative judgements, an explanation or an evaluative judgment with an explanation based on gestalts, patterns, habitual action, rigid opinion, personal preference, emotions, values
		b) Rational Interpretation [RI-R]	Analytic explanation, argumentation, extensive analysis of the issue with reference to e.g. causal relationships, the socio-economic and political context, decomposing, reframing, reconstructing
		Core/Silent Reflection [CR]	<p>One thinks outside the boundaries of an episode and makes contact with deeper levels inside (deep examination of one's being rather than just examination of external episode). The focus is on the inner experience and evidence may be all or some of the below:</p> <ul style="list-style-type: none"> -examining, tasting, comprehending -understanding, confirming, verifying -overcoming inner conflict -probe more deeply into personal knowledge -beliefs become uncertain/revised decisions -self criticism (not just intellectual argumentation) -an experience finally makes sense and can be relied on future action -possibility of creating new knowledge <p>The ultimate result is self-actualization/realization.</p>

Table 4.3 Overview of the Scheme of Indicators for Determining Evidence of Reflection

Schon (1987) has suggested that professional education undervalues practical knowledge and grants privileged status to intellectual scientific and rational knowledge forms that may only be marginally relevant to practical acting; the literature of teaching and teacher education has shown that professional practices of educating cannot be properly understood unless we are willing to conceive of practical knowledge and reflective practice quite differently (Van Manen, 1995:33). Korthagen and Wubbels (1995) pose the argument that the view of reflection as a purely rational process is too limited and that emotions and attitudes play a crucial role too (1995:70).

The conceptual distinctions or reflection stages that emerged during the data analysis process, are no more than distinctions within and abstraction of a wider picture (or building blocks) of a lived life, where living is perceived as ‘living as learning over time’ (Oakeshott and Fuller, 1989:87). The purpose of learning is growth, and our minds, unlike our bodies, can continue growing as we continue to live (Adler, 1986:88). Connelly and Clandinin (1995) in an article entitled *Narrative and Education* pose the challenging question:

What does it mean to have an education? Our search for an answer to that question led us to link education with life. We analyze Michael Oakeshott and Erik Erikson’s works to make the point that education is a life process. The autobiographical writing of Mary Catherine Bateson and Henry Adams led us to a view of education as transcending schooling and as referring to life development. Oliver Sack’s work with sleeping sickness is used to develop the idea of cultivations and awakenings and of how these are interwoven with education and life (1995:73).

In essence, I wish to argue for a wider concept of reflection that embraces the whole gamut of one’s lifelong experiences, both rational and emotional, a reflection that progresses and unfolds gradually in terms of awakening, cultivation, and transformation, and leads ideally to a more effective and, perhaps, more rewarding type of continuing professional development, that of the ultimate development or self-actualization:

Cultivation is mainly found in the intentional hard work of schooling and in the unintentional lessons of play and other forms of daily life; awakening is found in the romance of becoming aware of the possibility of seeing oneself and the

world in new ways; transformation is found in the process and outcome of falling into living new ways of seeing. Transformation returns a person to cultivation though in a different place. The awakenings and transformations of one person or generation may be or become the cultivations of another (Connelly and Clandinin, 1995:82).

A mind map that illustrates how my thoughts evolved in developing the conceptual framework embracing the coding scheme is documented and it is enclosed at the end of this thesis, in Volume II.

Unit of Analysis

Krippendorf (1980) describes the unit of analysis as a discrete element of text that is observed, recorded, and thereafter considered data (Hew and Cheung, 2003c). Many units have been experimented with, as noted in educational CMC literature, extending from the smallest recording unit of text, the ‘word’, (Holsti, 1969; Krippendorf, 1980) the ‘sentence’ (Hillman, 1999), the ‘paragraph’ (Hara *et al.*, 2000) to the ‘message’ (Marttunen, 1997); however, none has been sufficiently reliable, valid, and efficient to achieve pre-eminence (Rourke *et al.*, 2001b).

For example, Gunawardena *et al.* (1998) developed a model where the messages are the focus of the analysis, i.e. they have analysed each on-line posting in turn. However, the challenge that arises in this model is the fact that an on-line message or posting may contain more than one idea or thought. Budd and Donohue (1967) proposed an alternative model where the focus of the analysis is the *thematic unit*, i.e. a single thought unit or idea unit that conveys a single item of information extracted from a segment of content (1967:34). Thematic units as adopted by Henri's (1992) model reflect the logic of the indicators, but resist reliable and consistent identification (Howell-Richardson and Mellar, 1996 in Hew and Cheung, 2003c).

In this context, Rourke *et al.* (2001b) go on to declare that the most appropriate unit would combine the flexibility of the thematic unit, which allows coders to capture a unit in its natural form, with the reliable identification attributes of a syntactical unit. However, ultimately, and to draw by Krippendorf's (1980) reflections on this matter, the choice of the unit of analysis involves considerable compromise between meaningfulness, productivity, efficiency, and reliability (1980:64).

The unit of analysis in this research project was a conceptual unit referred to as 'reflective unit' (El-Dib, 2007:30), defined as one's idea or thought about a particular topic or event. The data were then coded according to the coding scheme for assessing reflection: 'coding is the process in which the raw data is transformed and aggregated into units which allow for the precise description of the content characteristics' (Holsti, 1969:94). Krippendorff argues that, ideally, coding should be done by more than one researcher to ensure there is no personal bias (1980:52), thus, the coding of the empirical data was carried out by two researchers, the principal investigator and a volunteer, to warrant there was no personal bias.

Reliability

The issue of reliability in the content analysis is of significance. According to Holsti (1969), analysis is dependent upon how well the researcher coded the documentation and on the degree of insight he has, as how valid the outcome of the research will be depends upon the extent to which the method measured what it was intended to measure (1969:135). Weber (1990) argues that to make valid inferences from the text, it is important that the classification procedure be reliable in the sense of being consistent: different people should code the same text in the same way (1990:12).

To meet reliability standards the criterion of agreement was addressed. This criterion is concerned with whether coders agree as to the precise values assigned to a given variable; this is particularly appropriate to measures that are categorical (i.e. nominal), wherein each pair of coded measures is either a hit or miss (Kimberley, 2002:149). In the absence of a uniform standard or test of meaningful significance (Popping, 1988), the best we can expect at present is full and clear reporting of at least one reliability coefficient for each variable measured in a human-coded content analysis (Kimberley, 2002:144).

In the present study, Holsti's (1969) formula was adopted to calculate agreement and determine *inter-coder agreement* or *coefficient of reliability* (CR) (1969:140): in cases in which two coders code the same units (which is the recommended method), this is equal to percent agreement (Kimberley, 2002:149). Percent agreement is simply the proportion of units with matching descriptions on which two observers agree (Hays and Krippendorff, 2007:78). This statistic (CR)

ranges from .00 (indicating no agreement) to 1.00 (indicating perfect agreement) (Shoemaker, 2003; Coolican, 1999) with the formula being

$$CR = 2M/N_1 + N_2$$

Figure 4.5 Holsti's Formula (CR)

and where ' M = the number of coding decisions the two coders have agreed', ' N_1 = the number of coding decisions achieved by the first coder', ' N_2 = the number of coding decisions achieved by the second coder', and ' $N_1 + N_2$ = the total number of coding decisions' (Singletary, 1994:295).

In this study, the data were reviewed and coded twice by the researcher to guarantee *coding stability* (Krippendorff, 1980). The reliability levels of content analysis and coding were determined by undertaking two inter-coder agreement tests to allow for any disagreements amongst the two coders to be resolved: when disagreements occur, coders might resolve them by negotiating or requesting the authority of the principal coder, who might have a prejudice (Krippendorff, 1980:78). The inter-coder agreement reported in this study was 0.91 (compared to 0.84 that was reported before any disagreements were resolved).

4.3.3 Causal Explanation in Context

In discussing causal explanation in context, I wish to emphasize that addressing the concept of *causality* is a matter dependent on both the data collected as well as the analysis strategy used (Maxwell, 2004:255).

In terms of the data gathered under the present inquiry, I argue that I have embraced a range of 'rich data' (Maxwell, 1992:288-289) that are detailed and varied enough to provide a full and revealing picture of what is going on and of the processes involved (Becker, 1970):

In the same way that a detailed, chronological description of a physical process (e.g., of waves washing away a sand castle or the observations of patient falls described above) often reveals many of the causal mechanisms at work, a

similar description of a social setting or event can reveal many of the causal processes taking place. In a social setting, some of these processes are mental rather than physical and are not directly observable, but they can often be inferred from behaviour (including speech) (Maxwell, 2004:254-255).

What is more, and after Becker (1970), rich data ‘counter the twin dangers of respondent duplicity and observer bias by making it difficult for respondents to produce data that uniformly support a mistaken conclusion, just as they make it difficult for the observer to restrict his observations so that he sees only what supports his prejudices and expectations’ (1970:53). All in all, rich data provide a test of one’s developing theories, as well as a basis for generating, developing, and supporting such theories (Maxwell, 2004:255).

In terms of analysis, I claim that I have engaged myself in the *iterative retroduction* process by utilizing both the grounded theory and the content analysis technique in a way which I shall call ‘narrative and connecting analysis’, i.e. in embracing the gap between the two types of analysis, one using categorization and comparison and the other identifying actual connections between events and processes (Maxwell, 2004:255): ‘with a firm reliance on multiple methods, we sought to cross over, converse with, and tap into the different kinds of data, *adding* one layer of data to another to build a confirmatory edifice’ (Fine *et al.*, 2000:119). This type of analysis I argue accomplishes successful ‘elucidation of the actual connections between events and the complex interaction of causal processes in the specific context (Maxwell, 2004:255):

This use of multiple methods or triangulation, reflects an attempt to secure an in-depth understanding of the phenomenon in question...Triangulation is the display of multiple, refracted realities simultaneously. Each of the metaphors ‘works’ to create simultaneity rather than the sequential or linear. Readers and audiences are then invited to explore competing visions of the context, to become immersed in and merge with new realities to comprehend.

Viewed as a crystalline form, as a montage, or as a creative performance around a central theme, triangulation as a form of, or alternative to, validity thus can be extended (Denzin and Lincoln, 2003b:8).

4.4 An Alternative Stance for Evaluating Qualitative Research: Reflections on the Validity and Reliability Agenda

Some of the main preoccupations of scholars have been evolving around how far *reliability*, *validity* and *generalizability* are appropriate criteria for evaluating qualitative data, and whether alternative criteria that are more tailored to the research strategy are necessary (Bryman, 2004:266). Tobin and Begley (2004), and in line with Bryman's argument, explain that much of current understanding of the difficulties associated with these concepts has emerged as researchers have striven for clarity of purpose in qualitative methodologies (2004:389). As Lincoln and Guba (2003) put it: 'nowhere can the conversation about paradigm differences be more fertile than in the extended controversy about validity (2003:274).

Becker (1996), in discussing an alternative notion to that of 'validity' for qualitative researchers, refers to the 'problems of translation between languages and cultures' (explicitly referring to the language used by quantitative and qualitative purists) and reminds us of Kuhn's call for attention that, when there is a substantial paradigm difference, as in the case of a paradigm shift, the language in which scientific work is conducted cannot be translated into one another (1996:68-69). And he goes on to explain:

So what seem like quite reasonable requests for a little clarification are the playing out of a familiar ritual, which occurs whenever quantitative workers in education, psychology, and sociology decide that they will have to pay attention to work of other kinds and then try to coopt that work by making it answer to their criteria, criteria like reliability and validity, rather than to the criteria I proposed, commonly used by qualitative workers.

I would say that I was *not dealing* with validity, but *was*, rather, *dealing* with something else that seems as fundamental to me as validity does to others [i.e. credibility] (ibid.).

At those edges, a plethora of conversations has surfaced around the validity and reliability agenda. Janesick (2000), to start with, proposes that it is time to question the trinity of validity, generalizability, and reliability [all terms from the quantitative paradigm and the use of psychometric language], and in fact replace that language with terms that more accurately capture the complexity and texture of qualitative research (Janesick, 2000:393).

Similarly, since reliability and validity are rooted in the positivist perspective, then, they should be redefined for their use in a naturalistic approach (Golafshani, 2003) or as Strauss and Corbin (1990) put it ‘the usual canons of *good science* require redefinition in order to fit the realities of qualitative research’ (1990:250).

In the constructionist camp, we do not believe that criteria for judging either ‘reality’ or ‘validity’ are absolutist (Bradley and Schaefer, 1998) but rather are derived from community consensus regarding what is ‘real’, what is useful, and what has meaning (Lincoln and Guba, 2003:264). The contention here is that ‘these excellent suggestions offer us heuristic tools to reconceptualize the space’ (Janesick, 2000:393). In these lines,

serious efforts have been undertaken to develop standards which are parallels of those commonly used by rationalists, that is, counterparts to standards of internal and external validity, reliability and objectivity. Analogous terms have been proposed, viz., (respectively) credibility, transferability, dependability and confirmability (Guba and Lincoln, 1999:147).

Let us explore that.

4.4.1 Quality in Qualitative Research¹²: The Criterion of Trustworthiness

All research, whether quantitative or qualitative, should be judged on the quality of the methods used (Fade, 2003:140). Mays and Pope (2000) writing in the *British Medical Journal* assert that both qualitative and quantitative research should be seen as an attempt to represent reality rather than attain the truth, suggesting that both research traditions can be judged by common quality criteria, particularly those of validity and relevance (Fade, 2003:140).

The issue of quality in qualitative research has troubled social science disciplines for at least a quarter of a century and, as Sandelowski and Barroso (2002) have recently observed, ‘scholars ... have sought to define what a good, valid, and/or trustworthy qualitative study is, to chart the history of and to categorize efforts to

¹² The subheading ‘Quality in Qualitative Research’ has been captured from the text book entitled *Turning Points in Qualitative Research: Tying Knots in a Handkerchief* edited by Lincoln and Denzin (2003:170).

accomplish such a definition, and to describe and codify techniques for both ensuring and recognising good studies (Rolfe, 2006:304).

One contemporary dialogue, that has centered (Whittemore *et al.*, 2001:522) on the discussion of quality in qualitative research, was initiated from the concerns about validity and reliability in the quantitative tradition (Golafshani, 2003:602) and ‘involved substituting new term for words such as validity and reliability to reflect interpretivist [qualitative] conceptions’ (Seale, 1999:465).

‘In replacing validity, generalizability, and reliability with qualitative referents’ (Janesick, 2000:393), Lincoln and Guba (1985) propose the criterion of *trustworthiness* that complements ‘four aspects’ (Bryman, 2004) or otherwise their own four-point criterion list for naturalistic inquirers; a concern with *credibility* should replace truth value and ‘the most crucial technique for establishing credibility’ is through ‘member checks’ (Lincoln and Guba, 1985:314); *transferability* should replace applicability, or external validity as conventionally conceived; *dependability* is proposed as a replacement for consistency, or reliability as conventionally conceived, to be fulfilled by peer auditing procedures; auditing is also useful in establishing *confirmability*, a criterion designed to replace the conventional criterion of neutrality or objectivity (Seale, 2003:172).

Specifically, and after Bryman (2004):

- *Credibility*, which parallels internal validity, enquires: How believable are the findings?
- *Transferability*, which parallels external validity, enquires: Do the findings apply to other contexts?
- *Dependability*, which parallels reliability, enquires: Are the findings likely to apply at other times?
- *Confirmability*, which parallels objectivity, enquires: Has the investigator allowed his or her values to intrude to high degree?

(Bryman, 2004:30)

In this context, I will now turn to illustrate how I have implemented these criteria throughout the present empirical investigation.

Credibility

Many qualitative researchers have struggled to identify more *appropriately* how they do ‘what they do’, and rather than borrowing terms from the quantitative paradigm, they have rightly offered alternative ways to think about descriptive validity and the unique qualities of case study work:

The description of persons, places, and events has been the cornerstone of qualitative research. Validity in qualitative research, in contrast to the validity in the quantitative arena that has a set of technical microdefinitions, has to do with description and explanation and whether or not the explanation fits the description.

In other words, is the explanation credible? In addition qualitative researchers do not claim that there is only one way of interpreting an event, i.e. there is no one ‘correct’ interpretation (Janesick, 2000:393).

Credibility then (comparable with internal validity) addresses the issue of ‘fit’ between respondents’ views and the researchers’ representation of them (Schwandt, 2001) and poses the questions of whether the explanation fits the description (Janesick, 2000) and whether the description is credible (Tobin and Begley, 2004:391). By applying the suggestions of Lincoln and Guba (1985) and others, we may cross-check our work through member checks and audit trails, i.e. as a rule and in writing up the narrative, the qualitative researcher must decide what form the member check will take (Janesick, 2000:393). The researcher needs to find a way to allow for the participants to review the material one way or another (ibid.).

For example, the creative use of ‘member checking’, submitting drafts for review by data sources, is one of the most needed forms of validation of qualitative research (Stake, 2000:450). This technique is a ‘process of continuous, informal testing of information by soliciting reactions of respondents to the investigator’s reconstruction of what he or she has been told or otherwise found out and to the constructions offered by other respondents or sources’ (Lincoln and Guba in Manning, 1997:102).

Guba and Lincoln (1981) consider *member checks* ‘the backbone of satisfying the truth-value criterion’ (1981:110). Reason and Rowan (1981) argue that such member checks (recycling analysis back through at least a subsample of respondents) need to become a standard part of emancipatory research designs: ‘good research at

the non-alienating end of the spectrum ... goes back to the subject with the tentative results, and refines them in the light of the subjects' reactions (Lincoln and Denzin, 2003:248).

To adhere to this criterion I have incorporated 'a kind of member check' by asking two of the participants of the study and one 'outsider' (Stake, 2000:450) to review at regular stages the transcription process of both the face to face and the on-line forum discussion and the interview records to confirm that these records are a true account of the discussions. In addition, coding discussions in the analysis process were discussed until agreement was reached (Fade, 2003:141-142).

Last, Fade (2003) observes that adopting 'a process known as triangulation, can also enhance credibility'; in other words, the study design could incorporate the use of more than one method of data collection (e.g. semi-structured interviews, questionnaires) or more than one analyst (e.g. peers or participants) (Fade, 2003:141). In a similar vein, Charmaz makes a point when she argues that *the quality – and credibility – of your study* starts with the data, in that the depth and the scope of the data make a difference (Charmaz, 2006:18). Thus, and with reference to the preceding discussion on the data collection and analysis methods, I argue that I have armoured the credibility of the study by employing a mixed methods approach to the data collection and analysis course of action.

Transferability

Transferability is the qualitative parallel criterion to external validity, the latter examining whether and to what extent the results of a study can be generalised beyond the specific research context (Bryman, 2004:29). In a naturalistic study, this concerns only the case-to-case transfer (Tobin and Begley, 2004:392). To this end, and to expand further, Bryman (2004) observes that case study researchers argue vigorously that generalisation is not the purpose of their craft but instead, they aim to generate an intensive examination of a single case, in relation to which they then engage in a theoretical analysis:

The central issue of concern is the quality of the theoretical reasoning in which the case study researcher engages...the crucial question is not whether the findings can be generalised to a wider universe, but how well the researcher generates theory out of the findings (Mitchell 1983, Yin 1984). Such a view places case study research firmly in the inductive tradition of the relationship between theory and research (2004:52).

In a similar vein, Janesick (2000) agreeably observes that for those of us who are interested in questions of meaning and interpretation in individual cases:

...traditional thinking about generalizability falls short, and in fact may do serious damage to individual persons. The traditional view of generalizability limits the ability to reconceptualize the role of social science in education and human services.

In addition, the whole history of case study research in anthropology, education, sociology and history stands solidly on its merits. In fact, the value of the case study is its uniqueness; consequently reliability in the traditional sense of replicability is pointless here (2000:394).

On these grounds, and to meet the *transferability* aspect of *trustworthiness*, I have a) portrayed a thorough description of the data collection and analysis methods and techniques, b) in combination with a rigorous analysis of the research design employed in this study and its rationale, and c) I have emphasized on providing a *true* account and adequate discussion of the participants' 'powerful statements' (ibid.) so as to enable the reader to comprehend as much as possible, both about the case and its contextual factors.

Dependability

Dependability is the criterion which parallels reliability (Guba and Lincoln, 1999). Reliability is generally understood to concern the replicability of research findings and whether, or not, they would be repeated if another study, using the same or similar methods, was undertaken (Ritchie and Lewis, 2003:270). In this context, they further argue:

In a realm of numerous controversial views, 'the 'constructivist' school argue that there is no single reality to be captured in the first place so replication is an artificial goal to pursue. Others are concerned that the concept of 'replication' in qualitative research is naïve given the likely complexity of the phenomena being studied and the inevitable impact of context (Lincoln and Guba, 1985) (ibid.).

Because of such concerns, the idea of seeking reliability in qualitative research is often avoided and instead writers discuss similar issues using terms and concepts that are felt to have greater resonance with the goals and values of qualitative research. For example in discussing reliability a number of authors talk about... the 'dependability' (Lincoln and Guba, 1985) of the evidence (ibid.).

All of these features lie in the heart of reliability and raise important questions about whether researchers can ensure that these qualities exist and how they can measure or demonstrate them (ibid.).

Seale (1999) in discussing *reliability* and *replication* 'sees the expectation of complete replication as a 'somewhat unrealistic demand' but argues that this is more a consequence of practical problems associated with qualitative research than 'insuperable philosophical problems' concerned with conceptions and measurements of 'reality' (1999:158). His view is that good practice in relation to reliability and replication can be achieved through the aspect of reflexivity, i.e. 'showing the audience of the research study as much as possible of the procedures that have led to a particular set of conclusions' (ibid.).

In addition, Lincoln and Guba (1985) emphasize the 'inquiry audit' (1985:317) as an additional measure which might enhance the dependability of qualitative research. This can be used to examine both the process and the product of the research for consistency (Hoepfl in Golafshani, 2003:601). In other words, the consistency of data will be achieved when the steps of the research are verified through examination of such items as *raw data*, *data reduction products*, and *process notes* (Campbell in ibid.).

Another anxiety relates to the extent to which assessments, judgements, ratings and so on, internal to the research conduct, are agreed or replicated between researchers, judges and so on; in other words, what are the levels of what is sometimes termed *inter-rated reliability*, often seen as synonymous with internal reliability? (Ritchie and Lewis, 2003:270).

Moreover, inquirers realise that the practice of research makes an element of subjectivity inescapable and that is why, and through the exploitation of reflexivity, they are required to *come clean* about how *subjective* and *inter-subjective* elements have impinged on the research process in order to increase the integrity and trustworthiness of their research (Finlay, 2002 in Finlay and Gough, 2003:40-41).

To this end, I claim that I meet the *dependability* criterion a) by reporting explicitly on the inter-coder reliability levels ‘as an indication of measurement consistency’ (Lombard *et al.*, 2005) in the content analysis of the transcripts, and b) by documenting, reflecting, verifying and analysing the research strategy and methodology explicitly every step of the way.

Confirmability

Confirmability shifts the emphasis from the *certifiability* of the enquirer to the *confirmability* of the data (Guba and Lincoln, 1999:147) or, otherwise, is concerned with establishing that data and interpretations of the findings are not figments of the inquirer’s imagination, but are clearly derived from the data (Tobin and Begley, 2004:392). Confirmability parallels objectivity in that it enquires whether the investigator has allowed his or her values to intrude (Bryman, 1994:300) and seeks to ensure that the influence of the researcher’s judgement is minimised (Lincoln and Guba, 2003:271).

With respect to *confirmability*, Guba and Lincoln (1999) propose that we use overlap methods, one kind of triangulation which undergirds claims of dependability to the extent that the methods produce complementary results; a reflexive journal, that can be used to expose epistemological assumptions and to show why the study was defined and carried out in particular ways; and, a confirmability audit to ascertain that every entry can be supported with appropriate documentation and that the totals are properly determined (1999:148). Auditing then can be used to authenticate confirmability (Tobin and Begley, 2004:392).

To this end, I have provided a ‘chain of evidence’ (Yin in Mertens, 1998:184) by explicitly and reflexively describing the research design process, whilst directing the reader to the source of data (located in appendices) as appropriate. Furthermore, hard and soft copies of all the transcripts that were recorded at different stages of the fieldwork have been stored safely and they would be available for a confirmability audit, if necessary. Finally, separate emphasis is placed on discussing the value of

employing a mixed methods approach in the process of data collection and analysis (or a kind of ‘triangulation’ as Guba and Lincoln usually refer to) and it is examined in the subsequent discussion.

Now, and to ‘return to the central question embedded in validity: How do we know when we have specific social inquiries that are faithful enough to some human construction, that we may feel safe in acting on them, or more important, that members of the community in which the research is conducted may act on them?’ (Lincoln and Guba, 2003:277). To that question, although there is no final answer, still, there are several discussions about how one might make both professional and lay judgements regarding any piece of work; it is to those versions of validity that I now turn (ibid.).

4.4.2 Validity as Authenticity¹³

In the preceding discussion, I have explored the four aspects assigned to the criterion of trustworthiness, i.e. *credibility*, *transferability*, *dependability* and *confirmability*, illustrated how each one of these aspects parallels to the equivalent quantitative research criteria (Bryman, 2004:30), and ultimately discussed their application to the present study.

Still, it must be noted that the concept of trustworthiness has not ‘passed’ unchallenged in the literature. Sparks (2001) argues that Lincoln and Guba’s aim to develop comparable criteria is questionable and that the concept of ‘checking’, as advocated by them, is certainly antithetical to the epistemology of the qualitative inquiry and reveals philosophical inconsistencies (Tobin and Begley, 2004:392).

In other words, these criteria depend on a contradictory philosophical position, because the belief in ‘multiple constructed realities’, rather than a ‘single tangible reality’ (Lincoln and Guba, 1985:295), which lies at the heart of the constructivist paradigm for example, is not consistent with the idea that criteria for judging the trustworthiness of an account are possible; relativism ‘does not sit well’ with attempts to establish ‘truth’, even if the term is placed in inverted commas (Seale, 2003:173).

¹³ The subheading ‘Validity as Authenticity’ has been captured from the text book entitled *The Landscape of Qualitative Research: Theories and Issues* edited by Denzin and Lincoln (2003b:277).

However, research that lies within the interpretive paradigm embodies a vast and evolving body of techniques that can be modified or developed as the research demands (Winter, 2000:32). As Maxwell (1992) explains, ‘a method in itself is neither valid nor invalid; methods can produce valid data or accounts in some circumstances and invalid ones in others (1992:284).

Reflecting on their earlier positions then and acknowledging other scholars’ critical comments (Tobin and Begley, 2004:392), Guba and Lincoln (1989, 1994) proposed in later work a fifth criterion, the ‘authenticity’, which has been proposed as being consistent with the relativist view that research accounts do no more than represent a sophisticated but temporary consensus of views about what is considered to be true (Seale, 2003:173).

Guba and Lincoln (1989) claim to have developed perhaps the first nonfoundational criteria for judging the *processes* and *outcomes* of naturalistic or constructivist inquiries rather than the application of methods (Lincoln and Guba, 2000:180).

Those authenticity criteria-so called because we believed them to be hallmarks of authentic, trustworthy, rigorous, or ‘valid’ constructivist or phenomenological inquiry-were fairness, ontological authenticity, educative authenticity, catalytic authenticity, and tactical authenticity (ibid., 2003:278).

In detailing the components of authenticity, Guba and Lincoln (1989, 1994) reveal a sympathy for political conceptions of the role of research that was already evident in their earlier commitment to the value of member checking (Seale, 2003:173). Authenticity, they say, is demonstrated if researchers can show that they have represented a range of different realities (‘fairness’); research should also help members develop ‘more sophisticated’ understandings of the phenomenon being studied (‘ontological authenticity’), be shown to have helped members appreciate the viewpoints of people other than themselves (‘educative authenticity’), to have stimulated some form of action (‘catalytic authenticity’), and to have empowered members to act (‘tactical authenticity’) (ibid.).

Authenticity is closely linked to credibility in validity and involves the portrayal of research that reflects the meanings and experiences that are lived and perceived by the participants (Sandelowski in Whitemore *et al.*, 2001:530). In other words, one might argue that a research report demonstrates ‘authenticity’

(epistemological validity and cultural authority) insofar as it gives direct expression to the ‘genuine voice’, which ‘really belongs’ to those whose life-worlds are being described (Winter, 2002:146).

Omission of stakeholder or participant voices reflects, we believe, a form of bias (Lincoln and Guba, 2003:279). An attempt to remain true to the phenomenon under study is essential (Hammersley in *ibid.*) and thus, the key questions are:

- Has the inquirer exhibited a high awareness of subtle differences in the voices of others (Lincoln in Whitemore *et al.*, 2001:530)?
- Has a representation of the *emic* perspective been accurately portrayed and, at the same time, accounted for the investigator’s perspective? (Maxwell in *ibid.*).

Although authenticity can never be assured, the researcher has a responsibility not to make up interpretations divorced from the research context or agreed-on methodological procedures (Manning, 1997:97). In this spirit, and to address the criterion of authenticity, the present inquiry has ensured that ‘all stakeholder views, perspectives, claims, concerns, and voices are apparent in the text of this craft (Lincoln and Guba, 2000:180).

With regard to explicitness, an audit trail of a variety of investigator-generated data were consistently and conscientiously recorded (Rodgers and Cowles in Whitemore *et al.*, 2001:531), and accounting for methodological decisions, interpretations, and investigator biases was explicitly reported as an important adjunct to the research findings, allowing for insight into research judgements (Marshall, 1990; Sandelowski, 1986 in *ibid.*).

In these lines, Janesick (2000) emphasizes that the qualitative researcher must honestly probe his or her own biases at the onset of the study, during the study, and at the end of the study by clearly describing and explaining the precise role of the researcher in the study (Janesick, 2000:389). Another way for ensuring strong authenticity is for researchers to ensure that participants feel free to talk about issues that are important to them, rather than issues that are important to the researchers (Fade, 2003:144).

To this end, I argue that I have explained to the participants of the study that the discussion topics posed both in the on-line and the face to face discussion forums were for guidance purposes only and that they should feel free to follow the flow of the discussion as it evolves.

In addition, *multivocality* of perspectives and voices were reported (Altheide and Johnson, 1994) and any bias or ethical considerations in the design and conduct of the research study were made explicit (ibid.). Echoing that, and in agreement with Fade (2003), I further claim that I have enhanced the authenticity attributes of the study ‘by quoting significant blocks of raw narrative from the original data through a narrative which is often referred to as being ‘rich’ or ‘thick’ (2003:144). In other words, and after Kvale (1989), validation has become a constant process of ‘investigation, continually checking, questioning, and theoretically interpreting the findings’ (Kvale, 1989:77).

4.4.3 Validity as Resistance and Poststructural Transgression¹⁴

Like reliability and validity - as used in quantitative research - are providing springboard to examine what these two terms mean in the qualitative research paradigm, triangulation - as used in quantitative research to test the reliability and validity - can also illuminate ways to test or maximize the validity and reliability of a qualitative study; therefore, reliability, validity and triangulation, if they are relevant research concepts, particularly from a qualitative point of view, have to be redefined in order to reflect the multiple ways of establishing truth (Golafshani, 2003:597).

Laurel Richardson (1994, 1997) has proposed another form of validity, a deliberately ‘transgressive’ form, the *crystalline*, which I am very keen to adopt as I feel it reflects in close proximity the purpose and the procedures employed in the present study. Richardson (1997) has sought to ‘problematize reliability, validity and truth’ in an effort to create new relationships: to her research participants, to her work, to other women, to herself (1997:165), arguing that ‘transgressive forms permit a social scientist to ‘conjure a different kind of social science...which means changing one’s relationship to one’s work, how one knows and tells about the sociological’ (ibid.:166).

¹⁴ The subheading ‘Validity as Resistance and Poststructural Transgression’ has been captured from the text book entitled *The Landscape of Qualitative Research: Theories and Issues* edited by Denzin and Lincoln (2003b:279).

In order to see ‘how transgression looks and how it feels’, it is necessary to ‘find and deploy methods that allow us to uncover the hidden assumptions and life-denying repressions of sociology; resee/refeel sociology; reseeing and retelling are inseparable’ (Lincoln and Guba, 2003:279). The way to achieve such validity is by examining the properties of a crystal in a metaphoric sense (ibid.:280). The following ample quotation offers an *aroma* of what Richardson explains in a very elegant manner as the concept of *crystallization* and how it might be described and deployed:

I propose that the central imaginary for ‘validity’ for postmodernist texts is not the triangle—a rigid, fixed, two-dimensional object. Rather the central imaginary is the crystal, which combines symmetry and substance with an infinite variety of shapes, substances, transmutations, multidimensionalities, and angles of approach. Crystals grow, change, alter, but are not amorphous. Crystals are prisms that reflect externalities and refract within themselves, creating different colours, patterns, arrays, casting off in different directions. What we see depends upon our angle of repose. Not triangulation, crystallization.

In postmodernist mixed-genre texts, we have moved from plane geometry to light theory, where light can be both waves and particles. Crystallization, without losing structure, deconstructs the traditional idea of ‘validity’ (we feel how there is no single truth, we see how texts validate themselves); and crystallization provides us with a deepened, complex, thoroughly partial understanding of the topic. Paradoxically, we know more and doubt what we know (Richardson, 1997:92).

Recognising then that our world is ‘far more than three sides’ (Richardson, 2000:934), we are challenged to embrace the concept of crystallization, which enables a shift from seeing something as a fixed rigid two-dimensional object towards a concept of the crystal and allows for infinite variety of shape, substance, transmutations, multidimensionalities and angles of approach (Tobin and Begley, 2004:393).

Indeed, the properties of the crystal-as-metaphor may help writers and readers alike see the interweaving of processes in the research: discovery, seeing, telling, storying, re-presentation (Lincoln and Guba, 2003:280). Rather than triangulating commonalities and thereby eliminating differences, multiple perspectives can be employed synergistically, as to see in-depth we require *different* perspectives even if these are very small (Breuer and Roth, 2003:4); afterall, gaining ‘depth’ is a general

principle of knowledge production that arises from juxtaposition of multiple, different perspectives (ibid.).

By employing crystallization as a methodological referent in the present study, we would understand that a) the manner in which we investigate a participant's nature of *science* knowledge for example, will influence what we find and that b) this knowledge will vary according to the content that the participant is considering, and c) the purpose or goals of his/her consideration (Southerland *et al.*, 2005:11).

This methodological referent would require that the present study be mindful that participants' nature of [science] knowledge will be variable, but will have a core, albeit a complex one. Our goal as researchers should be to use methods that account for this variation and complexity (2005:12). To address this matter, I have argued that I employed the *Initial Questionnaire Tool* technique as part of the preliminary stages of the research process, in order to gather information about predetermined key variables within the population and to which end, this information meant to act afterwards as a catalyst to the subsequent sampling decisions that took place.

4.5 Voice and Reflexivity

An effulgent range of methodological innovations in the qualitative arena has resulted from efforts to replace the traditional attempt to discover and record the truth, the most prominent of those innovations being *reflexivity* and *multiple voicing* (Gergen and Gergen, 2000:1027).

Their particular importance derives in part from the way in which they challenge the traditional binary between research and representation, that is between acts of observing or 'gathering data' and subsequent reports on this process (ibid.). There is increasing recognition that because observation is inevitably saturated with interpretation, and research reports are essentially exercises in interpretation, research and interpretation are inextricably entwined (Behar and Gordon, 1995; Gergen, Chrisler and LoCicero, 1999; Visweswaran, 1994 in Denzin and Lincoln, 2000:1027).

4.5.1 Voice

Voice is a multilayered problem, simply because it has come to mean many things to different researchers; in former eras, the only appropriate ‘voice’ was the ‘voice from nowhere’ – the ‘pure presence’ of representation, as Lather terms it, whilst today *voice* can mean, especially in more participatory forms of research, not only having a real researcher – and a researcher’s voice – in the text, but also letting research participants speak for themselves, either in text form or through plays, forums, ‘town meetings’, or other oral and performance-oriented media or communication forms designed by research participants themselves (Lincoln and Guba, 2003:282).

Rosanna Hertz (1997) illustrates voice as

a struggle to figure out how to present the author’s self while simultaneously writing the respondents’ accounts and representing their selves. Voice has multiple dimensions. First, there is the voice of the author. Second, there is the presentation of the voices of one’s respondents within the text. A third dimension appears when the self is the subject of the inquiry...Voice is how authors express themselves within an ethnography (Hertz, 1997:xi-xii).

Bryman (2004) denotes the use of a ‘dialogic’ form of writing that seeks to raise the profile of the multiplicity of voices that can be heard in the course of fieldwork (2004:500). As Lincoln and Denzin (1994) describe: ‘Slowly it dawns on us that there may...be...not one ‘voice’, but polyvocality; not one story, but many tales, dramas, pieces of fiction, fables, memories, histories, autobiographies, poems, and other texts to inform our sense of lifeways, to extend our understandings of the other...’ (1994:584).

The researcher then engages in the difficult task of ensuring fairness in the all-important task of striving to assure that various participants had an equal chance to express their voice during the research (Manning, 1997:100). Member checking then arises once more as a significant technique to warrant representation of participants’ voices. On framing this, and after Manning, to neglect member checking means that the researcher’s voice is the only one assuming the authority to interpret and construct findings; this elitist stance is incongruent with a subjective epistemology (1997:102).

In these lines, I have utilised the member checking technique throughout the present study, working under the tenet that ‘findings are not abstract and detached from the respondents and research context, but an interpretation and co-construction of what is discovered through the research’ (Reason in Manning, 1997:102).

4.5.2 Reflexivity

As co-construction progresses, the researcher becomes more informed about the research context, kneads those constructions into subsequent data collection, and confirms and disconfirms findings via member checking (Manning, 1997:109). Member checking and co-construction push the researcher as he or she engages in a reflexive process of self-monitoring, continual questioning, and re-evaluation of the entire research process (Kvale in *ibid.*).

The modernist text is reflexive in that it does not attempt to create an illusion of an objective reality that has simply been observed and reported; instead it includes in the text explicit reminders of its status as a construction, and of the process of that construction (Winter, 2002:150). In resembling the modernist text with modern art Adorno (1984) describes: ‘Modern art does not hide the fact that it is something made and produced’ (Adorno, 1984:39).

The writer of a reflexive text then does not seek to hide behind the claim to have described a unified, apparently objective reality, but acknowledges her/his role as the subjective presenter of a plural text, which is frankly constituted as a still non-unified assemblage of disparate realities (Winter, 2002:151): ‘The author’ is not so much ‘dead’ (Bartes, 1977) as ‘re-born’ in the more modest role of master of ceremonies, presiding uncertainly over a plurality of perspectives (*ibid.*).

Reflexivity raises the most fundamental issue that can be raised for modern social enquiry (Bonner, 2001:267). Hall and Callery (2001) have argued that reflexivity should be used by grounded theorists in order to improve rigour, as it is widely felt that such endeavours can enhance the transparency, accountability and general trustworthiness of research study (Coffey and Atkinson in Finlay and Gough, 2003:28). Rolfe (2006) in emphasizing the importance of reflexivity argues:

In effect, it behoves researchers to leave a ‘super’ audit trail, recounting not only the rationale underpinning the research decisions taken *en route*, and the *actual* course of the research process rather than the *idealized* version that the reader is usually presented with, but also, as Koch and Harrington (1998) advise, ‘ongoing self-critique and self-appraisal’, including the moral, social and political stance of the researchers themselves (2006:309).

Mason (2002) in explaining the implications of adopting a reflexive approach articulates that ‘a reflexive reading will locate you as part of the data you have generated...you will probably see yourself as inevitably and inextricably implicated in the data generation and interpretation processes, and you will therefore seek a reading of data which captures or expresses those relationships (2002:149).

In a similar vein, Mair (1989) highlights the necessity of paying close attention to how we approach any inquiry and how we live and employ the reflexive process (Finlay and Gough, 2003:101). Distinctively, he explains that ‘ignoring is an integral part of any knowing, since we have to turn away from what we cannot bear or fear to undertake. We are likely to come to recognise that our ways of ignoring have been developed to an even greater extent, than our still timid ways of involving ourselves in the dangerous seas of knowing’ (Mair, 1989:7).

None of us -whether researchers or participants- have privileged access to the ‘reality’ of our lived experience. When we narrate our experience (be it in an interview or when providing a reflexive account) we offer one version -an interpretation- which seems to work for that moment.

Like an external observer, we have to reflect on the evidence and recognise the indexicality and non-conclusive nature of any of our understandings...all reflection is situational...always subject to revision’ (McCleary in Merleau-Ponty, 1962, p.xx) (Finlay and Gough, 2003:101).

Wertz (1984) has urged researchers to reflect vigorously on the data collection process by arguing that ‘the researcher’s use of descriptions is not based on a naïve acceptance of verbal *per se*; rather she is forced to reflect rigorously on the particular problems each research project poses (Wertz, 1984:39).

In these lines, I claim that the present study facilitates reflexivity in that a) I ensure ‘transparency’ throughout the study, i.e. I provide as much information as

possible about the steps involved in the research project, including details about how the topic was selected, how participants were recruited, which methods were used as well as the research outcomes (Finlay and Gough, 2003:147), and b) I report and review of how the data were produced and examined (in 2004) and by injecting another layer of reflexivity from the present moment (2007-2008), a 'reflexive voice', which disrupts the narrative part of the study at key points in order to develop or question my initial reflexive analysis (ibid.:148). In other words, *tempora mutantur, nos et mutamur in illis* [times change, and we change with them], as while in the field as participants or observers, our perceptions and understandings of salient objects and events change (Breuer and Roth, 2003:3) and these changes in perceptions and understandings need to be recorded.

Eventually, reflexivity should be 'neither an opportunity to wallow in subjectivity nor permission to engage in legitimised emoting (Finlay, 1998:455). The challenge for researchers using introspection is to use personal revelation not as an end in itself but as a springboard for interpretations and more general insight. In this sense, the researcher moves beyond 'benign introspection' (Woolgar, 1989:22) to become more explicit about the link between knowledge claims, personal experiences of both the participant and the researcher, and the social context (Finlay and Gough, 2003:8).

An obvious problem with the suggestion of making researcher assumptions explicit is that one cannot explicate what one does not know (Manning, 1997:104). We are unable to see that which we are *unawarely* contributing (Reason, 1981:244). Member checking and peer debriefing can uncover unexamined researcher assumptions, challenge one another's unacknowledged beliefs in an attempt to critically examine what is disturbed and shaken loose during the research process (Manning, 1997:104).

To this end, I have examined and discussed various aspects of the research design and interpretation of results with my two mentors, with a few research postgraduate students and most importantly with two of the participants in this study to unmask potential weak presumptions and those false apprehensions that could jeopardize the 'goodness' of this study.

4.6 Ethical Considerations

Josselson (1996) argues that our knowing or writing about our participants' lives may expose them to consequences that neither we nor they could have foreseen; hence, a researcher needs to recognize the dangers and pitfalls of narrative research (1996:xiii). In this context, the American Sociological Association (ASA) has published a *Code of Ethics* (available at www.asanet.org) with the fundamental principles elaborated by this code being:

- Research should not harm respondents;
- Participation in research must be voluntary, and therefore respondents must give their informed consent to participate;
- Researchers must disclose their identity and affiliations;
- Anonymity or confidentiality must be maintained for respondents unless explicitly and voluntarily waived;
- The benefits of a research project should outweigh any foreseeable risks.

(Warren and Karner, 2005:30).

Similar discussions and literature about ethics and the role of values in the research process, including useful codes of ethics, may be obtained by the British Sociological Association (BSA), the Social Research Association (SRA), and the British Psychological Society (BPS). In this context, Diener and Crandall (1978) have offered a useful grouping of the four main areas ethical concerns tend to arise around: whether harm comes to participants; whether there is a lack of informed consent; whether there is an invasion of privacy; whether deception is involved (Bryman, 2004:509).

What is beyond doubt is that ethical issues arise at a variety of stages in social research and they cannot be ignored in that they relate directly to the integrity of a piece of research and the disciplines that are involved (ibid., 2004:505). It is in this realm then that I wish to argue for the integrity of the present research study by addressing the key ethical principles reported in the literature and in the lines that follow.

Harm to Participants

Research that is likely to harm participants is regarded as unacceptable; harm can entail a number of facets, such as physical harm, harm to participants' development, loss of self esteem, stress and 'inducting subjects to perform reprehensible acts' as Diener and Crandall (1978:19) put it (Bryman, 2004:509). Similarly, the British Sociological Association (BSA) Statement of Ethical Practice enjoins researchers to 'anticipate, and to guard against, consequences for research participants which can be predicted to be harmful' and 'to consider carefully the possibility that the research experience may be a disturbing one' (Bryman, 2004:510).

It has already been explained that preceding the implementation of any methods and procedures for data collection, research ethics approval was sought from Durham University Ethics Advisory Committee. The issue of causing possible harm to the study participants was given thorough consideration, including any possible risks and hazards relevant to the users' involvement in the on-line discussion.

Thus, and to comply with Health and Safety regulations for display screen users, a *Health and Safety Work Assessment Form* was circulated to the on-line forum participants, alongside an information leaflet by the Health and Safety Executive (entitled *Working with VDUs*) and a web link directing them to a related free on-line tutorial (Appendix IX).

In addition, and after Warren and Karner (2005), human subjects need to be protected from the possibility of being distressed, for example, by being asked questions that may provoke emotional reactions such as shame, guilt, or sorrow; instead, the researcher should be generally trained or very careful to ask questions that are helpful rather than distressing (2005:34-35). To this end, careful consideration was given when preparing the interview questions, and which were heavily influenced by Kvale's (1996) list of 'kinds of question', e.g. introducing, probing, specifying and follow-up questions, and 'qualification criteria of an interviewer', e.g. knowledgeable, clear, gentle, open, steering and interpreting (Appendix XVIII).

Informed Consent

Ethics in social sciences research though are not only concerned with matters related to protection from harm but with issues related to the participants' informed

consent as well. The issue of 'informed consent' came under scrutiny by the Alder Hey Inquiry, where it was revealed that the public are often quite ignorant of what they are consenting to in the context of medical research (Truman, 2003). Informed consent also raises questions about the competency of some groups and individuals to agree on their own behalf to take part in research; consequently, the topic of whom, and under what circumstances consent may be given has received extensive discussion, particularly in research with vulnerable groups such as in the field of learning disability (Brown and Thompson, 1997; Stalker 1998), mental health (Usher and Arthur, 1998) and in research relating to women and children (Ribbens and Edwards, 1998) (ibid., 2003, paragraph 3.12).

Within social research, informed consent goes beyond an understanding of the nature of the research in question and extends into the terrain of the social consequences or repercussions of taking part in research (Truman, paragraph 3.13). The Social Research Association (2003) defines informed consent as 'a procedure for ensuring that research participants understand what is being done to them, the limits to their participation and awareness of any potential risks they incur' (2003:23). In other words, this principle

- a. means that prospective research participants should be given as much information as might be needed to make an informed decision about whether or not they wish to participate in the study, and also
- b. entails the implication that, even when people know they are being asked to participate in research, they should be fully informed about the research process.

(Bryman, 2004:511)

In this study, Durham University's example *Consent Form* (Appendix VII) was employed to obtain prospective research participants' written agreement to take part in this study. To ensure informed consent, participants' written agreement was obtained only after they had received detailed information of the research project (Tolich and Davidson, 1999:72). To this end, details of the research process were presented to all prospective research participants' by distributing a *Project*

Information Sheet, which was written in layman's language (following again guidelines from Durham University's Ethics Advisory Committee).

In addition, the consent form included an explicit statement which emphasized the participants' right to withdraw from the study at any time and without having to give a reason for withdrawing, in order to safeguard voluntary participation (Seidman, 1991; Tolich and Davidson, 1999).

Invasion of Privacy

This third area of ethical concerns relates to the issue of the degree to which invasions of privacy can be condoned, and it is very much related to the notion of informed consent because, to the degree that informed consent is given on the basis of a detailed understanding of what the research participants' involvement is likely to entail, he or she in a sense acknowledges that the right to privacy has been surrendered for that limited domain (Bryman, 2004:513). In these lines, the *ASA Code of Ethics* states that 'sociologists should take culturally appropriate steps to secure informed consent and to avoid invasions of privacy' (ibid.).

It shouldn't be overlooked, however, that the issue of privacy is invariably linked to issues of anonymity and confidentiality, and Warren and Karner (2005) forge this kind of connection eloquently when they argue that 'qualitative researchers are required to be, and want to be, careful about ensuring that their respondents' identities remain confidential (2005:36):

It has long been seen as important to protect confidentiality in published qualitative research, but it is now necessary to begin the confidentiality process earlier; at the point of field notes. Actual names and clearly identifying details should be removed or changed in all written materials pertaining to qualitative research (ibid., 2005:32).

In this context, specific steps were undertaken to safeguard the anonymity and confidentiality of the participants' records, ensuring that the requirements of the Data Protection Act were complied with. It was explained to all prospective research participants that all identifying information would be removed prior to the data analysis process to ensure anonymity and confidentiality, and in compliance with the requirements of the Data Protection Act. For this, pseudonyms and numbers were

used at the early stages of the research analysis process, for example, when labelling the tapes and the interview transcripts or when writing this thesis and attributing quotes to participants.

In addition, Birch and Miller (2000) have presented a very useful argument when they explain that, where the type of research is characterized by sharing personal and private experiences over a long period of time, it may involve acts of self disclosure, and where personal, private experiences are revealed to the researcher in a relationship of closeness and trust (Mauthner *et al.*, 2002:92). Thus, and after Birch and Miller (2000), sections of interviews that I judged to contain information too sensitive for public perusal or harmful to the participants' reputation were omitted. The BSA Code of Ethics appears to share the same concerns:

The anonymity and privacy of those who participate in the research process should be respected. Personal information concerning research participants should be kept confidential. In some cases it may be necessary to decide whether it is proper or appropriate to record certain kinds of sensitive information (BSA Code of Ethics).

Last, guidelines from Durham University Ethics Advisory Committee entailed that 'if [the researcher] intends to make tape recordings or video recordings of participants, [the] consent form should also include a section indicating that participants are aware of, and consent to, any use [the researcher] intends to make of the recordings after the end of the project'. Thus, and since this study required the use of tape recordings, a relevant section was included in the consent form indicating the participants' awareness and consent to any use the researcher intended to make of the recordings after the end of the project. The table below illustrates the relevant extract from the consent form:

I have been given information about the research project and the way in which my contribution will be used. It has been explained to me how the recordings will be kept confidential unless I give permission for my name to be used. My contribution will be kept safely and securely with access only to those with permission from the researcher.

Please tick:

I give my permission for the contribution I am about to make for the above project to be used for research purposes only (including research publications and reports) **with** strict preservation of anonymity.

I hereby assign the copyright in my contribution to _____
(the researcher)

Table 4.4 Extract from the Consent Form

Deception

Deception occurs when researchers represent their research as something other what it is (Bryman, 2004:514). I would like to confirm that this was not a deception study and that the notion of *deception* was addressed in this study during the very early stages of seeking research ethics approval and consent from both Durham University and LSDA, and by presenting to the prospective research population details of the investigator, brief summary of the project and overview of the research process, and the rationale for initiating this research study and the researcher's interest in the project.

I would also like to bring to the attention of the reader the Cartesian insistence that humans should treat one another as ends in themselves and never as means to other ends; this assertion, in its most literal interpretation, would prohibit all social science research, or perhaps all research not directly beneficial to the respondents involved in it and, obviously, since I have carried out this research project and I am writing this thesis, I do not accept a literal interpretation of the Cartesian strictures (Warren and Karner, 2005:41).

4.7 Limitations

This piece of work is not without its limitation; it shares with all research, for example, the fundamental limitation, and, at the same time, strength of point, that is,

I give only my viewpoint (Ricci, 2003:594). The work is subject to the politics of interpretation, as it should be (ibid.). In this sense, ‘the present discussion has not attempted to circumvent’ (Kvale, 1989:89) any limitations this study bears; but, instead, and to this end, I shall offer a succinct overview of any limitations and in the discussion that follows.

The first challenge I was faced with was to identify the research population of the study within the case. The Learning and Skills Development Agency is a development agency which provides services at a regional basis and represents a vast number of post 16 education sector and training organisations, and it portrays dissimilar numbers of registered members through the course of time.

In other words, it was not feasible to generate a detailed frame of the research population as it could not be identified through ‘official statistics or administrative records, and indeed it was too scattered [throughout the North East region of England] to be identified relatively easily through a household screen’ (Ritchie and Lewis, 2003:93). In addition, the sample of the study consisted of only twenty volunteers-participants and who responded to the email alert I addressed to the whole of the population. This matter of course implies serious implications to one’s aspirations for generalization of the research findings.

However, I would like to emphasize that a) seeking generalizations is not meaningful when studying human behaviour, as it is impossible ‘to imagine that all human activity is completely determined by one universal set of relationships’ (Guba and Lincoln, 1989:94), b) generalizations cannot be separated from time and context: ‘generalizations inevitably decay over time, and they inevitably have contextual dependencies’, and c) I envisage that, and on the basis of the rich data description and explanation I offer in the following chapters, readers might find striking similarities between the research settings and their own, which may lead them to have confidence in applying the findings within their practice (Guba and Lincoln, 1989; Sandelowski, 1993 in Appleton and King, 2002:644).

As a final touch, I would like to draw from Campbell (1975), who, in an article entitled *Degrees of Freedom and the Case Study*, addresses the criticisms of case study methodology related to the extent that it can be used to generalize to other cases or other settings:

If we achieve a meaningful quantitative 100-nation correlation, it is by dependence on this kind of knowing at every point, not by replacing it with a 'scientific' quantitative methodology which substitutes for such knowing. The quantitative multination generalization will contradict such anecdotal, single-case, naturalistic observation at some points, but it will do so only by trusting a much larger body of such anecdotal, single-case, naturalistic observations (1975:175).

4.8 Concluding Remarks

In this chapter I have presented an overview of the research design employed in this thesis and by drawing upon the pertinent literature; I have argued I have adopted a comparative methodology within the case, i.e. 'a comparison of situations in which the presumed cause is present or absent, affirming the value of case studies for causal explanation' (Maxwell, 2004:4); I have exemplified how I epitomize a mixed methods approach to data collection and analysis to address credibility matters to the particular causal explanation.

I have described the procedures and methods adopted for data collection; I have illustrated how I have employed an on-line and a face to face forums, how I have epitomised the questionnaire, interview and transcript tools during the data collection process and the methods of grounded theory and content analysis to analyse the data. Finally, I have argued for the criteria assumed for evaluating the present empirical account by addressing the criteria of *Trustworthiness* and *Authenticity*, and *Voice* and *Reflexivity*, concluding with some deliberations on ethical issues relevant to this study and the limitations to be taken into consideration.

The chapter that follows is the last chapter embedded in Section II and it portrays a narrative description of how the 'Scheme of Indicators for Determining Evidence of Reflection' evolved through engagement with the literature and interrogation of the data. It also exemplifies how the indicators are distinguished one from another by injecting coded segments of data from both the on-line and face to face communication, and discussing any challenging coding related decisions wherever appropriate, adding transparency and credibility to the process of analysis and coding of the empirical data.

In other words, Chapter 5 builds up to the preceding discussion about the criteria assumed for evaluating the present empirical account because it exemplifies the decision making process behind the development of the scheme and illustrates the application of its indicators during the analysis process, so that it becomes more

explicit and transparent to the reader, acting at the same time as a link to Section III, and also establishing the context for the discussion portrayed in Chapter 7 *Reflective Capital in Context: Findings and Comparative Reflections*, so that the presentation of findings become more convincing, credible and transparent to the reader. Let us do so.

Chapter 5

Developing the Scheme of Indicators for Determining Evidence of Reflection

5.0 Introduction

The preceding chapter has presented an *analytic frame* of the present empirical account, where I have argued for presenting an *analysis* of the research process into those instances where *analysis* means breaking the present inquiry ‘into its constituent parts and viewing them in relation to the whole they form’ (Ragin, 1994:55). I have done so by reporting on the research approach employed in this thesis, describing the procedures and instruments employed for data collection and analysis, arguing for the criteria assumed for evaluating the present empirical account, and concluding with deliberations on some ethical issues relevant to this study and the limitations to be taken into consideration.

Specifically, and when discussing the methods employed for data collection and analysis, it was explained that during the data analysis process, which involved the identification and the clustering of dominant themes into categories via the procedure of inductive category development, a new framework for identifying evidence of reflection emerged.

Hence, this chapter aims to present a narrative description of how the ‘Scheme of Indicators for Determining Evidence of Reflection’ evolved through engagement with the literature and interrogation of the data, exemplifying the decision making

process behind the development of the scheme. The utility and value of the scheme and its indicators is further portrayed by illustrating the coding decision making process, drawing segments of data from both the on-line and the face to face communication, and discussing any challenging coding related decisions where appropriate, so that it becomes more explicit and transparent to the reader.

In other words, Chapter 5 builds up to the preceding discussion (Chapter 4) about the criteria assumed for evaluating the present empirical account because it exemplifies the decision making process behind the development of the scheme and illustrates the application of its indicators during the analysis process, acting at the same time as a link to Section III, and largely establishing the context for the discussion portrayed in Chapter 7 *Reflective Capital in Context: Findings and Comparative Reflections*, so that the presentation of findings become more convincing, credible and transparent to the reader.

Let us do so.

5.1 Reflection, Assessment and Taxonomies: The Way Forward or the Signposts of a Journey Back?

At the very early stages of conceptualizing the framework of the present enquiry and, specifically, when articulating the pertinent research question, that is, what aspect and depth of reflexivity – if any – does asynchronous computer mediated communication achieve, it became apparent that a key decision had to be made with respect to the method to be employed for assessing research participants' contributions against the variable 'reflection'. Embarking then on a meticulous investigation of the literature to identify a suitable process or instrument, which would enable me to reliably assess participant's reflection when examining the on-line and face to face discourse, appeared to be the appropriate initial course of action.

Much to my delight, the literature revealed a plethora of assessment tools, rubrics and taxonomies, all available for one's pursuit to measure reflective outcomes. Bloom's *Taxonomy of Learning Domain* (1956), for example, and its six levels of the cognitive domain (Comprehension, Application, Analysis, Synthesis, and Evaluation), was one of the taxonomies most often highlighted in research outputs (Tomei, 2005), providing the foundation, frequently with certain modifications, for a range of assessment rubrics claiming to reliably assess reflection.

Van Manen (1977) was another author research studies regularly made reference to, due to his prominence in the literature for reflective teaching. Van Manen had suggested that reflection is a concept that should be captured in three differentiated stages, with the emphasis being placed on the superiority of one mode of reflection over the other; specifically, this hierarchical order ranged from low, 'technical rationality' (where the teacher is concerned with technical application of knowledge and basic curriculum principles) to medium, 'practical action' (where the teacher becomes more concerned with clarifying assumptions while addressing educational consequences) to high, 'critical reflection' (where the teacher is concerned with the value of knowledge without a personal bias).

In a similar vein, Smyth (1989) presented a hierarchy of reflection that depicted description as a low level of reflection, the primitive level in the progression to the informing and confronting stages that lead to the desirable reconstructing level of reflection (Amobi, 2006:26). Cowan (2004) as well identified four different types of reflection, which were supposedly ordered from easy to difficult uses of reflection, and from more supposedly common to less common types (Vos and Cowan, 2009).

Other research outputs made reference to Pultorak's *Taxonomy of Reflective Thinking* (1993), which included a classification of questions leading according to his belief to reflective thinking: 'What were the essential strengths of the lesson? What effect or impact did the lesson have on student learning? What, if anything, would you change about the lesson? Do you think the lesson was successful? Why?' to mention only a few.

Valli (1997), on the other hand, described five types of teacher reflection, that is, 'technical', 'in- and on-action', 'deliberative', 'personalistic', and 'critical reflection', concluding that the various approaches should be used in combination with each other, since each balances the others' deficits (1997:81), whilst at the same time emphasizing that for some educational issues one approach might be more suitable than another (Amobi, 2006:26).

Being fascinated about the plethora of available criteria and taxonomies for assessing reflection, I delved deeper into the literature of 'critical thinking' and I came across the Delphi Report (Facione, 1990), which was the outcome of long deliberations initiated by the American Philosophical Association in the late 1980's, and which defined 'critical thinking' on the basis of two core dimensions, that is, cognitive skills and affective dispositions.

The Delphi Report triggered my curiosity even further and to the point of considering exploring additional, professionally designed rubrics such as, the *Dispositions of Reflective Thinking Questionnaire* (DRTQ) developed by Wittenburg and McBride (2001), or even the possibility of purchasing more commercially available tests claiming to assess reflection, such as the *Watson-Glaser Critical Thinking Appraisal* and the *California Critical Thinking Disposition Inventory* (CCTDI). I shall not elaborate further though on the literature I explored in relation to this matter for this is not the purpose of this chapter, plus I have already discussed extensively my findings in this context in Chapter 2, where I have given a critical analysis of the pertinent literature.

What is beyond doubt is that, by that time, my initial enthusiasm had gradually turned into anxieties and alarming uncertainties, as the results of my literature review investigation were directing me to numerous prominent authors in the field of reflection and its assessment and I, a novice researcher, was feeling ‘weak’ and unable to make a decision as to which assessment tool to employ in the present empirical account. For they all appeared to be ‘effective’ in one way or another, but none of them ‘felt’ right. For what would be the grounds on which I should select a specific taxonomy over another? How could I have known which one would prove to be the best ‘fit’ for my empirical data?

To my relief, and not long afterwards, my persistent exploration of the literature led me to the discovery of a paper authored by Hawkes and Romiszowski (2001), entitled ‘Examining the Reflective Outcomes of Asynchronous Computer-Mediated Communication on Inservice Teacher Development’. This study had explored the professional development of 28 practising teachers in 10 Chicago suburban schools, with asynchronous computer-mediated communications featured as the teacher communication tools of the project, and the focus of analysis being the computer-mediated and face to face discourse produced by the project participants (Hawkes and Romiszowski, 2001:283).

What’s more, the authors of this publication had assessed all computer-mediated and face to face communications between the research participants on a ‘seven-point reflection rubric’, which was based on Simmons, Sparks, Starko, Pasc, Colton and Grinberg’s (1989) taxonomy for assessing reflective thinking (ibid., 2001:293). As the publications I had identified did not include a copy of Simmons *et al.* (1989) taxonomy, nor I was able to identify one in a library or as an online resource in the

World Wide Web, I decided to contact the first author of the publication, Mark Hawkes, via email, requesting a copy of the taxonomy.

Indeed, Mark Hawkes, who at the time was based at Dakota State University in Madison, replied very kindly and swiftly to my request by posting me details of the taxonomy I had requested. He had also enclosed a second article he thought I might find useful, entitled ‘Pedagogical language acquisition and conceptual development taxonomy of teacher reflective thought – interview and question format’ authored by Simmons *et al.* (1989).

The table that follows portrays an accurate copy of the taxonomy I received in March 2002 via airmail:

Level 1	No description of event.
Level 2	Description without any pedagogical terms or label.
Level 3	Description with a pedagogical term (e.g. ‘She used wait time).
Level 4	Explanation of event with rules or personal preference given as the ‘why’ (no principles stated (e.g. ‘She used wait time, research says it works).
Level 5	Explanation of event using cause effect principle (e.g. ‘wait time worked here because it gave kids more time to prepare an answer).
Level 6	Explanation of event using cause effect principle and contextual/conditional factors as the ‘why’ (e.g. These Hispanic kids tend to be shy because of their limited English. Works especially well because it gives them time to prepare and answer).
Level 7	Levels 5 and 6 plus reference to moral/ethical issues (e.g. ‘we used Cooperative Learning because there’s an ethnic split in this neighbourhood and group learning helps build cooperation and acceptance among such kids’).

Table 5.1 Taxonomy of Teacher Reflective Thinking (Simmons, Sparks-Langer, Pasch, Starko, Colton, 1989)

Following receipt of the taxonomy, I can now recollect how optimistic (in a very unreflective way!), almost excited, I was that I had identified the ‘correct’ taxonomy to assess levels of reflection in my prospective research participants’ contributions, perhaps because the context and the purpose of the Hawkes and Romiszowski (2001) study appeared to be in close proximity to the research objectives of the present enquiry and, although I had not even begun the process of collection and analysis of the research data, I felt confident I was successful in my endeavors to identify an appropriate assessment framework for the variable of reflection.

So far from the truth! But I was not to find out until much later, during the process of interrogation of the data and, specifically, when I first attempted to classify the present study’s empirical data based on the seven levels of reflection prescribed in the taxonomy.

5.2 Scales, Rubrics and Taxonomies, Anxieties, Crossroads and a Turning Point

From the very early stages of the research analysis process, earlier felt anxieties and uncertainties came to the surface again. Simmons *et al.*’s (1989) taxonomy, although it had initially come into view as the most alluring option, as it appeared to be both comprehensive and practical, and most importantly it was developed in a context very much comparable to my research enquiry’s objectives, now emerged to be ambiguous, ‘incomplete’ and on certain occasions ‘incompatible’ with my empirical data.

For example, let’s consider the following extract from the face to face forum transcript in relation to Simmons *et al.* (1989) seven point reflection rubric:

To be honest the most time I've been in the forces, I served with the navy and the marines, I did a marines course, but er... I played sport most of the time. I had a really cushy time me like. (laughs) So I did some coaching qualifications but academically I didn't do anything. No. I left school. Two days after I left school I was in the forces. See me coming, '75, and er I didn't do any qualifications, sorry academic qualifications till I left the forces er I had that many injuries through time in the time in the forces er doing a bit in sports with other things as well. er I thought it would be a good idea, very good idea to go into... to get certain teaching qualifications and, er and obviously coaching as well, but, that wasn't...that's another force to me, I even knew which avenue I was gonna go down, and er sports....but er I knew I needed qualifications so .. was it forced for me to do that...why... was it motivation? or was it because I wanted them qualifications just to have a bit more experience or ... was something I mentioned earlier about finances... you know, ... because of the old spondoolies...- [S].

This piece of data was a participant's response to the discussion topic 'There has been lots of discussion around successful participation and widening adult participation (LSC, 2003). So...what motivates adults to learn?'. When I tried to code this 'reflective unit' by looking into the seven scale taxonomy, my thoughts were that I could possibly code this extract under Level 6, 'explanation of event using cause effect principle and contextual/conditional factors as the 'why', (i.e. but er I knew I needed qualifications so .. was it forced for me to do that...why... was it motivation? or was it because I wanted them qualifications just to have a bit more experience or ... was something I mentioned earlier about finances... you know, ... because of the old spondoolies...-); and if one was to stretch his analysis/interpretation further, one could even possibly argue that there is a 'hidden' or an implied reference to moral/ethical issues (Level 7 of the taxonomy), as the notion of finance ('the old spondoolies') comes up.

Most importantly though, what made me feel uncomfortable was that, regardless of whether I was to code this piece of data as Level 6 or Level 7, I felt these two coding options available to me were 'insufficient' in that they did not fully capture nor adequately represent the whole gamut of the information provided by the participant and, thus, they did not reflect fully or in depth the interpretation one could attribute to this segment of data. In other words, I felt I was leaving too much rich and precious information out.

My thoughts at the time were, and most probably in a not very intellectually accurately articulated manner, that every meaningful articulated ‘word’ is the verbal representation of a thought, and when we are considering a context whilst ‘words’ have been missed out, we are also considering that context with thoughts having been missed out, and this may drive us to incomplete conclusions and interpretations. In this instance, by ‘words’ I mean the whole of the participant’s articulations evidenced in this extract, including the preliminary narrative offered by the research participant about the time he spent at school and how he joined the forces. Thus, if I was to code this reflective unit as Level 6 or Level 7, effectively, I would be utilizing in my interpretation only the last few sentences observed in this unit (i.e. ‘was it forced for me to do that...why... was it motivation? or was it because I wanted them qualifications just to have a bit more experience or ... was something I mentioned earlier about finances... you know, ... because of the old spondoolies...-’).

What about the participant’s introductory narrative though, where he probes more deeply into personal knowledge and experience in order to offer an answer to the question ‘What motivates adults to learn?’ Wasn’t this some kind of reflection? And if yes, what type of reflection would it be, and how could I code it?. For the interpretation offered in Simmons *et al.* (1989) taxonomy for Levels 6 and 7, I felt, did not offer adequate representation in this instance. I needed to find some type of representation for reflective instances like the one illustrated in the example-extract from the face to face transcript I have just described. For if I was not to find an answer to these disturbing questions, I felt I would be unable to fully capture my data and carry out a comprehensive analysis and, thus, I would be accountable for presenting an ‘incomplete’ interpretation of the research findings.

5.3 Working Together Apart: Some Reflective Enquiries about ‘Assessing Reflection’

In an attempt to find an answer to my questions, I thought I should re-examine the relevant literature and the assessment tools claiming to assess reflection. It was probably at that point when I realised that most available taxonomies and rubrics regarding reflection, including Simmons *et al.* (1989) seven point taxonomy, were either particularly task or classroom and teacher focused. It was also probably these observations which made me speculate about whether it would be wise for one to

make a decision on how to assess reflective outcomes depending on the context of the research enquiry. The two tables that follow (Fuller, 1970; Smith and Hatton, 1993; Valli, 1992; Ho and Richards, 1993) are not a comprehensive representation of the taxonomies portrayed in the literature but illustrate well my point of argument:

Reflection type	Nature of reflection	Possible content
"Reflection-in-action" (Schon, 1983, 1987) addressing IMPACT concerns after some experience in the profession	5. Contextualization of multiple viewpoints drawing on any of the possibilities 1-4 below applied to situations as they are actually taking place	Dealing with on-the-spot professional problems as they arise (thinking can be recalled and then shared with others later)
Reflection-on-action (Schon, 1983; Smith & Lovat, 1990; Smith & Hatton, 1992, 1993) addressing TASK and IMPACT concerns in the later stages of a preservice program	4. Critical (social reconstructionist), seeing as problematic, according to ethical criteria, the goals and practices of one's profession 3. Dialogic (deliberative, cognitive, narrative) weighing competing claims and viewpoints, and then exploring alternative solutions 2. Descriptive (social efficiency, developmental, personalistic), seeking what is seen as 'best possible' practice	Thinking about the effects upon others of one's actions, taking account of social, political and/or cultural forces (can be shared). Hearing one's own voice (alone or with another) exploring alternative ways to solve problems in a professional situation Analysing one's performance in the professional role (probably alone), giving reasons for actions taken
Technical rationality (Schon, 1983; Shulman, 1988; Van Mannen, 1977), addressing SELF and TASK concerns early in a program which prepares individuals for entry into a profession	1. Technical (decision making about immediate behaviours or skills), drawn from a given research/theory base, but always interpreted in light of personal worries and previous experience	Beginning to examine (usually with peers) one's use of essential skills or generic competencies as often applied in controlled, small scale settings

Table 5. 2 Types of Reflection related to Concerns (Hatton and Smith, 1995)

Reflection	Descriptive	Critical
1. Theories of teaching a) theories/beliefs about teaching and learning b) applying theories to	A belief/conviction An expert's view How a theory was applied	A justification A personal opinion Contradiction practice between theory and practice How theories changed
2. Approaches and methods	Approaches and methods The content of the lesson The learners The school context/classroom management	The teacher's knowledge in teaching: pedagogical and experience Socio-political impact
3. Evaluating teaching	Solutions to problems by seeking solutions from experts	Evaluating lessons: positive/negative Diagnosing problems: students, class interaction, teacher's problems Solutions to problems: alternative ways of presenting Lesson; deciding on a plan
4. Questions about teaching	Asking for advice	Asking for reasons Problematizing
5. Self-awareness	Perceptions of self as teacher: style and comments on language proficiency	Recognition of personal growth Setting personal goals

Table 5.3 Differences between Descriptive and Critical Reflection (Ho and Richards, 1993)

What's more, the diversity of interpretation presented in the literature about the notion 'reflection', and conveyed in the dichotomy symbolised by types and differentiated stages of reflection (Amobi, 2006:26), made me question the overall clarity in contemporary definitions about reflection and the rationale for its assessment. For reflection, after Rodgers (2002), has lost its meaning, 'becoming everything to everybody' (2002:843), and thus, the need for clarity is now more

urgent than ever so that it may be ‘taught, learned, assessed, discussed, and researched, and evolve in both meaning and usefulness’ (2002:844).

For example, some teacher education research utilizes the taxonomy of reflective thought found in Pultorak (1993) and Van Manen (1977) or Collier’s (1999) three levels of reflection, in which the first category is descriptive, the second makes references to context, and the third takes an ‘objective’ perspective (Fendler, 2003:20). Other studies have ranked student responses using a scale or taxonomy such as the three levels of reflection defined by Mezirow (1981), Biggs’ SOLO Taxonomy (1982) or Garrison’s four Cognitive Processing Categories (2004) (Maurino, 2006:3).

Bloom’s cognitive taxonomy of educational objectives (1956), on the other hand, with its top three categories ‘analysis’, ‘synthesis’, and ‘evaluation’ is often equated with ‘critical thinking’. Some educators though have been dissatisfied with Bloom’s taxonomy because it does not offer much useful, practical guidance for instruction (Ennis, 1981; Furst, 1981; Nelson, 1981; Paul, 1985; Seddon, 1978 in Kennedy *et al.*, 1991:13).

Amidst this confusing and often contradictory proliferation of literature on definitions about the multifaceted concept of reflection and its seemingly varied interpretations about how it may be assessed, I decided to ‘trust’ the data I had collected and adopt an inductive approach to the research analysis process, instead of relying on preconceived coding patterns and taxonomies, whilst at the same time delving further into the literature, in an effort to address all those emerging queries and concerns of mine. After all, I thought, the literature refers to ‘analysis’ as ‘a challenging and exciting stage of the qualitative research process that requires a mix of creativity and systematic searching, a blend of inspiration and diligent approach’ (Richie and Lewis, 2003:199) and, for sure, I had already embarked on a journey that was to prove the literature right.

5.4 Towards Scaffolding the Indicators for Determining Evidence of Reflection

In the preceding narrative, I explained that my anxieties and concerns mainly evolved around two pertinent issues, that is, a) the need for a clarified definition of the notion ‘reflection’, and b) the plurality of meanings and interpretations about how reflection may be assessed.

My first thought was to put aside for a moment all these ‘muddled’ definitions and interpretations, and trail back the whole of the affair at its very conception stage and examine its origin, and that, I felt, involved looking back at the etymology of the word ‘reflection’. I think at the time I was possibly looking for an ‘inspiration’ or a useful clue that would help me overcome the proliferation of existing multifaceted definitions and interpretations, and assist me in conceptualizing a more unified framework about what ‘reflection’ is and how it may be assessed, or even guide me towards developing an authentic (!) one.

In seeking guidance in the literature, I discovered that the word ‘reflection’ originates from the Latin verb ‘reflectere’ which means bend or turn (‘flectere’) backwards or back (‘re’) and is used broadly (French ‘reflexion’, German ‘Reflektion’, Swedish ‘reflektion’) with a common meaning that doesn’t seem to have changed much over time (Bengtsson, 1995:26).

In physics, the term is used in optics to describe the reflection of light against a smooth surface, such as a mirror and, where humans are the object being reflected, this means a physical self-mirroring; in psychology, aspects of consciousness of self have been tested by means of mirrors, not only on animals such as cats or chimpanzees but human infants have been placed in front of mirrors to find out if and when they recognize that the reflected image is of themselves; in literal mirroring, it is assumed that the viewer sees an exact image of that which is being reflected (Brown and McCartney, 1999:24).

In education, on the other hand, the seminal work of Dewey (1910/1977) and Van Manen (1977, 1991) appeared to have strongly influenced the development of a variety of understandings and perspectives on reflection (Calderhead, 1987; Zeichner, 1987; Grimmet and Erickson, 1988; Zeichner and Tabachnick, 1991; Russell and Munby, 1992; Valli, 1992; Korthagen, 2001 in Ottesen, 2007:31-32). Nearly 100 years ago, John Dewey articulated his concept of ‘how we think’ in a book by the same name (*How We Think*, 1910/1933); he identified several modes of thought, including belief, imagination, and stream of consciousness, but the mode he was more interested in was reflection (Rodgers, 2002:844). Thus, attempting to comprehend the meaning of the concept ‘reflection’ by examining the writings of the pioneer thinker in this subject matter was my next priority.

Dewey’s thinking, on which I have elaborated in some length in Chapter 2, and specifically his declarations on the purpose of education, proved to be definitive in the

way my thoughts evolved in conceptualizing the theoretical framework for the notion of ‘reflection’ employed in this study and the subsequent development of the Scheme for Determining Evidence of Reflection. Two other schools of thought that affected substantially my thinking were those of *Confucian Humanism* and *Cartesian Rationality*, with the research outputs presented by Korthagen and Wubbel (1995) playing equally a crucial role in triggering my intellectual impetus for a more clarified notion of reflection, which could be usefully discussed and assessed.

It was probably at that point that I also thought I should attempt to record all these thoughts and reflections by depicting them in a colourful map, a copy of which I have enclosed at the end of this thesis, in Volume II. However, I think it might be useful for the reader at this point if I was also to give an overview of the content of this ‘mind map’, since it was not practical nor feasible to integrate a copy in this chapter but only as an attachment at the end of this thesis. Indeed, the section that follows represents the ‘articulated’ version of the mind map I have enclosed at the end of this thesis.

5.4.1 A Mind Map: The Theoretical Background behind the Scheme of Indicators for Determining Evidence of Reflection

The preceding discussion illustrated the key arguments and authors who influenced my thinking when seeking to develop a more transparent conceptual framework for the notion of reflection, and how it may be reliably assessed in terms of reporting on the reflective outcomes of a computer mediated or face to face communication discourse. But exactly what were the developmental stages of my thinking?

I have already reported that, according to Dewey (1933/1998), the two operatives of reflection are *sequence* and *con-sequence*, which means that ‘reflective thought’ is a chain of logical ordering of an idea or event, in which the units of thought are cumulatively linked together; each phase in the chain predicts the next phase (Amobi, 2006:29). However, Dewey’s articulation embodied specific *key* words which triggered my thinking into raising certain alarming concerns, with the *key* words being ‘sequence’, ‘chain of logical ordering’, ‘chain’ and ‘cumulative linked’.

These *key* words then became the impetus for raising a series of questions. Could I argue that reflection is a versatile phenomenon which consists of a diverse

range of aspects or components that reinforce each other? If yes, would it still be appropriate to employ phraseology, such as, ‘assessing reflection’ or ‘assessment tools/taxonomies’ in our thinking and in our discussions? For how would it be possible to ‘assess’ cumulatively linked together units of thoughts, especially when taking into account that each phase in the chain predicts the next one? And then, exactly what do we mean by ‘assessing reflection’? Are we implying that there is a hierarchical structure which leads to a ‘better’, a more ‘valid’ reflection or even a more ‘superior’ learning?

I must confess that initially I, was also looking to employ or develop by a taxonomy or otherwise an assessment tool that would reliably ‘measure’ or ‘assess’ reflection, and that it was not until after an extensive inner struggle that I concluded I should be very cautious when deciding on the wording of the scheme that was developed inductively in this study, and which was eventually entitled as the ‘Scheme of Indicators for Determining Evidence of Reflection’.

In the preceding discussion, I have also made reference to Korthagen and Wubbel (1995), who have provided empirical data that support the views of those who challenge reflection as being an entirely rational, cognitive process, in which emotions and attitudes play a subsidiary role (Day, 1995:5). The findings of the Korthagen and Wubbel (1995) study directed me back to Dewey’s writings about reflection. Indeed, Dewey (1933) had clearly demonstrated his awareness of what educators call the ‘affective dimension’ of learning, by arguing that human beings are not normally divided into two parts, the one emotional, the other coldly intellectual – the one matter of fact, the other imaginative. The split does indeed often get established, but that is always because of false methods of education, as natively and normally the personality works as a whole (1933:278). In considering Dewey’s arguments, I felt that, although the conceptualization of reflection as a rational process, and as projected in contemporary assessment tools and taxonomies, is important in promoting the professional development of teachers, it describes only one way in which the human mind can process information and direct decision-making (Korthagen, 1993:317) and, thus, it portrays an incomplete representation of reflection. The affective dimension, I felt, should also be considered in deliberations about reflection and its ‘assessment’.

Last, but not least, I was heavily influenced by Dewey’s definition of education. Dewey (1916/1944) defines education as a verb, rather than a noun, arguing that

education is ‘that reconstruction or reorganization of experience which adds to the meaning of experience, and which increases [one’s] ability to direct the course of subsequent experience’ (1944:74). Experiences alone, however, even educative ones, are not enough, Dewey asserts, as what is critical is the ability to perceive and then weave meaning among the threads of experience; ‘experience is not primarily cognitive’ (Dewey, 1916/1944), that is, experience isn’t the same as thought, rather it is the meaning one perceives in and then constructs from an experience that gives that experience value (Rodgers, 2006:848). An experience exists in time and therefore is linked to the past and the future. The function of reflection then is to make meaning, to formulate the ‘relationships and continuities’ among the elements of an experience, between that experience and other experiences, between that experience and the knowledge that one carries, and between that knowledge and the knowledge produced by thinkers other than oneself (ibid.).

To this end, Dewey (1938) highlights the significance of how the ‘meaning making’ process impacts on human life in helping us make sense of and attribute value to the events of our lives; in fact, he ascribes the act of meaning making to the soul, contemplating:

What avail is it to win prescribed amounts of information about geography and history, to win the ability to read and write, if in the process the individual loses his own soul: losses his appreciation of things worth-while, of the values to which these things are relative; if he loses desire to apply what he has learned and, above all, loses the ability to extract meaning from his future experiences as they occur? (1938:49).

In other words, and to portray my understanding of Dewey’s thinking in a summative mode of representation – using arrows to indicate the sequencing of the argument – Dewey had connected education with that reconstruction or reorganization of experience which adds to the meaning of experience and which increases [one’s] ability to direct the course of subsequent experience → however, what is critical is the ability to perceive and then weave meaning among the threads of experience → an experience exists in time and therefore is linked to the past and the future → the function of reflection then is to make meaning among the elements of an experience → this ‘meaning making’ impacts on human life in helping us make sense of and attribute value to the events of our lives → the purpose of education ‘is the

intellectual, moral, and emotional growth of the individual and, consequently, the evolution of a democratic society' (1916/1944:99).

This trail of Dewey's thinking brought into mind the epistemological foundations of *Cartesian Rationality*. Reflection, in its common Cartesian meaning, rests on the assumption that self-awareness can generate valid knowledge; in a Cartesian scheme of self-awareness, the self plays both roles of subject-who-reflects and object-who-is-reflected-upon simultaneously, and it places value on all reflection simply because it is a demonstration of self-awareness, that is, all reflection is desirable because it indicates a consciousness of self (Fendler, 2003:17).

Finally, and in addition to the above, I also made a mental correlation with the traditions of *Confucian Humanism*, which too places emphasis in the inner experience, with *self-realization* being prescribed as the ultimate goal of every learner. This school of thought calls attention to the process by which adults seek inner critical reflection to foster development, characterized by a metaphor as 'inner digging and drilling' (like that of a well) that necessarily leads to an awareness of the self not as a mental construct, but as an experienced reality; the process in turn leads to the possibility of creating new knowledge via critical (or 'silent') reflection as articulated by Confucius:

According to Confucius, silent reflection is not a cognitive process isolated from the rest of the human being, rather it involves the entire "body and mind" (as cited in Tu, 1979, p. 103). Derived from the meanings of Confucius' *Four Books*, the original meaning of silent reflection refers to a deep examination of one's being rather than a thorough investigation of some external object, process or philosophy (as cited in Zhu, 1992, p. 20). Of course, this mental activity involves more than the comprehension of something beyond the Self, it requires a continuous process of internalization, that is, reflection, questioning, and seeking to integrate into harmony a resulting change of the understanding of the Self (Wang and King, 2006).

My thoughts then were: if this silent mode of reflection involves 'both the body and the mind' (Confucius), would I also be able to argue that silent reflection may involve both affective and rational articulations, whilst one in the process of thinking outside the boundaries of a triggering event and making reference to self, in a 'meaning-making process' to make sense of and attribute value to the events of one's life (Dewey)?

The table that follows is a visual summary of the key arguments which influenced my way of thinking, a thinking which was to differ from contemporary definitions about reflection and its assessment on certain fundamental matters, in my opinion, leading to the framework which emerged inductively in this study and on which I will elaborate in the discussion that follows.

1. Dewey (1933) has argued that ‘reflection involves not simply a sequence of ideas, but a con-sequence, a consecutive ordering in such a way that each determines the next as its proper outcome, while each outcome in turn leans back on, or refers to, its predecessors (1933:4).
2. Human beings are not normally divided into two parts, the one emotional, the other coldly intellectual – the one matter of fact, the other imaginative. The split does indeed often get established, but that is always because of false methods of education. Natively and normally the personality works as a whole. There is no integration of character and mind unless there is fusion of the intellectual and the emotional, of meaning and value, of fact and imaginative running beyond fact into the realm of desired possibilities (Dewey, 1933:278).
3. Korthagen and Wubbel (1995) have provided empirical data that support the views of those who challenge reflection as being an entirely rational, cognitive process, in which emotions and attitudes play a subsidiary role (Day, 1995:5).
4. Dewey (1916/1944) defines education as a verb, rather than a noun, arguing that education is ‘that reconstruction or reorganization of experience which adds to the meaning of experience, and which increases [one’s] ability to direct the course of subsequent experience’ (1944:74).
5. Reflection, in its common Cartesian meaning, rests on the assumption that self-awareness can generate valid knowledge; in a Cartesian scheme of self-awareness, the self plays both roles of subject-who-reflects and object-who-is-reflected-upon simultaneously, and it places value on all reflection simply because it is a demonstration of self-awareness, that is, all reflection is desirable because it indicates a consciousness of self (Fendler, 2003:17).
6. For Dewey, the purpose of education was the intellectual, moral, and emotional growth of the individual and, consequently, the evolution of a democratic society (1916/1944:99).
7. According to Confucius, silent reflection is not a cognitive process isolated from the rest of the human being, rather it involves the entire “body and mind” (as cited in Tu, 1979, p. 103). Derived from the meanings of Confucius’ *Four Books*, the original meaning of silent reflection refers to a deep examination of one’s being rather than a thorough investigation of some

external object, process or philosophy (as cited in Zhu, 1992, p. 20); of course, this mental activity involves more than the comprehension of something beyond the Self, it requires a continuous process of internalization, that is, reflection, questioning, and seeking to integrate into harmony a resulting change of the understanding of the Self (Wang and King, 2006).

Table 5.4 Influential Thinkers and Key Arguments that Triggered my Intellectual Impetus into Developing the Scheme of Indicators for Determining Evidence of Reflection

5.5 The Scheme of Indicators for Recognising Evidence of Reflection

The preceding discussion exemplified my thoughts and concerns when considering contemporary research outputs portrayed in the literature in terms of commonalities and differences, through cross-examination of the research data and by drawing from pertinent philosophical schools of thought from Western and Eastern traditions. However, it must be said that these key concerns also reflect the fundamental points that differentiate the projected ‘Scheme of Indicators for Recognizing Evidence of Reflection’ from contemporary definitions and assessment taxonomies about reflection. These key concerns, and the pertinent arguments which influenced my thinking (in brackets), are usefully summarised below:

- What is reflection and what is its scope? (Dewey’s definition of education and the meaning making function of reflection amongst experiences; plus, the epistemological foundations of the Cartesian Rationality; plus, the Confucian Humanism values).
- Should we adhere to a conceptualization of reflection as a rational process only? (Dewey argues human beings are not normally divided into two parts, the one emotional, the other coldly intellectual – the one matter of fact, the other imaginative; plus, Korthagen and Wubbel’s research outputs; plus, according to Confucius, silent reflection is not a cognitive process isolated from the rest of the human being, rather it involves the entire ‘body and mind’).
- What do we mean by ‘taxonomy for assessing reflection’? Can reflection be assessed? (Dewey’s articulations that the two operatives of reflection are sequence and con-sequence; plus, according to the Cartesian Rationality all reflection is desirable because it indicates a consciousness of self).

Lindey (1952) says it well when he argues that ‘there is no such thing as absolute, quintessential originality’ (1952:14). For originality, he says following Voltaire (1694-1778), is nothing but judicious imitation; the most original writers borrowed one from another. In this context, my initial concerns and anxieties regarding reflection and its assessment was elevated to a transformed understanding of the concept and towards scaffolding the projected scheme for recognising evidence of reflection, with the latter being uniquely positioned in the field of contemporary deliberations, in that I have drawn connections and extensions of pertinent theoretical frameworks and philosophical schools of thought from Western and Eastern traditions, to expose an amalgamated portrait of reflection that embodies different traditions and multicultural perspectives, drawing attention to the ‘self-mirroring’ act of one’s inner experience and awareness of self as an experienced reality and, thus, shifting the focus of contemporary deliberations beyond one’s thorough and intellectual examination of some external object or process.

Existing philosophical and theoretical frameworks then have been the lens through which the framework for determining evidence of reflection was developed and the empirical data were interpreted in this study. The coding scheme of indicators emerged by employing a meticulous, cross examination method, utilizing more than two approaches to the investigation process. It was developed inductively by a) analyzing the empirical data, whilst employing the method of constant comparison (Glaser and Strauss, 1967) and the step model of inductive category (Mayring, 2000), b) reviewing existing pertinent guiding theories and hypotheses, whilst bearing in mind Glaser’s (1998) advice guarding against preconceived received codes, following diagrams, and so forth (1998:94), and c) examining seminal philosophical schools of thoughts from Western and Eastern traditions.

In sum, the scheme projects a concept of reflection as a meaning – making process (Dewey, 1916/1944) and a ‘discursive tool mediating learning’ (Ottesen, 2007:32). A view of reflection based on socio-cultural perspectives on human activity is advanced, recognizing reflection as action embedded in societal activities (ibid.) and embracing the whole gamut of one’s life experiences, as it progresses gradually in terms of awakening, cultivation, and transformation (Connelly and Clandinin 1995:82).

Through this notion of ‘holistic reflexivity’ projected in this thesis, the whole of the person is engaged, and the intellectual, moral, and emotional growth of the

individual – as Dewey (1916/1944) conceptualizes the purpose of education – is observed, and eventually ‘self control’ and ‘integration with nature’ may be accomplished (Confucius).

In other words, I see reflection as a life process that spirals through a number of in-built stages; these stages may serve different purposes and vary depending on the focus or the context in which they appear to surface. Schon’s concept of reflection focuses on present action, whilst Dewey’s work on future action. In a sense, I pursue an alternative epistemology of professional development practice that goes beyond concentrating on a thorough investigation of ‘reflection in action’ and ‘technical rationality’. To this end, I would like to draw from Day (1999) who, in arguing that professional development takes many forms, urges us to resist the pressures to focus solely on the technical, surface and performance features of teaching and to learn to look at values, and the ethical and human aspects of being a teacher (1999:39).

It would be of significance to draw to the reader’s attention though that, following Dewey (1933) – and as Ottesen (2007) argues as well – the ‘Depths of Reflexio Act’ portrayed in the scheme are not to be interpreted as ‘levels’ in a hierarchic structure, leading to a ‘more true reflection’, or necessarily a ‘better learning’; rather, they must be seen as empirically developed constructs, demonstrating how an object’s expansion is carried out in dialogue contingent on the purpose directing the action:

[First], how an object of reflection is expanded is neither intrinsic to the object nor the experience. Secondly, any one reflective event may (and often does) comprise elements of all [reflexive aspects and/or depth]. What it becomes is contingent on contextual influences as well as the agency of the participants and the work of dialogue itself (2007:40).

In other words, the projected ‘Scheme of Indicators for Determining Evidence of Reflection’ depicts a process that spirals through emerging ‘reflective dividends’ or ‘building blocks’ that lead to ‘Core/Silent Reflection’, which is the ultimate depth and also evidence of a lifelong journey to one’s personal and professional development. The table that follows presents and exemplifies the scheme and its indicators in more detail by illustrating segments of data from both the on-line and face to face communication:

SCHEME OF INDICATORS FOR DETERMINING EVIDENCE OF REFLECTION		
ASPECT/ MODE	DEPTH OF REFLEXIO ACT	DESCRIPTION [any or all of the below]
Un- reflective/ Other [UN-R]		<p>For example: realms of thought, passive agreement/acceptance, information processing, task-related articulations, social interaction</p> <p>FTF Example: That's what people are doing on Learn Direct-</p> <p>ONF Example: Is there anybody out there 🤔 It's a bit lonely in here 😞 Will someone talk with me 😞</p>
	Reflective Thinking [RT]	<p>For example: bending back on an object or process, experience, philosophy /belief, description without an explanation or an evaluative judgment, (rhetoric) questions, seeking to understand in an effort to explain/make a judgment</p> <p>FTF Example: I always refer to books. I don't know what it is...</p> <p>ONF Example: I wonder how many teachers have had access to a named mentor in the workplace and how valuable the experience was? What do others think are the pros and cons involved, (a) for the mentor and (b) for the mentee?</p>
	Reflective Interpretation [RI]	Judgement/Explanation/Justification (reference to how+what+why)
Reflexio Act [R]	a) Non- rational Interpretation [RI-AR]	<p>For example: unreasoned evaluative judgements, an explanation or an evaluative judgment with an explanation based on gestalts, patterns, habitual action, rigid opinion, personal preference, emotions, values</p> <p>FTF Example: Personally that's the route I'll take, the route of informal learning when I finish my degree. This is something I wanna seriously look at in because...I don't agree with the recommended way that post-16 education is taught a lot of the time...er..not all of the time, but a lot of the time.</p> <p>ONF Example:[No evidence in the on-forum communication]</p>

Reflexio Act [R]	b) Rational Interpretation [RI-R]	<p>For example: analytic explanation, argumentation, extensive analysis of the issue with reference to e.g. causal relationships, the socio-economic and political context, decomposing, reframing, reconstructing</p> <p>FTF Example: I think there are a range of factors...I think a strong motivation...a lot of the adults that I've taught have been financially disadvantaged...and to improve their employment prospects er...if they learn new skills, if they master these skills then it will hopefully open up doors to more lucrative employment for them er...sometimes not necessarily more lucrative...sometimes more enjoyable job...er..</p> <p>ONF Example: Yes, culture comes into play here.. If a young adult learner does not have the necessary life, social and communication skills thus lacking self belief and self esteem then they could well struggle to communicate the complexity of their thoughts as a result of lacking the confidence to do so in a professional and/or academic environment. . This can lead to negative learning experiences and the potential for the student to drop out.</p> <p>Even dealing with the paper work and academic speak that many are confronted with on their return to education can be extremely daunting experience.</p> <p>Of course, much of the above also applies to older adult learners too but these, in some instances, may well possess the confidence learnt through experience to cope.</p> <p>Also, older learners may be more motivated to be in the classroom environment more than younger learners. This might be because the older learner wishes to treat the learning experience as much as a social as well as professional or educational experience.</p>
	Core/Silent Reflection [CR]	<p>One thinks outside the boundaries of an episode and makes contact with deeper levels inside (deep examination of one's being rather than just examination of external episode). The focus is on the inner experience and evidence may be all or some of the following: examining,tasting,comprehending;understanding,confirming,verifying; overcoming inner conflict; probing more deeply into personal knowledge/experience; beliefs become uncertain/revised decisions; self criticism (not just intellectual argumentation); an experience finally makes sense and can be relied on future action; possibility of creating new knowledge. The ultimate result is self-actualization /realization.</p> <p>FTF Example: I think a lot of it have to do with er..age as well, the age of the individual...because obviously..should say that the older you are, the more confident you usually become. When I was 16 years old, I walked into a room with one person..I mean I would blush... but the way to think it is...er what I'm just saying is confidence comes with age as well sometimes you know, and obviously the outside of your comfort zone...and that takes time to get used to different environments, different individuals...so..I think a lot of this is connected and has to be taken on further I believe...</p> <p>ONF Example:[No evidence in the on-forum communication]</p>

Table 5.5 Overview of the Scheme of Indicators for Determining Evidence of Reflection (with examples)

The preceding table provides an overview of the Scheme of Indicators, alongside illustrations of segments of data for each one of the indicators separately. However, and before I proceed with exemplifying how the indicators were applied in the research analysis process, I think it is imperative that I illuminate further how the indicators portrayed in the scheme are distinguished one from another by highlighting their defining characteristics and their focus in terms of the context and the boundaries within which they operate.

First of all, the Scheme of Indicators portrays two significant themes: the aspect/mode of the episode, i.e. Un-reflective/Other [UN-R] and Reflexio Act [R], and the depth of the Reflexio Act [R]. The first theme draws a distinction between the units of analysis that portray, for example, task related information, social interaction or realms of thought versus those units that demonstrate evidence of a Reflexio Act, and one could reasonably argue that this is by far a challenging distinction for one to apprehend. The second theme though, i.e. that of the Depth of the Reflexio Act, is one which I feel it would be of significance to explore in more depth.

In the preceding table it was shown that the depth of a Reflexio Act may be identified largely in the name of three indicators, that is, a) Reflective Thinking [RT], b) Reflective Interpretation [RI] (which embraces both Non-rational [RI-AR] and Rational Interpretation [RI-R]), and c) Core/Silent Reflection [CR]. But what exactly do the words ‘thinking’ in ‘Reflective Thinking’ and ‘interpretation’ in ‘Reflective Interpretation’ entail, and how may they be distinguished one from the other and from ‘Core/Silent reflection’? For is it possible to argue, for example, that ‘thinking’ can be at all times divided from some kind of ‘interpretation’ or some representative mode of explanation? And then, what is one’s understanding of ‘interpretation’ and its representation?

My thoughts were that an ‘interpretation’ demonstrates one’s understanding about something, and this understanding may be identified (in its articulated mode) in the representation of a) an explanation and b) a judgment, as one might articulate a judgment without an explanation and the other way around, i.e. an explanation without an explicit judgment being made. If ‘thinking’ then may entail elements of an explanation or a judgment, how may the ‘Reflective Thinking’ and ‘Reflective Interpretation’ indicators be distinguished one from another? Is it possible for both indicators to bear representations of an explanation which may, for example, entail elements of a cause and effect relationship? If we think of causality in an absolute,

categorical way, a plausible thought is that such possibility might not be feasible. What if we think of causality in a graded way though?

But first of all please allow me to exemplify these thoughts by considering the following two coded segments of data:

MESSAGE 7 ONF [RT]

I wonder how many teachers have had access to a named mentor in the workplace and how valuable the experience was? What do others think are the pros and cons involved, (a) for the mentor and (b) for the mentee?

MESSAGE 6 ONF [RT]

So if we are all mentoring at some stage in our working lives, I wonder how this vital sorce (sic) of teacher support can be better recognised and developed?

The demands for additional training and qualifications within FE and ACL work are putting tremendous pressure on already well qualified staff. whilst these developments are vital to up-skills the teaching workforce I can see senior part-time staff leaving in their droves over the next 5yrs or so. The Service will be poorer for this mass departure.

I wonder if developing the mentoring system to overcome the issues might help.

The Scheme of Indicators for Determining Evidence of Reflection defines ‘Reflective Thinking’ as one’s bending back on an object, process, experience, philosophy, belief, articulating a description without an explanation or an evaluative judgment, posing (rhetoric) questions seeking to understand or in an effort to explain/make a judgment. In considering the first segment of data from the on-line forum (message 7), one may reasonably argue that the participant reflects on the process of having a named mentor in the workplace and she poses a question in an effort to attribute a value to the experience, or achieve a better understanding of this process and/or make an evaluative judgment. Hence, this unit was coded as ‘Reflective Thinking’.

In examining the second unit of analysis (message 6) though, one might become more sceptical. But exactly what are the challenges this unit of analysis might present one with? This contribution was posted following a number of other participants’ responses in relation to message 7. In this message one may initially identify largely

three ‘layers of thought’, with the second and third ones being highlighted in blue and red font colours. In the first ‘layer of thought’, the participant is posing a question, i.e. ‘so if we are all mentoring at some stage in our working lives, I wonder how this vital source of teacher support can be better recognised and developed?’, and this ‘layer of thought’ may reasonably qualify for the ‘Reflective Thinking’ indicator, as the participant is ‘seeking to understand or give an explanation/make a judgment’.

In examining the second ‘layer of thought’ (highlighted in blue) though, the participant appears to offer a description of the context in relation to training and qualifications within Further Education (FE) and Adult and Community Learning (ACL), raising a number of issues and making explanations and/or judgments based on an opinion or belief and by making reference to causal relationships, the latter being reinforced by the third ‘layer of thought’ (highlighted in red), where the participant is wondering ‘if developing the mentoring system might help to overcome these issues’.

In this context, for example, one’s coding options could appear to be a) to code these three ‘layers of thought’ separately and under the ‘Reflective Thinking’ and ‘Reflective Interpretation’ (non-rational or rational interpretation) indicators, and b) to code the whole of this piece of data. But on what grounds can the second option be a plausible one, i.e. how can (or should) the whole of this piece of data be coded as a single reflective unit and, should that be the case, what would be the indicator it would qualify for?

I have explained previously, and when I discussed the methods and procedures of data analysis (Chapter 4), that the unit of analysis in this study is the ‘reflective unit’, defined as one’s whole idea or thought about a topic or an event. The specific segment of data (message 6) was analysed as a single reflective unit on the grounds that the second and third ‘layers of thought’ (highlighted in blue and red font colour) form the contextual background underpinning the first ‘layer of thought’, i.e. ‘so if we are all mentoring at some stage in our working lives, I wonder how this vital source of teacher support can be better recognised and developed?’. In other words, a coding decision was made on the grounds that the participant’s reflective contribution foregrounds the primary ‘layer of thought’, that is, how can the mentoring system at the workplace can be better recognised and developed, with the subsequent ‘layers of thought’ playing a subsidiary role. Hence, this reflective unit was coded as ‘Reflective Thinking’.

The decision making process underlying this coding decision fits very well within the theoretical framework underpinning the development of the Scheme of Indicators, and particularly in relation to the seminal principle that ‘reflection involves not simply a sequence of ideas, but a consequence, a consecutive ordering in such a way that each determines the next as its proper outcome, while each outcome in turn leans back on, or refers to, its predecessors (Dewey, 1933:4).

Nonetheless, one might still be left wondering about how the cause-effect explanation embedded in this reflective unit (coded as ‘Reflective Thinking’) can be justified, especially when considering that causal explanations fall in the boundaries of the ‘Reflective Interpretation’ indicators, thus, posing possible challenges when one attempts to distinguish these indicators one from another.

In *Physics II 3* and *Metaphysics V 2* Aristotle held that there were four kinds of causes, which Falcon (2008) articulates as the general account of the four causes, with ‘general’ being coined in the sense that it applies to everything that requires an explanation, including artistic production and human action. The translation ‘cause’ for Aristotle’s ‘Aitiae’ or ‘modes of explanation’ (Kronlid, 2003:1) is in some respects misleading, but it is not disastrous, as the explanatory categories which Aristotle isolates are clearly designed to enable us to give causal accounts of things; proper knowledge, or understanding (*epistēmē*), involves knowing the fundamental structure of things and to this end, Aristotle distinguishes four general classes of explanation:

(i) in one way the cause is said to be the existing thing out of which something comes to be, e.g. the bronze of the statue, or the silver of the phial, and their genera. (ii) Another is the form or the template (*paradeigma*): this is the formula (*logos*) of the what-it-is-to-be, and its genera. . . . (iii) Further more, that from which the primary origin (*archē*) of change and rest, e.g. the responsible deliberator, or the father of the child, and in general the agent of the thing produced, and the changer of the thing changed. (iv) Moreover, there is the end (*telos*). This is that for the sake of which, e.g. health of walking; for why does he walk? In order, we say, to be healthy, and in so saying we think that we have given the cause (Aristotle, *Physics* 2. 3. 194b23–35) (Hankinson, 1998:157-158).

The *material cause* then describes the material out of which something is composed; the *formal cause* is its form, i.e. the arrangement of that matter, and it tells us what a thing is, that any thing is determined by the definition, form, pattern, essence, whole, synthesis or archetype; the *efficient cause* is ‘the primary source’, or

that from which the change or the ending of the change first starts, and it identifies ‘what makes of what is made and what causes change of what is changed’ and represents the current understanding of causality as the relation of cause and effect, which covers the modern definitions of ‘cause’ as either the agent or agency or particular events or states of affairs; the *final cause* or *telos* is its purpose, or that for the sake of which a thing exists or is done, including both purposeful and instrumental actions and activities, and this also covers modern ideas of mental causation involving such psychological causes as volition, need, motivation or motives, rational, irrational, ethical, and all that gives purpose to behaviour (Falcon, 2008:1).

Now let us return to the ‘Reflective Thinking’ indicator and the reflective unit under discussion (message 6). According to the Scheme of Indicators, ‘Reflective Thinking’ reflects one’s ‘bending back’ on an object or a process. This bending back may involve an articulated mere description or a more sophisticated one, which may involve an explanation in the context of the object of the ‘bending back’. In explaining this ‘bending back’, one might offer an explanation based on a cause-effect relationship. However, this ‘cause’ embedded in one’s explanation may only be a ‘formal cause’, where one is explaining the arrangement of or the particulars of that object (the idea existing in the first place as exemplar in the mind of the sculptor), as the whole is the cause of its parts (the intrinsic, determining cause embodied in the matter), and/or an ‘efficient cause’, that is, the ‘primary source’ which identifies what makes of what is made and what causes change of what is changed (that which sets the object in motion).

Pustejovsky (1995) borrows the four Aristotelian modes of explanation in order to do lexical semantics, renaming them into ‘qualia structure’ (Pustejovsky, 1995; Kronlid, 2003) and, in fact, I have attempted to follow a similar course of action but in a different context. Effectively then, I argue for a graded view of causality, inspired by Aristotle’s doctrine about the four causes, and which I applied in the reflective unit under discussion (message 6) and as illustrated below, with my comments in brackets and underlined:

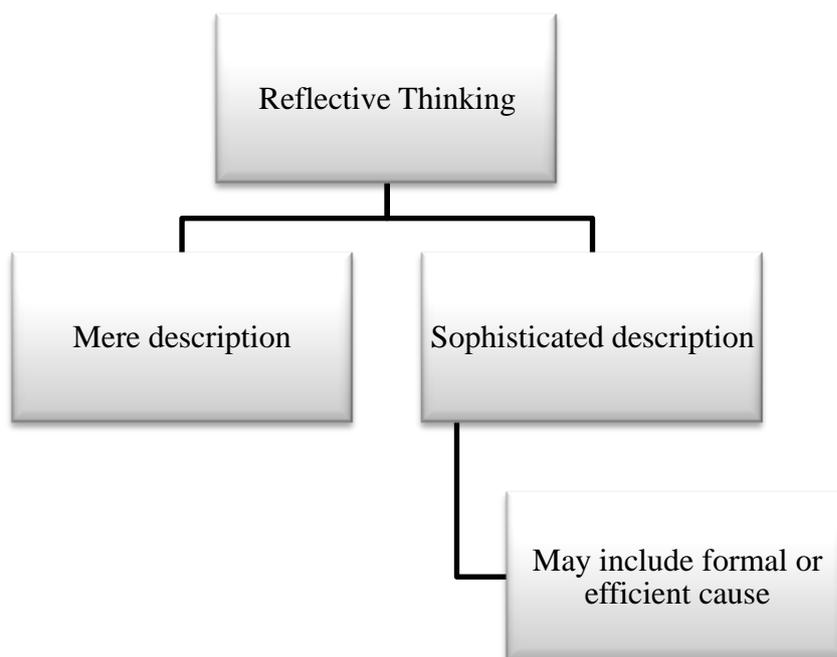
MESSAGE 6 ONF [RT]

So if we are all mentoring at some stage in our working lives, I wonder how this vital source of teacher support can be better recognised and developed? [the participant is bending back on an object/process]

The demands for additional training and qualifications within FE and ACL work are putting tremendous pressure on already well qualified staff. whilst these developments are vital to up-skills the teaching workforce I can see senior part-time staff leaving in their droves over the next 5yrs or so. The Service will be poorer for this mass departure. [the idea existing in the first place as exemplar in the mind of the sculptor, the intrinsic, determining cause, embodied in the matter – this is an explanation as for the ‘why’ (in the participant’s mind, and regardless of whether it could be clustered as rational or non-rational) mentoring is a vital source of teacher support that needs to be recognised and developed]

I wonder if developing the mentoring system to overcome the issues might help. [this is the link that directs now the reader to the ‘principal thought/enquiry’ above, i.e. So if we are all mentoring at some stage in our working lives, I wonder how this vital source of teacher support can be better recognised and developed?]

The following representation illustrates the preceding discussion about the Reflective Thinking indicator and its definitive characteristics in a snapshot:



However, this reflective unit (message 6) does not present evidence of a ‘telos’ or a ‘final cause’, in the sense that there is no evidence of a final explanation/evaluative judgement being made, as it would have been in the case of the participant arguing, for example, ‘this vital source of teacher support can be better

recognised and developed by doing x, y, z because x, y, z {a rational or a non-rational explanation}' or 'I believe this vital source of teacher support needs to be better recognised or developed because x, y, z {a rational or a non-rational explanation}'. The 'telos' or the 'final cause' then represents the boundaries that distinguish the 'Reflective Thinking' from the 'Reflective Interpretation' (rational or non-rational) indicator, with the 'final cause' being its purpose, or that for the sake of which a thing exists or is done, including both purposeful and instrumental actions and activities, covering modern ideas of mental causation involving such psychological causes as volition, need, motivation or motives, rational, irrational, ethical, and all that gives purpose to behaviour (Falcon, 2008:1).

In other words, for a reflective unit to qualify as 'Reflective Interpretation' (rational or non-rational), it would need to demonstrate evidence of an explanation with a 'final cause' (e.g. 'I like books because they look nice') or a judgment (e.g. 'This needs to change'). Now the 'final cause' maybe be based on a 'Non-rational Interpretation' [RI-AR] (e.g. practical wisdom which gives commands about what should be done or not, a value) or a 'Rational Interpretation' [RI-R] (e.g. decomposing, reframing, reconstructing the issue). In addition, a judgment maybe presented as absolute, with no explanation/justification for the 'why', or alongside a non-rational interpretation or following a rational interpretation. Surely, a rational interpretation may have embedded elements of non-rational interpretation in the process of one unfolding one's explanation, and an explanation may entail a judgment and/or elements of reflective thinking, and as highlighted (with blue font) and with my comments in bold font and underlined in the coded piece of data that follows:

MESSAGE 1 ONF[RI-R]

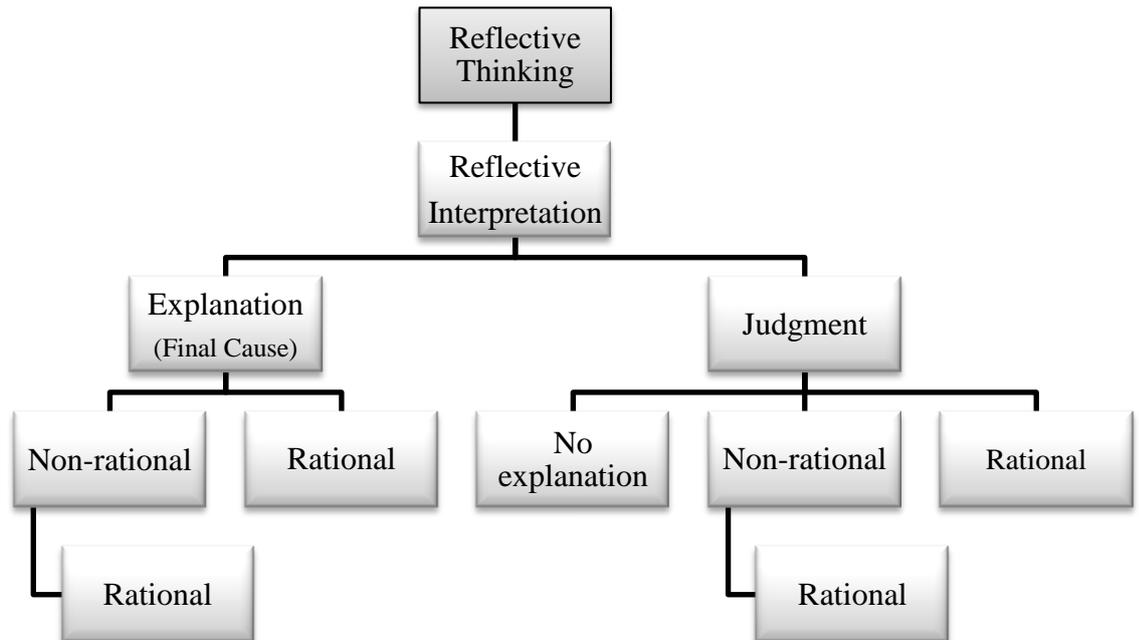
Last year I had a very diverse timetable and found myself teaching young adults, (16-19) and older return to learning mature adults, (45-50) The common factors found on entry were that they were hoping to gain qualifications for nursery nursing and all expressed a fear of reading out from a book to young children in the nursery.

[RT]

Teaching basic skills this is problem faced by many. Generally I felt that some of the younger students had behaviour problems and somehow lacked fundamental communication skills and this impaired to some degree their attitude to taking responsibility for their learning. It is difficult not to compare the two ages of learners but in this instance the older ones appeared to have the necessary social skills but because of prior negative learning experiences lacked confidence and self belief even though I believed they could succeed. The key here was that strategies have to be devised to enable students to take a responsible attitude to their learning which is

diverse and ensures it is an enjoyable experience, (quite a challenge!). **[RI-R]** What are other members experiences of working with various age groups and how to improve motivation?

The diagram that follows provides an illustrative overview of my articulations:



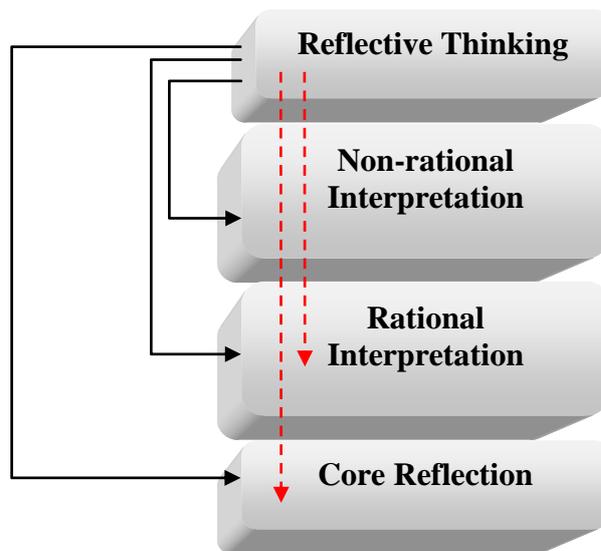
Crisp (2000) argues that judgment is concerned not with what is eternal and unchanging, nor with what comes into being, but with what someone might puzzle and deliberate about, and for this reason judgment is concerned with the same things as practical wisdom (2000:113). In the case of the ‘Reflective Interpretation’ indicator the channel to discuss ‘what someone might puzzle and deliberate about’ is through a rational or a non-rational articulation about ‘what someone might puzzle and deliberate’ within the context of ‘what someone might puzzle and deliberate’. However, judgment only judges (Crisp, 2000:14).

By contrast, the meaning of the ‘Core Reflection’ indicator entails more and beyond a mere explanation or a judgment about ‘what someone might puzzle and deliberate’; it embraces self-actualization. The channel to discuss ‘what someone

might puzzle and deliberate about' is through deep contact with one's self. One thinks outside the boundaries of an episode and makes contact with deeper levels inside, portraying a deep examination of one's being rather than just examination of 'what someone might puzzle and deliberate'. The focus is on the inner experience and evidence may be all or some of the following: examining, tasting, comprehending, understanding, confirming, verifying; overcoming inner conflict; probing more deeply into personal knowledge or experience; beliefs become uncertain/revised decisions; self-criticism (not just intellectual argumentation); an experience finally makes sense and can be relied on in future action; possibility of creating new knowledge.

It would be of significance to also draw from Polkinghorne (1988) who, in a similar vein, argues that narrative is the fundamental scheme for linking individual human actions and events into interrelated aspects of an understandable composite...a meaning structure that organizes events and human actions into a whole, thereby attributing significance to individual actions and events according to their effect on the whole (1988:13-14). Implicit in Polkinghorne's description of narrative are assumptions that narrative is a cognitive scheme and that it has a particular form, thus, any understanding of narrative as a mode of inquiry is shaped and informed by narrative as a way of knowing and narrative as a genre with formal characteristics (Kramp, 2004:106). As a way of knowing, narrative enables the storyteller to organize the story told by linking events, perceptions, and experiences or, as Joan Didion (1961), suggests narrative fills the space between 'what happened' and 'what it means' (ibid.).

The image that follows provides an illustration of the interconnected, often overlapping, relationship of the three 'Depths of Reflexio Act', i.e. 'Reflective Thinking', 'Reflective Interpretation' (rational and non-rational), and 'Core Reflection':



In sum, the preceding discussion gave a detailed overview of the three ‘Depths of Reflexio Act’ illustrated in the Scheme of Indicators for Determining Evidence of Reflection, by illuminating how they are distinguished one from another, and by highlighting their defining characteristics and their focus in terms of the context and the boundaries within which they operate. As a final touch, I would also like to draw the reader’s attention to what might come into view as presentation cards, where every indicator and its defining characteristics unfold gradually and are being portrayed separately, in order to ensure transparency and enhance the reader’s understanding about how the indicators portrayed in the scheme are distinguished one from another:

(A) Un-reflective/Other [UN-R]

- No evidence of one’s articulated ‘bending back’ on a triggering object or a process.
- No evidence of an explanation/judgment being made.
- One may articulate e.g.
 - realms of thought or information processing related verbal pockets;
 - task related information;
 - passive agreement or seeking clarification;
 - social interaction.
- **At all times there is no evidence of one’s articulated ‘bending back’ or an explanation/evaluative judgment being made (rational or non-rational).**

(B) Reflective Thinking [RT]

- Evidence of one's articulated 'bending back' on an object or a triggering event. One must articulate this 'bending back' with
 - a) a mere description, or
 - b) a more sophisticated description/explanation of the background ('what' or 'how') of the 'bending back' and/or the object/triggering event, for the purposes of putting this 'bending back' into context, or to aid another's understanding about the issue one is making reference to (e.g. one is making oneself very explicit).
- One may also ask (rhetoric) questions in the 'meaning-making' process or when seeking to make an evaluative judgment.
- **At all times there is evidence of one's articulated 'bending back' but no evidence of a 'final cause' explanation or an evaluative judgment being made.**

(C) Non-rational Interpretation [RI-AR]

- There may be evidence of one's 'bending back' on an object or a triggering event as in [RT].
- One makes a (rigid) evaluative judgment without an explanation.
- One offers an explanation and/or or an evaluative judgment with an explanation based on e.g. a value, strong opinion, personal preference, habitual action, emotions.
- **At all times there is evidence of an articulated 'final cause' explanation and/or an evaluative judgment.**

(D) Rational Interpretation [RI-R]

- There may be evidence of one's description /'bending back' on an object or a triggering event, as in [RT], and/or evidence of [RI-AR] (as part of the meaning making process), which however develops as below:
- One argues by decomposing, reframing, reconstructing the issue and/or makes an evaluative judgment with an explanation
 - a) based on cause-effect relationships, and/or
 - b) considering a wider range of factors, e.g. pedagogical terms, the wider socio-economic and political context.
- **One's arguments do not need to be intellectual.**
- **At all times there is evidence of an articulated 'final cause' explanation and/or an evaluative judgment.**

(E) Core Reflection [CR]

- One thinks outside the boundaries of the triggering object/event, probing deeply into personal knowledge/experience.
- That experience now makes sense and may be relied on for future action.
- There may be evidence of one's description of 'bending back' on an object or a triggering event, as in [RT], and/or evidence of [RI-AR] and [RI-R] (as part of the meaning making process).
- **One's arguments do no need to be intellectual.**
- **The emphasis is on the inner experience (drilling and digging), rather than just intellectual examination of the triggering object.**

I will now turn to exemplify how the indicators were applied in the research analysis process by injecting examples of coded reflective units to demonstrate further how the indicators portrayed in the scheme are distinguished one from another in practice, and by exemplifying any challenging coding decisions and issues of coding in relation to inter-coder reliability, to ensure transparency and enhance the reliability of the research findings.

5.5.1 The Coding Scheme in Context

In Chapter 4, under the *Unit of Analysis* section, I explained that the unit of analysis in this empirical study was a conceptual unit referred to as 'reflective unit' (El-Dib, 2007:30), defined as one's idea or thought about a particular topic or event. In the same section, I have also reported that, in the process of the raw data being transformed and aggregated into units, which allow for the precise description of the content characteristics (Holsti, 1969:94), the data were coded according to the indicators portrayed in the coding scheme, and that the coding was carried out by two researchers, the principal investigator and a volunteer, to ensure there is no personal bias (Krippendorff, 1980:52). A coded version of the on-line and face to face forum transcripts may be found in Appendices XIX and XX respectively.

Un-reflective Unit/Other [UN-R]

Specifically, during the research analysis process, the identified ‘episodes’ in the discourse were coded as either ‘Un-reflective/Other’ [UN-R] or ‘Reflexio Act’ [RA]. The ‘Un-reflective/Other’ aspect of a reflective unit resembles what Dewey calls ‘stream of consciousness’, that is, ‘an uncontrolled coursing of ideas through our heads’ (1933:4). In an Un-reflective Unit/Other [UN-R] there is no evidence of a Reflexio Act, i.e. bending back on an object or process or an attempt to articulate an explanation or make a judgment and it may include, for example, realms of thought, information processing, articulating task-related information, social interaction, passive acceptance/agreement.

The following coded segments of data offer an illustrative interpretation of this indicator in more detail, with coding related thoughts and challenges being made explicit wherever appropriate:

[UN-R] Example 1

A:	What do you mean by <i>yeah?</i> -
FTF[UN-R]	The participant seeks clarification. Information processing. No evidence of a Reflexio Act.

[UN-R] Example 2

D:	I have recently graduated with a PGCE with enables me to teach in further education. How do I go about finding out about vacancies in the F.E. sectors, particular basic skills? This would go beyond the usual newspaper ads and vacancies on web-sites.
ONF[UN-R]	The participant seeks information/advice. No evidence of a Reflexio Act.

[UN-R] Example 3

G:	Yeah...I think you're right...
FTF[UN-R]	The participant concurs. Information processing. No evidence of a Reflexio Act.

With reference to [UN-R] Example 3, initially there was a debate between the two coders about whether this piece of data should be coded as ‘Reflective Thinking’, because the participant’s articulation denotes she is in a ‘thinking mode’, that is, it is possible that the participant was mentally engaged in one of the Reflexio Act phases indicated in the scheme but she did not verbalize her thoughts. However, it was eventually decided that this piece of data should be coded as ‘Un-reflective/Other’, because the participant’s articulation does not *actually* contain any information that would qualify as bending back on an object or a process (i.e. articulating a description) and as illustrated in the coding scheme.

The implication for theory of course is whether a Reflexio Act depends on whether one’s thinking is articulated and it is being made explicit or not. Descriptions of actions play an important role in Schon’s model of coaching in ‘Educating the Reflective Practitioner’ (Eraut, 1995:17). I, too, feel it is significant for one to articulate his thinking about an object or a process, hence, when drawing the map for the conceptual framework underpinning the notion of reflection employed in this thesis, I recorded that the Reflexio Act may be begin *following* a verbal product, i.e. one’s articulated thoughts about a ‘triggering event’.

Specifically, I feel that, although I acknowledge it is possible for reflective thinking to occur ‘in silence’, I also recognize that because it is ‘in silence’, it may be muddled. In addition, I also feel that the verbal or written reproduction of any ‘reflective thoughts in silence’, even if they are not muddled, adds clarity to these reflective thoughts and improves one’s (or another’s) understanding about the object of those reflective thoughts, because it is through that process of reproduction (verbal or written), in my opinion, that one is able to process, confirm, verify, and materialize one’s thinking in a more transparent and coherent format, thus, making it possible for one to contemplate further on one’s reflective thinking, consider angles or perspectives one may have overlooked, and/or decide on future action.

Reflective Thinking [RT]

Three indicators for determining evidence of reflection (or a ‘Reflexio Act’) were identified. The first one is ‘Reflective Thinking’ [RT]. This stage resembles Dewey’s stage of ‘invention’ (which is short imagination), and which Dewey thinks is an important stage as reflection requires that the thinker draws on past experience, ‘image-ing’ other events that are similar to or different from the experience being

inquired into; as Dewey calls it, it is ‘short imagination’. I see this stage as the subset for the subsequent phase, the ‘Reflective Interpretation’ stage, and it may include all or any of the following: bending back on an object or process or philosophy/belief, description, (rhetoric) questions, seeking clarification/explanation in an effort to understand/offer an interpretation/make a judgment.

[RT] Example 1

C:	I always refer to books. I don’t know what it is...
FTF[RT]	The participant bends back on an object/experience offering a mere description, wondering of the reasons behind the specific action. No evidence of explanation/judgement being made.

[RT] Example 2

SD:	I wonder how many teachers have had access to a named mentor in the workplace and how valuable the experience was? What do others think are the pros and cons involved, (a) for the mentor and (b) for the mentee?
ONF [RT]	The participant bends back on an object/process, articulates her thoughts (the experience of having access to a named mentor in the workplace), and she asks a question in an effort to make sense of and/or attribute a value to the process. No evidence of explanation/judgement being made.

[RT] Example 3

C:	The use of ICT and distance learning is an interesting one with, for me, some disturbing outcomes. ICT would seem initially to be the answer for distance learning but I am involved with some leadership and management distance learning and am the NE tutor. We have a VLE but I'm having great difficulties in getting people to sign up and participate. It is also interesting that there are only two of us participating in these discussions. So, why is this overall reluctance to take part? Are people afraid of the technology? don't have the time? Too aware of the ‘bad press’ that discussion on-line has received.
ONF [RT]	The participant bends back on an object/process (the value of ICTs and distance learning) offering a description of a personal experience. She poses a number of (rhetoric) questions in an effort to make sense of and attribute value to the object of the experience. No evidence of ‘final cause’ explanation/evaluative judgement being made.

Reflective Interpretation [RI]: Non-rational Interpretation [RI-AR]

The second indicator portrayed in the scheme is that of ‘Reflective Interpretation’ [RI]: ‘Non-rational Interpretation’ [RI-AR], that is, one offers an unreasoned evaluative judgment, or an explanation and/or judgement using gestalts, patterns, habitual action, rigid, strong personal beliefs, emotions, values. The examples that follow illustrate this indicator in more detail, evidence of which was observed only in the face to face discourse.

[RI-AR] Example 1

T:	I think they need to change those... er I think on most courses they're changing to like communication skills, literacy and numeracy ...
FTF[RI-AR]	Initially, one might think that this piece of data qualifies as ‘reflective thinking’. However, the participant is not just ‘bending back’ on the object/subject under discussion; she also makes a judgment, an unreasoned evaluative judgment, i.e. ‘I think they need to change those’, without offering an explanation as for the ‘why’, hence, this unit was coded as ‘Non-rational Interpretation’.

[RI-AR] Example 2

C:	I think they do, yes. I think when I finish the assignment I like to quote books at the bibliography obviously because it looks like...its more good... kind of smooth and...-
FTF[RI-AR]	The participant offers an explanation based on an opinion/personal preference, thus, presenting a ‘Non-rational Interpretation’.

[RI-AR] Example 3

A:	and I don't think that ICT has been the answer that the government hoped it would be...I don't think that it's...the take up has been as great as the government envisaged in sort of '98-'99 you know...sort of '97 when Helena Kennedy and the widening participation...in learning works article...er.- I mean they've banging on about it...a good few years now but I think sort of...particularly since the late 90s it was given..this high profile and you know...it was the drive to have all adults IT literate by a certain time.. you know, within so many years and all
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	the rest of it.. but I don't think its...its...had the impact that the government hoped it would...not yet anyway...you know...-
FTF[RI-AR]	The participant makes an evaluative judgement, i.e.' that ICT has not been the answer that the government hoped it would be' without offering an explanation as for the 'why' ICT has not been the answer, thus, making an unreasoned evaluative response, hence, this reflective unit was coded as 'Non-rational Interpretation'.

Reflective Interpretation [RI]: Rational Interpretation [RI-R]

The third indicator within a Reflexion Act is 'Reflective Interpretation' [RI] - 'Rational Interpretation' [RI-R], that is, one offers an (analytic) explanation, argumentation (not necessarily intellectual), (extensive) analysis by decomposing, reframing, reconstructing the issue, making reference to e.g. causal relationships, the socio-economic and political context. The examples that follow illustrate this indicator in more detail:

[RI-R] Example 1

K:	I personally haven't experienced any sort of provision of Basic Skills training...in any of the places that I have worked...I should imagine that...if work based...for those with Basic Skills needs...if work based provision were available...er I should imagine that there maybe a barrier to them attending such sessions as they may feel...such a stigmatised...they may worry about what their colleagues may think of them...if they got, you know, basic skills needs they may feel as if...er...well...er...they may feel that their colleagues er...might look down on them or...you know...er...view them in sort of an inferior way...er...
FTF[RI-R]	The participant offers a rational interpretation based on an analytic explanation by decomposing the issue, making reference to causal relationships.

[RI-R] Example 2

S:	<p>Last year I had a very diverse timetable and found myself teaching young adults, (16-19) and older return to learning mature adults, (45-50) The common factors found on entry were that they were hoping to gain qualifications for nursery nursing and all expressed a fear of reading out from a book to young children in the nursery.</p> <p>Teaching basic skills this is problem faced by many. Generally I felt that some of the younger students had behaviour problems and somehow lacked fundamental communication skills and this impaired to some degree their attitude to taking responsibility for their learning.</p> <p>It is difficult not to compare the two ages of learners but in this instance the older ones appeared to have the necessary social skills but because of prior negative learning experiences lacked confidence and self belief even though I believed they could succeed.</p> <p>The key here was that strategies have to be devised to enable students to take a responsible attitude to their learning which is diverse and ensures it is an enjoyable experience, (quite a challenge!).</p> <p>What are other members experiences of working with various age groups and how to improve motivation? –S</p>
ONF[RI-R]	<p>The participant offers a reflective interpretation based on an analytic explanation by decomposing, reframing, reconstructing the issue, making reference to causal relationships.</p>

[RI-R] Example 3

G:	<p>Well you know, as far as e-learning is concerned, I did try it, and the best doctrines I learnt by that...er for me personally I mean it was so boring...was a bit of a nightmare because I am not a person who is...I am more of a lively person [laughs] time –cup like, stuck by this [laughter].</p>
FTF[RI-R]	<p>The participant offers an explanation based on a ‘true belief’ deriving from a lived experience, making reference to a cause-effect relationship, thus, this piece of data was coded as ‘rational interpretation’. A further distinction may be made on the grounds that she does not articulate/consider the wider context or a wider scope of evidence/factors offering a sophisticated explanation, that of a ‘first order rational interpretation’, and as explained in the discussion that follows.</p>

The reflective unit in [RI-R] Example 3 was another challenging instance, which initially was coded as ‘Non-rational Interpretation’ [RI-AR], and which provoked lengthy deliberations before it was eventually decided it should be coded as ‘Rational Interpretation’ [RI-R]. The reasoning was as follows.

The participant bends back on a personal e-learning experience, explaining that for her ‘it was so boring...was a bit of a nightmare because I am not a person who is...I am more of a lively person’. My initial thought was that the participant offers an explanation based on a strong opinion or a belief, failing to articulate or consider the wider context or a range of factors which would have resulted in more sophisticated explanation/interpretation. However, although the participant does not directly make reference to the pedagogical term ‘learning styles’, she clearly makes reference to a causal relationship, that of her learning experience (‘boring’) and her preferred way of learning (‘I am more of a lively person’).

It has already been shown in the Taxonomy of Indicators for Determining Evidence of Reflection that a piece of data coded as ‘Rational Interpretation’ may be an interpretation, which is not necessarily intellectual, but which makes reference, amongst others, to causal relationships (‘final cause’). On these grounds, couldn’t then this segment of data qualify as ‘Rational Interpretation’? Or should it be considered to be an opinion, a belief, an unreasoned evaluative judgment and, thus, a ‘Non-rational Interpretation’? For plausible justifications could be offered by both one’s analysis that the specific reflective unit qualifies for the ‘Rational Interpretation’ indicator and one’s analysis that it qualifies for the ‘Non-rational Interpretation’ one. In other words, the emerging issue for me at that point was that of what one is rational to believe, and what one is rational to believe one is rational to believe; Christensen (2010) appears to share similar preoccupations, in the context of the ‘belief’, arguing in a similar vein:

If we think of beliefs in a categorical, rather than a graded, way, a plausible thought is that, rationally believing that P is incompatible with rationally believing that one’s belief that P is not rational. Putting the thought in terms of justification, the idea is that (justified) higher-level doubts about the justification of one’s belief that P can defeat one’s justification for believing P.

If we think of belief in a graded way, however, the connection between the two levels of belief appears in a somewhat different light. There seem to be plenty of cases where one’s rationally having a certain credence in a proposition is

compatible with one's rationally doubting that it is the rational credence for an agent in one's epistemic situation to have (Christensen, 2010:1).

In an attempt to address my concerns, I turned back to Aristotle's interpretation about 'beliefs' and 'reasoning', Plato's articulations about 'justified true belief', 'ordinary interpretation' and 'sophisticated interpretation', and also Kant's first *Critique*, where he distinguishes between knowledge, belief, and opinion, arguing that the first requires objective and subjective certainty, the second only subjective certainty, and the third neither objective nor subjective certainty.

So what happens then when one articulates an explanation/evaluative judgement which is 'ordinary interpretation' (Plato), e.g. in layman's language, with 'subjective and objective certainty', e.g. the participant's interpretation is based on subjective certainty ('it was so boring') and also on objective certainty (because the participant's subjective certainty is based on the outcomes of an actual experience and individual learning style), thus, based on a 'true belief' (Plato), plus making reference to a causal relationship ('..it was so boring...because I am I am more of a lively person..')? Would such interpretation qualify as 'rational' or as 'non-rational' interpretation? But then again, exactly what do we mean by 'rational' and what does it entail?

In this context, I decided that the specific reflective unit is based on both objective and subjective certainty/a justified true belief (on the grounds that it is knowledge derived from something experienced) and offers a rational (i.e. consistent with or using reason, reasonable) interpretation in terms of making reference to a causal relationship, thus, qualifying for the 'Rational Interpretation' indicator, despite the fact that the participant fails to articulate and/or consider a wider scope of factors/evidence, perhaps because she was still affected by her past negative experience.

Effectively then, and to borrow a term employed by Van Fraasen (1984, 1985), I placed a reasonable 'constraint on rationality', attributing to this segment of data the value of what I coined as 'first order rational interpretation', i.e. a response or an interpretation based on a justified true belief, or otherwise one which contains an objective degree of belief, a 'rational belief', versus a 'second order rational interpretation', which considers a wider scope of factors/evidence and is more sophisticated.

Still, the issue of ‘what is rational’ and ‘what one is rational to consider one is rational to consider’, how we are sure and how much we are sure about what we consider as ‘evidence’ or ‘objective thinking’, is one I find particularly fascinating and I feel it needs further consideration. Perhaps having coined the indicators as ‘rational interpretation’ and ‘non-rational interpretation’ is a matter I should contemplate on further in the future, including considering alternative terminology, such as ‘first-order interpretation’ and ‘second-order interpretation’, and where a distinction will be made on grounds other than what we consider (or perhaps presume) to be ‘rational’ and what isn’t, what is ‘objective/evidence’ and what isn’t.

Core Reflection [CR]

Last, but not least, the third indicator portrayed in the scheme is that of the ‘Core/Silent Reflection’ [CR], where one thinks outside the boundaries of an episode and makes contact with deeper levels inside (deep examination of one’s being rather than just examination of external episode). The ultimate result is self-actualization /realization. The focus is on the inner experience and evidence may be all or any of the following: examining, tasting, comprehending, understanding, confirming, verifying; overcoming inner conflict; probing more deeply into personal knowledge or experience; beliefs become uncertain/revised decisions; self-criticism (not just intellectual argumentation); an experience finally makes sense and can be relied on in future action; possibility of creating new knowledge. Again, it should be noted that evidence of ‘Core/Silent reflection’ was identified only in the face to face discourse and as illustrated in the two coded segments of data which follow:

[CR] Example 1

S:	To be honest the most time I've been in the forces, I served with the navy and the marines, I did a marines course, but er... I played sport most of the time. I had a really cushy time me like. (laughs) So I did some coaching qualifications but academically I didn't do anything. No. I left school. Two days after I left school I was in the forces. See me coming, '75, and er I didn't do any qualifications, sorry academic qualifications till I left the forces er I had that many injuries through time in the time in the forces er doing a bit in sports with other things as well. er I thought it would be a good idea, very good idea to go into ...to get certain teaching qualifications and, er and obviously coaching as well, but, that wasn't...that's another force to me, I even knew which avenue I was gonna go down, and er sports...but er I knew I needed qualifications so .. was it forced for me to do that ... why... was it motivation? or was it because I wanted them qualifications, just to have a bit more experience or ... was something I mentioned earlier about finances... you know, ... because of the old spondoolies...-
FTF [CR]	This participant responds to the discussion topic 'what motivates adults to learn' by thinking outside the boundaries of the episode and making contact with deeper levels inside. He probes more deeply into personal knowledge /experience by bending back on his own schooling experience and the decision making process behind continuing his education following the army. Prior beliefs/decisions become uncertain, i.e. as for the why he decided to join a course ('was it because I wanted them qualifications, just to have a bit more experience or ... was something I mentioned earlier about finances'), demonstrating deeper levels of understanding of his own actions, whilst at the same time offering a reflective interpretation.

[CR] Example 2

S:	I think a lot of it have to do with er..age as well, the age of the individual...because obviously..should say that the older you are, the more confident you usually become. When I was 16 years old, I walked into a room with one person..I mean I would blush... but the way to think it is...er what I'm just saying is confidence comes with age as well sometimes you know, and obviously the outside of your comfort zone...and that takes time to get used to different environments, different individuals...so..I think a lot of this is connected and has to be taken on further I believe...
FTF[CR]	Similarly, the participant bends back outside the boundaries of the episode, probing more deeply into personal knowledge/experience. The participant's narrative connects the past with the present, what happened with what it means.

5.5.2 Principles and Values, Boundaries and Defining Attributes of the Indicators for Determining Evidence of Reflection

The preceding discussion illustrated how the Scheme of Indicators for Determining Evidence for Reflection was applied in the research analysis process by injecting examples of coded reflective units to demonstrate further how the indicators portrayed in the scheme are distinguished one from another in practice, and by exemplifying challenging coding decisions and issues of coding in relation to inter-coder reliability.

The discussion also portrayed the defining attributes and the boundaries within which the indicators operate, alongside the constraints placed on these boundaries and, thus, they should always be considered in conjunction with the projected Scheme of Indicators, so that one may fully capture the coding analysis process. One should also bear in mind that these boundaries and their constraints operate within the wider theoretical framework underpinning the Scheme of Indicators, reflecting its values and its principles, and they are usefully summarized in the table that follows, to ensure transparency and enhance the reliability of the research findings:

Boundaries and Defining Attributes [BDA]
BDA 1: A graded view of ‘causality’ is adopted’ I must have an explanation with a ‘final cause’ or an evaluative judgment in a reflective unit, in order for the latter to qualify as ‘Reflective Interpretation’.
BDA 2: [RI-R] does not need to be intellectual; plus, the rational ‘constrain on rationality’ (first order and second order rational interpretation).
BDA 3: [RT] must offer evidence of an articulated bending back.
BDA 4: Evidence of [RT] maybe found in [RI] or [CR].
BDA 5: [RI] (RI-AR or RI-R) maybe found in [RT] if part of background to the object of [RT] (graded view on causality).
BDA 6: Evidence of [AR] maybe found in [RT] or [RI-R] or [CR].
BDA 7: [CR] demonstrates evidence of one’s probing deeper into personal knowledge/experience.

Values and Principles

1. All reflection is desirable (Cartesian Rationality), as this is the first phase that triggers the subsequent ones (The indicator [RT] is placed in the Scheme of Indicators within the Reflexio Act phase, plus I have argued that the indicators are not to be viewed in a hierarchical order).
2. A Reflexio Act [R] may be recognised upon one's articulated 'bending back' (BDA 3).
3. Reflection is not viewed as being an entirely rational, cognitive process, in which emotions and attitudes play a subsidiary role (Day, 1995:5) (BDAs 5 and 6).
4. Reflection is a meaning making process; that reconstruction or reorganization of experience which adds to the meaning of experience, and which increases [one's] ability to direct the course of subsequent experience (Dewey, 1944:74) (I recognize this value through indicators [RI] and [CR], plus BDA1).
5. 'Reflection involves not simply a sequence of ideas, but a con-sequence, a consecutive ordering in such a way that each determines the next as its proper outcome, while each outcome in turn leans back on, or refers to, its predecessors (Dewey, 1933:4) (This is why the unit of analysis in this study is the 'reflective unit'; plus, [RI] may initially involve evidence of [RT] or [RI-AR], as reflection may involve bending backwards and/or forward e.g. from non-rational to rational interpretation in the meaning-making process, plus BDAs 4, 5, and 6).
6. A reflective interpretation does not necessarily need to be intellectual (BDA 2).
7. Core Reflection has a focus on inner experience (Confucius) and it may include elements of both rational and non-rational interpretation during the process of making contact with deeper levels inside (BDAs 7 and 6).

Table 5.6 Principles and Values, Boundaries and Defining Attributes of the Indicators for Determining Evidence of Reflection

5.5.3 Comparative Illustrations of the Indicators for Determining Evidence of Reflection

The preceding discussion has illustrated the reasonable constraints I have placed on the boundaries of the Indicators for Determining Evidence of Reflection during the research analysis process; however, I think it might be useful if I was also to exemplify those constraints by giving some comparative illustrations of coded segments of data in what follows and to ensure transparency.

[UN-R] versus [RT]

In the first two coded reflective units below, participants [A] and [S] are posing a question seeking clarification regarding the previous discussant's articulations for the matter under consideration. [A] and [S] do not actually provide us with any articulated evidence of 'bending back' on an object or a process; thus, these segments of data do not qualify for any of the Reflexio Act indicators.

A:	What do you mean by <i>yeah</i> ?-
FTF[UN-R]	The participant seeks clarification. Information processing. No evidence of Reflexio Act.

S:	You think that it would be a good idea that the tutor have sort like put down guidelines?
FTF[UN-R]	The participant seeks clarification (interrupts the principal discussant) by posing a question which rephrases/summarizes the principal discussant's articulations.

However, in the two coded reflective units that follow, participants [P] and [SD] pose a question/initiate a discussion by 'bending back' on an object/process, offering a brief and a more detailed respectively intellectual description of the object/process, in an effort to offer an explanation/make a judgement. Hence, these two segments of data were coded as 'Reflective Thinking'. Should there be evidence of an articulated explanation ('final cause') or judgement, these segments of data would then qualify for the 'Reflective Interpretation' (RI-AR or RI-R) or 'Core Reflection' indicator and as appropriate.

P:	What do you think about 'basic skills'? The wording I mean.
FTF[RT]	The participant bends back on an object/process, offering a brief description of the object/process, seeking clarification (others' opinion) in an effort to make an interpretation.

SD:	I wonder how many teachers have had access to a named mentor in the workplace and how valuable the experience was? What do others think are the pros and cons involved, (a) for the mentor and (b) for the mentee?
ONF [RT]	The participant bends back on an object/process (the experience of having access to a named mentor in the workplace) and she asks questions in an effort to make sense of and attribute value to the process. No evidence of explanation/judgement being made.

[RT] versus [RI-AR]

In the first coded reflective unit below, participant [A] makes a judgement, i.e. 'the books have more respected titles', without an explanation, thus, offering an unreasoned evaluative response; hence, this segment of data was coded as 'Non-rational Interpretation'.

In the second and third coded segments of data, although participants [C] and [P] offer an explanation/make a judgement, i.e. 'I like to quote books at the bibliography obviously because it looks like...its more good... kind of smooth' and 'It's easier as well', these explanations are based on an opinion/belief, thus, these interpretations/judgements qualify as 'Non-rational Interpretations'.

A: FTF[RI-AR]	I think that books have more respected titles...
C: FTF[RI-AR]	I think they do, yes. I think when I finish the assignment I like to quote books at the bibliography obviously because it looks like...its more good... kind of smooth and...-
P: FTF[RI-AR]	It's easier as well [laughter] that's why I like using them [laughs]
K: FTF[RT]	I always refer to books. I don't know what it is...

However, in the fourth coded piece of data, participant [K] offers a description only, articulating that she doesn't 'know what it is', i.e. why she always refers to books, thus, seeking for an explanation; still, she does not offer one, thus, this segment of data was coded as 'Reflective Thinking'.

[RI-AR] versus [RI-R]

In the first coded piece of data below, participant [C] responds to another participant's query, i.e. 'What do you think about 'basic skills'? The wording I mean'. She offers an analytic explanation regarding why the phrase 'basic skills' is seen as a derogatory term by decomposing/reframing the issue making reference to socio-political issues; thus, this segment of data was coded as 'Rational Interpretation'.

C: FTF[RI-R]	I do think that when its phrased as basic skills it is ...I think its seen as a derogatory term, that you 've got the basic skills, the basic fundamental skills...you know...like the baseline...things that people do feel that they should have come away from school ...you know...and I think there are reasons why er...-
S: FTF[RI-AR]	But we've got all of these adults, these large percentage of adults with basic skills needs...even after they have gone through the whole schooling system, not just people coming from abroad or you know... language barriers and things like that but...er..people who have sort of been born and educated in the UK er...and they are still coming through the schooling system...you know...basic skills needs...I don't know...I...it is..I do think there is a big stigma about it...the term basic skills....people do see it...in a derogatory way er...-

However, in the second coded piece of data, although participant [S] offers an analytic description with reference to the subject matter under discussion, he only makes a judgement, i.e. 'I do think there is a big stigma about it...the term basic skills....people do see it...in a derogatory way', and he does not articulate an explanation/justification for the 'derogatory way' or the 'stigma', and as participant [C] did. If participant [S] had only offered a description of the subject matter under discussion without articulating a judgement, i.e. 'there is a big stigma about it...the term basic skills....people do see it...in a derogatory way', then this piece of data would have been coded as 'Reflective Thinking'.

[RI] versus [CR]

In the first coded piece of data that follows, participant [C] offers an explanation and makes a judgement based on a personal opinion/perception. Hence, this reflective unit was coded as 'Reflective Interpretation: Non-rational Interpretation'. By contrast,

participant [K] articulates an analytic explanation of the issue making reference to causal relationships and the socio-economic context; hence the specific reflective unit was coded as ‘Reflective Interpretation: Rational Interpretation’.

<p>C: FTF[RI-AR]</p>	<p>I think they do, yes. I think when I finish the assignment I like to quote books at the bibliography obviously because it looks like...its more good... kind of smooth and...-</p>
--	---

<p>K: FTF[RI-R]</p>	<p>I think there are a range of factors...I think a strong motivation...a lot of the adults that I’ve taught have been financially disadvantaged ...and to improve their employment prospects er...if they learn new skills, if they master these skills then it will hopefully open up doors to more lucrative employment for them er...sometimes not necessarily more lucrative...sometimes more enjoyable job...er..</p>
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<p>S: FTF[CR]</p>	<p>I think a lot of it have to do with er..age as well, the age of the individual...because obviously..should say that the older you are, the more confident you usually become. When I was 16 years old, I walked into a room with one person..I mean I would blush... but the way to think it is...er what I’m just saying is confidence comes with age as well sometimes you know, and obviously the outside of your comfort zone...and that takes time to get used to different environments, different individuals...so..I think a lot of this is connected and has to be taken on further I believe...</p>
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When considering the third coded reflective unit though, one may immediately detect the distinct difference from the two preceding modes of ‘Reflective Interpretation’. Participant [S] is ‘bending back’, thinking outside the boundaries of the episode (‘what motivates adults to learn’), and making contact with deeper levels inside. He probes more deeply into personal knowledge/experience, reaching deep levels of understanding of his own experience, which finally makes sense and can be relied on for future action. Hence, he is making a connection with the subject matter under discussion, offering an interpretation and making a suggestion which could qualify as ‘probability of creating new knowledge’.

5.6 Concluding Remarks

This chapter has presented a narrative description of how the ‘Scheme of Indicators for Determining Evidence of Reflection’ evolved through engagement with the literature and interrogation of the data, exemplifying the decision-making process behind the development of the scheme, so that it becomes more explicit and transparent to the reader.

Specifically, I described my preliminary thoughts and experience of conducting a thorough literature review to identify an appropriate tool or taxonomy which would reliably assess my prospective research participants’ contributions against the variable reflection, and I shared my enthusiasm, anxieties and concerns when I thought my literature review efforts had come to fruition. I then exemplified step by step how my initial concerns and anxieties were transformed into building blocks of thoughts and towards scaffolding the scheme of indicators projected in this study.

Last, I exemplified how my transformed understanding of the concept ‘reflection’ and the subsequent emerged scheme of indicators are uniquely positioned amidst current discussions about reflection and its assessment, and I discussed and illustrated how the scheme was applied in the research analysis process by injecting segments from both the face to face and the on-line forum transcripts, exemplifying the coding decision making process.

The following section, Section III, reports on the findings of the present empirical investigation, illuminating further the context within which the findings were analysed, alongside subsequent discussion and interpretation, highlighting the emerging salient themes, and by drawing upon the pertinent literature. Finally, it should be said that, due to the complexity of the data, Section III is divided into four chapters, that is, Chapters 6, 7, 8 and 9.

Section III

Research Findings: Analysis and Synthesis

As the reader might recollect, Section I of this thesis (Chapters 1 and 2) presented the *Background to the Study and an Analysis of the Pertinent Literature*, whilst Section II (Chapters 3, 4 and 5) offered an overview of the context of *Social Scientific Research: Principles and Perspectives*, an *Analysis of the Empirical Investigation* and *Developing the Scheme of Indicators for Determining Evidence of Reflection* respectively.

In Chapter 4, I advocated for an *analysis* of the present study into these instances where analysis means breaking the present inquiry into its constituent parts and viewing them in the relation to the whole they form; however, this analysis, whilst important, is only part of the research dialogue, as the other important component involves *synthesis* of these constituent parts, which involves putting pieces together to make sense of them:

When social researchers synthesize these constituent parts, they form a coherent whole out of separate parts, making connections among elements that at first glance may seem unrelated or inappropriate. These connections may lead to further insights into the phenomenon they are trying to understand. [Thus], the synthesis ... is presented as a process of forming constituent parts-images of the research [findings] (Ragin, 1994:56).

Hereto, Section III reports on the findings of the present empirical investigation by exemplifying the context within which the findings were analysed, alongside subsequent discussion and interpretation, epitomizing the emerging salient themes and by drawing upon the pertinent literature.

Three salient themes have emerged from the analysis of the empirical findings:

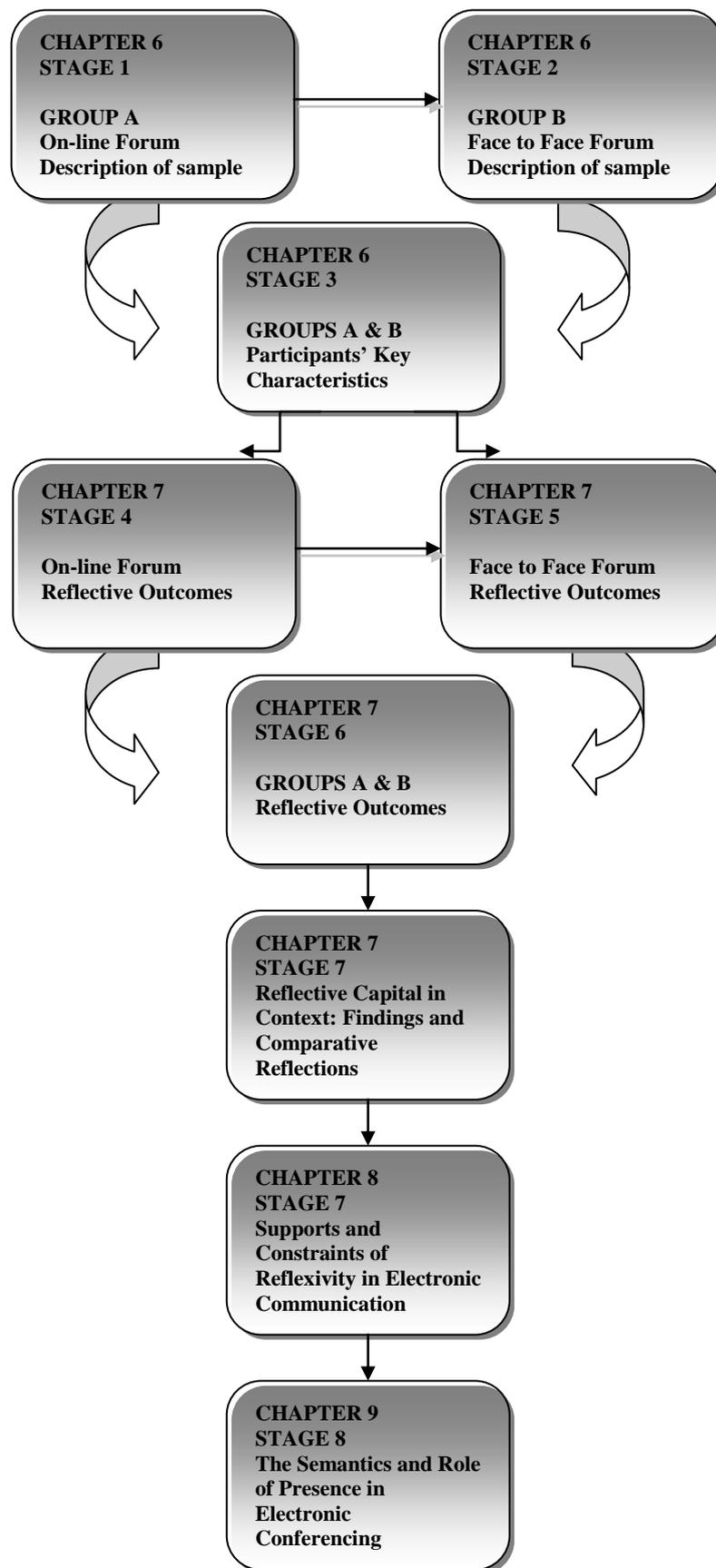
1. Reflexivity can be accomplished in asynchronous computer mediated communication, demonstrating higher levels of *Reflexio Act* (in terms of the aspect of reflexivity) and in comparison to the equivalent face to face discourse.
2. Social presence cues have been found to be relatively weak in a computer mediated discourse.
3. The recurring theme of storytelling observed in the face to face discourse appears to cultivate and influence the depth of reflexivity achieved.

Organisation of Section III

Furthermore, and due to the complexity of the data, this section is divided into four chapters, that is, chapters 6, 7, 8 and 9. The partition of the chapters is founded on the steps of analysis undertaken and the emerging salient themes grounded on the analysis of the empirical data.

Chapter 6 offers an overview of the characteristics of the sample, by exemplifying the method employed for the purposes of dividing the sample (or subpopulation) into two comparable groups. Chapter 7 reports on the reflective outcomes of the on-line forum and contrasts those findings by comparison with the face to face discourse. Last, but not least, Chapters 8 reports on the supports and constraints that support reflexivity in an electronic environment, whereas Chapter 9 addresses the salient role of social presence, which emerged as a unified theme during the analysis of the empirical data.

The figure that follows offers an overview of the discussion as it develops throughout Section III and within its built-in chapters.



Overview of Section III: Chapters 6-9

Chapter 6

The Two Cases within the Case: Characteristics of the Sample

6.0 Introduction

As the reader might recollect, the preceding chapters (Chapters 3 and 4) offered an extended discussion on the research approach adopted in this thesis, that is, a comparative methodology within the case was employed to reveal the reflective outcomes of the asynchronous computer mediated discussion by comparison with the face to face discourse.

Hereto, the present chapter reports on the context within which the findings were analysed, alongside subsequent discussion and interpretation. On these grounds, I will set the scene by offering a succinct overview of the sample of the study; first, I will exemplify the method employed for the purposes of dividing the sample (or subpopulation) into two comparable groups, and then I will report on the characteristics of the participants allocated in each cluster by carrying out an exploratory analysis and performing descriptive statistics to report on the sample's characteristics. In doing so, I envisage that I will meet the reader's expectations in gaining an insight into the background particulars of the participants, who formed the two cases within the case, that is, the on-line and the face to face forums respectively.

6.1 The Initial Questionnaire

In Chapter 4, it was explained that the *convenience sampling* method and the *flow population* and *snowballing* approaches were employed to the sampling process, and that they resulted in framing the sample of the study with a total of twenty participants. Furthermore, it was revealed that the sampling process involved two stages, with the latter stage entailing framing the initial sample (or subpopulation) for the purposes of composing two comparable groups within the case.

To this end, the questionnaire tool was employed as an attractive device to obtain essential demographic and background particulars related to the participants' age, gender, qualifications, occupation and subject area of expertise. Information on matters related to a) access, frequency and purpose of using a computer device, b) information and communication technology (ICT) skills and attitudes, and c) prior experience of participating in an on-line forum were also obtained. An open ended question was utilised as the last item in the questionnaire to gather data that would offer an indication of participants' aptitude for reflectivity when presented with an opportunity, or otherwise a 'triggering event', to present their views on a subject matter related to their professional practice.

The responses to the open ended question were analysed thematically with some quantification and also with textual analysis, i.e., the data were coded as either *descriptive* or *critical reflection*, based on Ho and Richards's *Table for Descriptive and Critical Reflection* (1993) [with minor modifications], to assess participants' reflective thinking by identifying and capturing emerging characteristics of *descriptive writing*, *descriptive reflection*, *dialogic reflection* and *critical reflection* (Hatton and Smith, 1995).

6.1.1 Recording and Processing Responses

Specifically, the initial questionnaire consisted of 15 items, 14 'closed' questions and one 'open' question. Each item was identified as a variable and all possible responses were assigned a numerical code for the purposes of entering the data in a SPSS file (SPSS 15.0 for Windows). Missing values were also declared by indicating and coding the reason for which a score was missing, i.e. '98 = refused to answer' and '99 = question not applicable'. The coding labels assigned to the variables may be found in Appendix XIX.

The final item of the initial questionnaire, i.e. the open question, was that of the greatest interest in this initial analysis stage, as it endeavoured to capture participants' aptitude for reflection in response to a triggering episode. The open ended question required participants to refer to a recent training initiative they attended and to briefly explain the reason(s) for their participation, argue for its usefulness and reflect on the subsequent effect - if any - on their individual professional practice and performance. This questionnaire item attracted a variety of responses in terms of content and length and a sample of the open ended responses transcribed may be found in Appendix XX.

It would be of interest to note though that the variable reflection (REFL) was coded in two modes, i.e. it was initially coded on a four point scale (adopted by Hatton and Smith's (1994) criteria for the recognition of evidence for different types of reflective writing) in order to reveal the *depth* of participants' reflection ('1 = Critical Reflection', '2 = Dialogic Reflection', '3 = Descriptive Reflection', '4 = Descriptive Writing'), and later it was re-coded as 'REFL1' on a two point scale ('1 = Deep Reflection' and '2 = Surface Reflection'). The rationale for employing the latter scale was for practical reasons mainly and to allow for 'matching the cases on the basis of some characteristic that is known to correlate with the outcome measure' (Fitz-Gibbon and Morris, 1987:39), i.e. in this case the variable reflection. It should be noted, however, that out of a total of twenty participants, one did not offer a response to the open ended question, and, thus, the missing value was recorded by allocating the coding label '98 = refused to answer'.

Textual analysis revealed that nearly half of the respondents (40%) made reference to a university course and almost one third of the responses (30%) made reference to a work related training initiative, whereas only 20% denoted a conference event they attended to keep up with developments in the area of their expertise.

Next, the written responses were reviewed and classified to identify the aspect and depth of the reflection variable in participants' comments. The responses to the open question were transcribed, coded and reviewed, initially a number of times by the principle coder (the researcher) and then both by herself and an independent coder to achieve both 'coding stability' (Krippendorff, 1980) and inter-coder agreement or *coefficient of reliability* (CR=90%) (Holsti, 1969; Rourke *et al.*, 2001).

6.1.2 The Two Prominent Variables

In sum, descriptive statistics were performed and the frequencies of responses were computed for the nominal and scale variables to offer an overview of the characteristics of the subpopulation and allow the enquirer to gain an insight into the characteristics of the sample. A list of tables that report on the frequencies of responses may be found in Appendix XXI.

As soon as all variables were reviewed and analysed, the sex (SEX) and the reflection (REFL) variables were deemed as the pertinent attributes in the decision making process of forming the two comparable groups; in other words, the two groups were matched for those variables that it was thought they might affect the 'response to treatment' (Fitz-Gibbon and Morris, 1987:39), in this occasion the reflection outcomes of the on-line forum discussion. As the purpose of the exploratory analysis stage was to divide the subpopulation into two comparable groups, no further analysis and between the variables, was performed at that point.

What follows is a brief discussion that exemplifies the critical role these two key variables played in the partition of the population within the two clusters, the on-line and the face to face forums.

The Variable Reflectivity

The variable reflection was the prime dynamic in the partition of the subpopulation into two comparable groups. The initial content analysis of the 19 responses to the open question revealed that almost two thirds of the participants' comments demonstrated evidence of descriptive writing and descriptive reflection (30% and 35% respectively), with only six instances of critical reflection present (30%). What might be interesting to note at this point is that there was no evidence of dialogic reflection as defined by Hatton and Smith (1995), that is, an indication of one engaging in discourse with the 'self'. A possible explanation might be that the initial questionnaire, and specifically the format of the open question requesting participants to offer a short response, i.e. less than a 100 words, did not offer adequate 'space' or 'time' for the participants to engage 'in discussion with the inner self'.

Furthermore, and as it was not practical to device the two comparable clusters based on the *depth* attribute of participants' reflective aptitude, a second content analysis was performed based on a two-point scale to allow for a less complicated and

more consistent partition of the subpopulation. In doing so, six instances of ‘Deep Reflection’ were recorded (30%), whereas the majority of responses (65%) were categorised as ‘Surface Reflection’. The table below offers an overview of the findings from the analysis of participants’ responses to the open question and the instances of reflection observed in terms of its aspect and depth.

Aspects of reflection	Depth of reflection		
	Critical Reflection	Descriptive Reflection	Descriptive Writing
Deep Reflection	6		
Surface Reflection		7	6

Table 6.1 Frequency of Responses to the Open Question for the Variable Reflection

With the challenge being how to treat the single missing value, a rather arbitrary decision was made, and for practical reasons mainly, since the aim of the analysis was to divide the sample into two comparable groups, to allocate the missing value to the ‘Surface Reflection’ category. In doing so, and as a result, the participants allocated in each cluster would demonstrate three instances of deep reflection and seven instances of surface reflection.

The Variable Sex

With reference to the variable sex, the sample consisted of 11 females and 9 males (55% and 45% respectively). Surely, it would have been more convenient if the proportion of males and females in the subpopulation was equal; however, as this was not the case, and since the on-line forum was the primary focus of the empirical investigation, a somewhat arbitrary decision was made once more to ensure that equal proportion of each value was allocated to the latter.

SEX	Frequency	%
Female	11	55.0
Male	9	45.0

Table 6.2 Frequency of the Variable Sex

6.2 Forming the Two Comparable Groups: Initial Operations

In sum, every effort was made to ensure that each group represented an equal proportion of the salient variables ‘reflection’ and ‘sex’ and, eventually, ten participants were allocated to each forum. An overview of the characteristics of the population within each group is discussed briefly in what follows.

6.2.1 The On-line Cluster: An Overview of the Participants’ Characteristics

The participants allocated to participate in the on-line forum demonstrated an equal proportion of the sex variable, that is, five males and five females. The participants fell across the whole range of the age categories specified in the initial questionnaire with almost one third of them (30%) falling into the ‘51-55’ age category and as summarized in the table below.

On-line Forum						
Participants' sex	Participants' age					
	31-35	36-40	41-45	46-50	51-55	56+
Female			2		2	1
Male	1	2		1	1	

Table 6.3 Frequencies of the Variables Age and Sex in the On-line Forum Case

The majority of them were employed in FE College institutions (40%), with three participants being employed in the Community and Voluntary sector (30%), whereas two were occupying posts within the Private sector (20%) and one reporting ‘other’ (10%). With reference to their employment role, out of ten participants, six were occupying teaching related posts, two were involved in management related roles and two reported ‘other’.

Almost one third of the on-line forum population were apparently quite comfortable using information and communication technologies since nearly one third of the participants reported ICT as the subject area of their expertise (30%), with the subject areas of ESOL and Literacy reaching a fraction of 20% each. Numeracy was reported as a subject expertise only by one participant, whereas two respondents (20%) recorded a combination of the above subject areas as their area of their

expertise. In terms of qualifications, the majority of the participants reported that they were educated to degree level (70%), whereas almost one third of the respondents stated that they held a Masters degree (30%).

Ten out of ten participants declared that they use a computer device for their personal work (100%), with the majority of them demonstrating awareness of the operating system they use, i.e. six reported that they use MS Windows XP (60%) and three selected the MS Windows 98 option (30%), whereas only one reported that they didn't know (10%).

In the present study, when inviting the on-line forum participants to comment on how they would rate their computer skills, over half of the population rated their IT skills as 'good' (60%), two as 'expert' (20%), with only one participant recording 'fair' in his response (10%). There was one missing value though as one participant did not select any of the available options nor made any relevant comments. In addition, they all reported regular access to a computer device connected to the Internet with half of the population claiming that they visit the World Wide Web (WWW) for work related purposes (50%), three reported the need to access 'the news' (30%), whereas two participants stated that they connect to the internet most often for research purposes (20%).

It might worth noting at this point though and after Braak (2001), that a positive relation between the degree of computer experience and CMC use is assumed as, hypothetically, CMC users have more computer experience expressed in time than non-users, as CMC requires more technical background and skills (2001:43).

Indeed, the vast majority of the population stated that they had participated in an on-line forum in the past (90%), with only one member reporting otherwise. With reference to the reasons for their participation, approximately one third of the participants (30%) referred to course study requirements (Blackboard being the one mentioned most often), another three made reference to their professional development (30%), whereas two members referred to work related reasons (20%) and one reported 'other'(10%).

When asked about the average time they had formerly spent on an on-line forum, just over half of the participants reported '0-30 minutes' per day (60%), with only two recording '31- 60 minutes' on-line (20%) and one 'less than 2 hours' a day (10%). A summary of tables that report on the frequencies of responses to the initial questionnaire may be found in Appendix XXI.

With reference to the key variable reflection (REFL), almost one third (30%) of the participants allocated to the on-line group had demonstrated ‘pre-test’ evidence of deep reflection, with the vast majority (70%) exhibiting proof of surface reflection and as illustrated in the table below.

Aspects of reflection	Depth of reflection		
	Critical Reflection	Descriptive Reflection	Descriptive Writing
Deep Reflection	3		
Surface Reflection		5	2

Table 6.4 On-line Forum Participants: Pre-test Reflective Responses in Terms of Aspect and Depth

I will now turn to offer a succinct overview of the participants’ characteristics that were allocated to the second cluster, that is, the face to face forum.

6.2.2 The Face to Face Cluster: An Overview of the Participants’ Characteristics

To ensure equal proportion of the gender values in the on-line forum, just over half of the population allocated to the face to face forum were females (60%), whereas the male participants were four. In terms of the age variable, nearly half of the population fell in the ‘41-45’ category (40%), with the lowest value identified in the ‘18-25’ group (10%) and as illustrated in the table below.

Face to Face Forum				
Participants' sex	Participants' age			
	18-25	36-40	41-45	51-55
Female	1	2	2	1
Male		1	2	1

Table 6.5 Frequencies of Participants' Age and Sex

The majority of the population were employed in the Community and Voluntary sector (40%) whereas nearly one third of the participants were occupied within the Further Education sector. The categories of Local Authority, Private sector and 'other' were reported by a 10% each. With reference to their employment roles, the teaching related posts were reported by half of the population (50%) with management roles being occupied by only a 20%, whilst approximately one third of the respondents reported a combination of the above employment roles by selecting the 'other' option (30%).

It would be interesting to note at this point that half of the face to face forum population reported expertise in the subject area of ICT (50%), whereas the subject areas of Literacy, Numeracy and ESOL were accounted only by a 10% each. In addition, two of the participants reported that they specialize in a combination of post-16 education subject areas. Just over half of the participants reported being qualified to degree level (60%), whereas two members had attained a Level 3 qualification (20%). An equal proportion reported 'other' (20%).

Ten out of ten participants reported using a computer device for their personal work and being knowledgeable about the operating system they use (the majority using the most recent version of MS Windows available), i.e. seven reported using Windows XP, with two selecting the 1998 version and one being a Linux user.

Overall, over two thirds of the population declared that they are competent users of information technologies, i.e. five participants rated their IT skills as good (50%), two recorded 'expert' in their response (20%), whilst just below one third (30%) selected the 'fair' option. In addition, all of the participants reported regular access to the Internet, with just over half of the population visiting the World Wide Web for work related purposes (60%), whereas the remaining 40% referred equally to 'research', 'the news', 'socializing' and 'other' (on-line shopping).

Nearly one third of the face to face participants had participated in an on-line forum in the past (30%) due to course studies requirements (20%) or other reasons (10%), with the average time spent on-line ranging from '0-30 minutes' to '31-60 minutes' and 'less than 2 hours' equally.

With reference to the key variable reflection (REFL), almost one third of the participants allocated to the face to face forum had demonstrated 'pre-test' evidence of deep reflection (30%), with the vast majority of the population exhibiting proof of

surface reflection (70%) (including the missing value) and as highlighted in the table of frequencies below.

Aspects of reflection	Depth of reflection		
	Critical Reflection	Descriptive Reflection	Descriptive Writing
Deep Reflection	3		
Surface Reflection		2	4
Missing Value			
[Surface Reflection]			1

Table 6.6 Face to Face Forum: Pre-test Reflective Responses in Terms of Aspect and Depth

A list of tables that report on the frequencies of responses to the initial questionnaire may be found in Appendix XXI.

6.3 Synopsis: A Comparative Overview of the Characteristics of the Sample

In sum, it has been argued that every effort was made to ensure that the subpopulation was divided into two comparable groups, by taking into consideration the key variables ‘sex’ and ‘reflection’. Hereto, five males and five females were allocated to the on-line forum, whilst the remaining of the population, i.e. six females and four males were assigned to the face to face cluster.

SEX	Number of Participants	
	On-line Forum	Face to Face Forum
Female	5	6
Male	5	4

Table 6.7 Allocation of Participants in the two Forums in Terms of the Variable Sex

This somewhat unequal distribution of the sex variable was deemed necessary to ensure a comparable allocation in terms of the primary variable ‘reflection’, the latter being based on the ‘pre-test’ results of the initial questionnaire’s open question for evidence of ‘deep’ or ‘surface’ reflection in the participants’ written contributions.

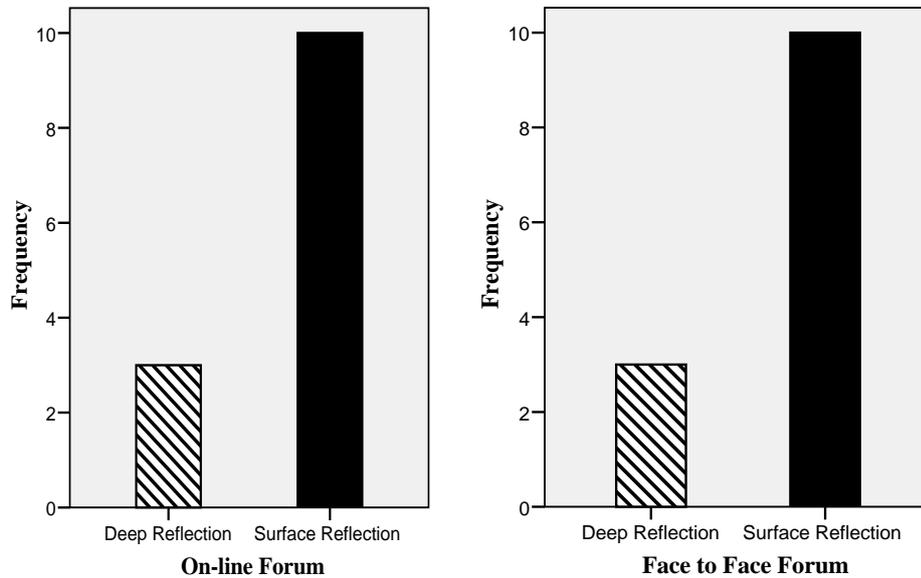


Figure 6.1 Allocation of Participants in Terms of the Variable Reflection

It would also worth noting that almost half of the population in each forum had rated their IT skills as ‘good’ with 20% in each case declaring that they are ‘expert’ users of information technologies (Table 6.8).

IT Skills	Frequencies	
	On-line Forum Participants	Face to Face Participants
Expert	2	2
Good	5	6
Fair	3	6
Missing		1

Table 6.8 Participants’ IT Skills in the Two Forums

Specifically, the fact that seven of the on-line forum participants declared feeling comfortable using a computer device (70%), with a total of nine having participated in an on-line forum in the past (90%) (Table 6.9), made it hard to resist a moderate optimism for anticipating relative ease in navigating the on-line forum, and at least encouraging levels of participation in terms of the amount of contributions made on-line.

Previous Experience of Participating in an On-line Forum	Frequencies	
	On-line Forum Participants	Face to Face Participants
Yes	9	3
No	1	7

Table 6.9 Participants' Previous Experience of Participating in an On-line Forum

With these thoughts in mind and all the necessary arrangements in place, the implementation stage of running the two forums commenced. However, not everything functioned exactly as originally planned, as a number of operational anomalies were observed and are discussed below.

6.3.1 The On-line Forum Particulars

Specifically, the participants allocated to the on-line forum were invited early in November 2004 to complete an on-line registration form, a necessary prerequisite for them to be able to join the on-line discussion, which was due to commence the 12th November 2004 and that it would last for approximately eight weeks.

Nevertheless, only six out of the ten allocated participants completed the on-line registration form. Despite constant reminders and polite requests, no response was received and as such, the reasons for their non-participation are yet to be known. I realised though at a certain point that one of the participants was inaccessible due to gaining alternate employment. Indeed, this had had an inevitable effect on the composition of the participants' characteristics in the on-line cluster and as follows.

With a total of six participants now forming the on-line forum, instead of 10, and although the equal analogy of participants in terms of the variable 'sex' did not

alter (3 males and 3 females), there was a significant modification with reference to the variable ‘reflection’; the whole of the on-line cluster was demonstrating now 100% of ‘surface reflection’ in their ‘pre-test’ replies to the open question, with no incidents of ‘deep reflection’ observed and which were previously recorded to a fraction of 30% and within the initial cluster of 10 participants.

[Updated] On-line Forum Participants	Frequencies	
	Deep Reflection	Surface Reflection
Female	0	3
Male	0	3

Table 6.10 Updated On-line Forum Participants’ Composition

Yet, a second frequencies analysis revealed that the majority of the participants that framed the final composition of the on-line group were, and as previously, confident about their IT skills, with only one participant recording ‘fair’ in his response. Finally, the vast majority declared that they had participated in an on-line forum previously with only one participant reporting otherwise.

[Updated] On-line Forum Participants’ IT Skills	Frequencies	
	Participation in an on-line forum	
	Yes	No
Expert	1	
Good	2	1
Fair	1	
Missing	1	

Table 6.11 On-line Forum Participants’ IT Skills and Previous Participation in an On-line Forum

6.3.2 The Face to Face Forum Particulars

Similarly, the composition of the face to face cluster did not remain unaffected either; out of the ten participants invited to participate, only seven managed to attend and due to unforeseen work related commitments. In this context, the final composition of the face to face forum entailed 4 females and 2 males (instead of 6 females and 4 males as initially planned), with the females demonstrating four instances of ‘surface reflection’, whereas the males were representing the solely two instances of ‘deep reflection’ in their ‘pre-test’ replies to the open question (previously recorded to a fraction of 30% for deep reflection and 70% for ‘surface reflection’ and within the initial cluster of 10 participants).

[Updated] Face to Face Forum Participants	Frequencies	
	Deep Reflection	Surface Reflection
Female		4
Male	2	

Table 6.12 Updated Face to Face Forum Participants’ Composition

Further, a second frequencies analysis revealed that the majority of the participants that framed the final composition of the face to face group were, and as previously, fairly confident about their IT skills, with two members rating ‘expert’ and four ‘good’ their IT skills. Only one participant recorded ‘fair’ in his response. Finally, three participants declared that they had participated in an on-line forum previously, with four reporting otherwise.

[Updated] Face to Face Forum Participants’ IT Skills	Frequencies	
	Participation in on-line forum	
	Yes	No
Expert		2
Good	2	2
Fair	1	

Table 6.13 Face to Face Forum Participants’ IT Skills and Previous Participation in an On-line Forum

6.4 Concluding Remarks

This chapter has offered an overview of the characteristics of the sample by exemplifying the method employed for the purposes of dividing the sample (or subpopulation) into two comparable groups. I have also reported on the participants allocated in each cluster by carrying out an exploratory analysis and performing descriptive statistics to report on the sample's characteristics.

I did so in order to epitomize on the context within which the reflective outcomes of the on-line communication were analysed and by comparison with the face to face discourse. The chapter that follows, reports on these findings alongside analysis and subsequent discussion and interpretation.

Chapter 7

Reflective Capital in Context: Findings and Comparative Reflections

7.0 Introduction

As the reader might recollect, the preceding chapter offered a succinct description of the sample of the study; initially, I referred to the method employed for the purposes of dividing the subpopulation into two comparable groups, and then I reported on the characteristics of the participants allocated in each cluster by carrying out an exploratory analysis and performing descriptive statistics to report on the sample's characteristics.

The following pertinent questions then seem to come into surface, as one would arguably ask: can reflection be accomplished in an asynchronous computer mediated communication context after all? If yes, what aspects and depth of reflexivity does asynchronous computer mediated discourse achieve, and how does it compare in terms of its reflective outcomes with the traditional face to face communication?

Hereto, this chapter addresses these core research questions by analyzing the empirical data gathered, and by reporting on the research findings of the present investigation. First, I will report on the reflexivity observed in the on-line discourse, by analysing both its aspect and depth. Next, I will examine the reflective outcomes achieved in the computer mediated discourse by comparison to the reflexivity

observed in the face to face setting. Last, I will conclude with some comparative reflections on the research analysis findings and by drawing upon the pertinent literature.

7.1 Reflective Capital in the Asynchronous On-line Context

It would be reasonable then at this point, and prior to reporting on the reflective wealth of the discussion that took place in the on-line forum, for the reader to anticipate a synopsis of background particulars that offer a quantitative overview of the participants' contributions in the on-line environment, alongside details of any emerging participation patterns. Let us do so.

7.1.1 Participation Details and Patterns

Volume of Participation

On the whole, a total of 24 messages (2,465 words) were posted in the on-line forum during a timescale of 16 weeks, and instead of 8 as it was originally planned. The rationale for extending the life span of the on-line project was mainly due to the fact that only 13 posts had been posted during the first six weeks, whereas there was no evidence of participation in weeks 7 and 8.

A possible explanation for the low participation levels observed might be that weeks 7 and 8 overlapped with the Christmas and New Year's celebrations, a possibility also being reinforced by the fact that the on-line discussion revived gradually after the second week of January 2005 (week 9), and following a festive post by the principal investigator, thanking participants for their contributions, whilst seeking feedback on their on-line experience, in an effort to rejuvenate discussion.

The first two messages were posted not long after the on-line forum discussion commenced (week 1), with the last post being recorded during week 16. The peak of the on-line communication was observed during weeks 2 and 14 (6 and 5 posts respectively). The line chart that follows (Figure 7.1) offers an overview of the flow of the on-line communication over time:

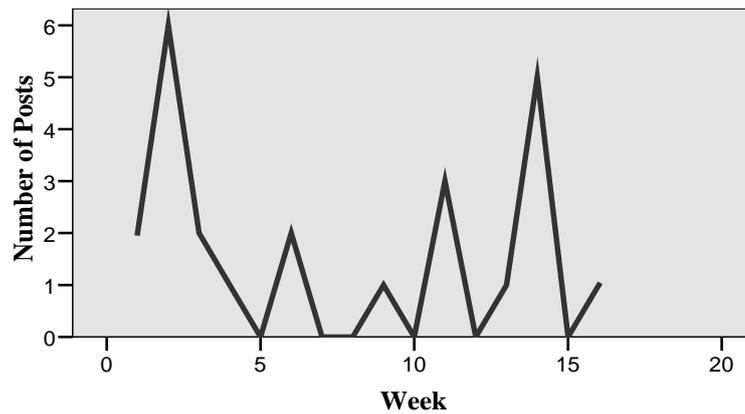


Figure 7.1 Overview of the On-line Communication over Time

Several other studies have reported on low participation levels in on-line threaded discussions (Beaudoin, 2002; Goodell and Yusko, 2005; Guzdial *et al.*, 2002; Kehoe *et al.*, 2005; Klemm and Snell, 1996; Li, 2003; Picciano, 2002). Stephens and Hartmann (2004) found that their attempts to use a voluntary asynchronous discussion forum with preservice teachers resulted in little to no participation (Paulus and Phipps, 2008:461). Similarly, Hara, Bonk, and Angeli in a 1998 study reported that online participation by students was limited to the mandatory number required by the instructor (Maurino, 2006). Hew and Cheung (2003 a, b) also found little participation by students during one week of an on-line case study discussion among a group of sixteen preservice teachers; however, few details are provided about the nature of the task, and the authors note that students were not given much structure or guidance (Paulus and Phipps, 2008:461).

On the whole, and out of the total of the on-line forum population (3 males and 3 females), only three colleagues (50%), two females and one male, participated actively in the on-line discussion (19 posts), with the remaining three participants making a total contribution of 5 posts. Table 7.1 summarizes the frequencies of contributions per participant:

Participants' ID [N.B. The names are fictional]	Gender	Frequency	%
ID 2 [Douglas]	M	7	29.2
ID 3 [Sue]	F	7	29.2
ID 7 [Mary]	F	2	8.3
ID 8 [Carol]	F	5	20.8
ID 13 [Bill]	M	2	8.3
ID 15 [Don]	M	1	4.2

Table 7.1 Frequencies of Contributions per Participant

The fact that it is technologically possible for everyone to speak in a computer mediated forum leads initially to the assumption that it is a good thing if they do, and to the measurement of a successful conference being related to the number of students who input messages (Romiszowski and Mason, 2004:398). They also go on to argue that most members of discussion forums are, most of the time, passive recipients of the messages, rather than active contributors to discussions; they are, de facto, *lurkers* (ibid., 2004:399). They explain that *lurking*, that is, passive consumption of such electronic discussions, has been the subject of much debate in CMC research; however, there is an assumption, one that has been insufficiently challenged in the research, of *lurkers* as passive recipients, rather than actively engaged in reading:

Reading cannot be assumed to be passive. Much reading, whether online or offline, can encompass active engagement, thought, even reflection on what has been read. The fact that it does not elicit an overt contribution to the discussion forum should not, as has generally been the case in CMC research, be taken to assume lack of such engagement, or of learning (ibid., 2004:340).

The sample information compiled in Table 7.2 was obtained from the on-line platform's automatic statistics function and seems to confirm Romiszowski and Mason's arguments regarding active and passive participation:

TOPIC	REPLIES	AUTHOR	VIEWS
Announcement: www.e-developmentnetwork.com Rules and Regulations	0	admin	21
Sticky: welcome to e-developmentnetwork.com	0	admin	44
Basic Skills Provision through workplace-linked tuition	0	admin	10
So...what motivates adults to learn?	2	admin	21
What is workflow learning?	0	admin	8
E-learning The 21 st Century Path to Success	0	admin	8
Blended Learning	1	admin	13
Informal Learning	0	admin	6
Mentoring	1	[Bob]	9
Mentoring in FE	2	[Shirley]	18
Evaluation as a Strategic Tool	0	admin	7
Community learning	4	admin	18

Table 7.2 Frequencies of Views and Replies per Topic in the On-line Forum

For example, with reference to the discussion topic *Mentoring in FE* (highlighted in blue), and when looking at the number of views per thread in comparison to the equivalent number of replies, the on-line forum statistics demonstrate that the thread provoked only two replies (the last one posted by participant Shirley), whilst the amount of views for the same discussion topic reached a number of 18. This is an indication that a number of participants engaged in viewing and re-viewing the posts for this discussion topic, without however posting a message.

In a similar vein, Hough *et al.* (2004), and in discussing the findings of a just over three years study investigating the use of an asynchronous web-based conference to facilitate the reflective thinking of 35 intern teachers, argue that some people perhaps were contemplating in silence (2004:360).

This debate becomes more fascinating and one that augurs much, if one considers Eraut's (1995) point of view who makes an observation of significance when he argues that 'the issue is whether or not reflection depends on making one's knowing-in-action explicit', and that 'descriptions of action play an important role in Schon's model of coaching in *Educating the Reflective Practitioner*' (1995:17).

Gender and Participation Patterns

Gender is a demographic characteristic that has been the subject of many studies in relation to computer use: according to the relevant literature, males seem to be more involved in computing, are more experienced and have more favourable attitudes towards computers than females (Kirkpatrick and Cuban, 1998; Shashaani, 1997; Whitley, 1998 in Braak, 2001:43).

According to Gregory (1997), gender differences do exist in CMC, and males tend to assume the same roles they do when communicating face to face; researchers believe male monopolization of CMC has limited female involvement (1997:3-4). Blum's research (1999) reporting on the findings of an interpretative qualitative case study found that the CMC-based environment supported a tolerance of male domination in online communication patterns, which effectively silenced female students (Romiszowski and Mason, 2004:414).

Herring claims that CMC, and in particular on-line discussions, do not provide an equal playing field for males and females, as men have dominated the technological genre, men have also comprised the majority of computer networks (Gregory, 1997:5). Using the text of interactions taking place on two different

electronic mail lists, Herring (1992, 1993) published a number of findings including that women contributed far less than the men and that the levels of participation varied according to the topic under discussion; she also found that the mean message lengths of women's postings were shorter than men's (Yates, 1997:283).

In this study, and in contradiction to Herring's findings, out of 24 posts, over half of the contributions were posted by females (58.3%), with the male population achieving just over one third of the total contributions (41.6%); in addition, no significant difference in the length of postings between females and males was observed. These findings seem to come to conformity with Fauske and Wade's research outputs (2003-2004), who found approximately equal participation levels among graduate students in an asynchronous discussion forum (Paulus and Phipps, 2008:461). The figure that follows offers a summary of the on-line posts generated in this study by means of gender:

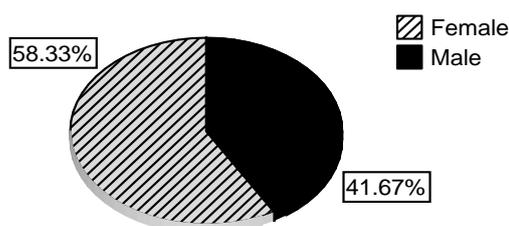


Figure 7.2 On-line Contributions by Gender

Similarly, other findings show that network heterogeneity directly influences forum participation, suggesting that membership in heterogeneous networks ensures greater non-traditional participation (McLeod *et al.*, 1999:760).

7.1.2 Evidence of *Reflexio Act*

Next, the on-line discourse was assessed for its reflective content. Quantitative content analysis was performed and the on-line posts were coded and analysed for evidence of the variable reflexivity based on the indicators defined in the 'Scheme of Indicators for Recognizing Evidence of Reflection'. The utility of the scheme and the

indicators' defining attributes, alongside the boundaries within which they operate, have already been discussed in-depth in Chapter 5 *Reflections on Developing the Scheme of Indicators for Determining Evidence of Reflection*. However, and due to the length of this thesis, I think it might be helpful if I was also to portray a snapshot of the indicators, alongside their features and boundaries, to aid the reader's understanding when contextualizing the present findings in relation to the coding analysis process, thus, making the presentation of findings more convincing, credible and transparent.

(A) Un-reflective/Other [UN-R]

- No evidence of one's articulated 'bending back' on a triggering object or a process. No evidence of an explanation/judgment being made.
- One may articulate e.g.
 - realms of thought or information processing related verbal pockets;
 - task related information;
 - passive agreement or seeking clarification;
 - social interaction.
- **At all times there is no evidence of one's articulated 'bending back' or an explanation/evaluative judgment being made (rational or non-rational).**

(B) Reflective Thinking [RT]

- Evidence of one's articulated 'bending back' on an object or a triggering event. One must articulate this 'bending back' with
 - a) a mere description, or
 - b) a more sophisticated description/explanation of the background ('what' or 'how') of the 'bending back' and/or the object/triggering event, for the purposes of putting this 'bending back' into context, or to aid another's understanding about the issue one is making reference to (e.g. one is making oneself very explicit).
- One may also ask (rhetoric) questions in the 'meaning-making' process or when seeking to make an evaluative judgment.
- **At all times there is evidence of one's articulated 'bending back' but no evidence of a 'final cause' explanation or an evaluative judgment being made.**

(C) Non-rational Interpretation [RI-AR]

- There may be evidence of one's 'bending back' on an object or a triggering event as in [RT].
- One makes a (rigid) evaluative judgment without an explanation.
- One offers an explanation and/or or an evaluative judgment with an explanation based on e.g. a value, strong opinion, personal preference, habitual action, emotions.
- **At all times there is evidence of an articulated 'final cause' explanation and/or an evaluative judgment.**

(D) Rational Interpretation [RI-R]

- There may be evidence of one's description /'bending back' on an object or a triggering event, as in [RT], and/or evidence of [RI-AR] (as part of the meaning making process), which however develops as below:
- One argues by decomposing, reframing, reconstructing the issue and/or makes an evaluative judgment with an explanation
 - a) based on cause-effect relationships, and/or
 - b) considering a wider range of factors, e.g. pedagogical terms, the wider socio-economic and political context.
- **One's arguments do no need to be intellectual.**
- **At all times there is evidence of an articulated 'final cause' explanation and/or an evaluative judgment.**

(E) Core Reflection [CR]

- One thinks outside the boundaries of the triggering object/event, probing deeply into personal knowledge/experience.
- That experience now makes sense and may be relied on for future action.
- There may be evidence of one's description of 'bending back' on an object or a triggering event, as in [RT], and/or evidence of [RI-AR] and [RI-R] (as part of the meaning making process).
- **One's arguments do no need to be intellectual.**
- **The emphasis is on the inner experience (drilling and digging), rather than just intellectual examination of the triggering object.**

The on-line episodes were coded in two modes; initially, they were coded on a two point scale to determine the reflective ‘Aspect/Mode’ of each episode (i.e. ‘1 = Un-reflective/Other’ and ‘2 = Reflexio Act’), and next they were coded on a four point scale to establish the ‘Depth’ of reflexivity achieved (i.e. ‘1 = Reflective Thinking’, ‘2 = Non-rational Interpretation’, ‘3 = Rational Interpretation’ and ‘4 = Core/Silent Reflection’).

To meet reliability standards the criterion of agreement was addressed. Holsti’s (1969:140) formula was adopted to calculate agreement and determine intercoder reliability, i.e. in cases in which two coders code the same units (which is the recommended method) this is equal to percent agreement (Kimberley, 2002:149). This statistic (CR) ranges from .00 (indicating no agreement) to 1.00 (indicating perfect agreement) (Shoemaker, 2003; Coolican, 1999) and on this occasion an inter-rater reliability statistic of 0.916 was achieved.

In sum, frequencies analysis was performed (Table 7.3) to determine the reflective aspect of the on-line episodes and revealed that the vast majority of the participants’ responses qualified for the *Reflexio Act* mode (70.8%), with almost one third of the total messages (29.2%) falling into the *Un-reflective/Other* category:

Aspect of Reflection		Frequency	%
Valid	Un-reflective/Other	7	29.2
	Reflexio Act	17	70.8

Table 7.3 Aspect of Reflection in the On-line Posts

The dichotomy between an Un-reflective/Other [UN-R] unit and a Reflexio Act [R] unit of analysis, and as it has already been exemplified when I portrayed a detailed overview of the indicators embedded in the scheme (Chapter 5), is established on one’s articulated act of ‘bending back’ on an object or process, or it may involve offering an explanation, making an interpretation, or making a judgement.

For example, in the coded piece of data which follows, participant [D] makes a contribution that was classified as ‘socializing’. The participant does not ‘bend back’ on any object of process nor offers an explanation or an evaluative judgement and, thus, there is no evidence of Reflexio Act.

D: ONF[UN-R]	Is there anybody out there ? It's a bit lonely in here 😞 Will someone talk with me 😊
-----------------------------------	--

By contrast, participant [SD] ‘bends back’ on the object of ‘community learning and ICT’, offering an analytic interpretation/explanation as for the ‘why’ learners are reluctant to use computers at first, considering a range of factors and making reference to causal relationships.

SD: ONF[R]	[I] have been involved in delivering basic skills via a community centre and I feel that learners are reluctant to use computers at first and my personal experience is that they have to first feel comfortable with the teacher and then the confidence and self belief will evolve and it is so good to witness this. I have a friend who has to take 12 laptops to a workplace each week and is developing muscles she didn't know existed! I believe that community based learning can be a more social occasion at times than at some colleges partly because of the flexibility and evidence of peer support. What do others think?
---	--

Within the *Reflexio Act* posts, over two thirds of the contributions offered evidence of *Rational Interpretation* (70.6%), whereas nearly one third of the on-line posts (29.4%) fell into the *Reflective Thinking* category (Table 7.4). Evidence of *Non-rational Interpretation* was not observed in the on-line forum discourse.

Depth of Reflection		Frequency	%	Valid %
Valid	Reflective Thinking	5	20.8	29.4
	Rational Interpretation	12	50.0	70.6
	Total	17	70.8	100.0
N/A	99	7	29.2	

Table 7.4 Depth of Reflection in the On-line Communication

Reflective Thinking [RT] is conceptualized in the Scheme of Indicators for Determining Evidence for Reflection as the act of one’s bending back on an object (a process, a belief, a philosophy), articulating a mere description of that object or posing (rhetoric) questions, seeking clarification and/or in an effort to make an interpretation or a judgment. By contrast, the units of analysis which qualify for the Rational Interpretation [RI-R] indicator involve the act of one’s offering an analytic explanation or argumentation (not necessarily intellectual) regarding the object under consideration, or an extensive analysis (decomposing, reframing, reconstructing) of the object making reference to e.g. causal relationships, or the socio-economic and political context.

For example, and in the coded piece of data below, participant [D] offers an analytic explanation with reference to the subject matter ‘what motivates adults to learn?’; he decomposes/reframes the object, making reference to causal relationships and the socio-political context, arguing for their effect on on’es motivation to learn:

D:	<p>Yes, culture comes into play here..</p> <p>If a young adult learner does not have the necessary life, social and communication skills thus lacking self belief and self esteem then they could well struggle to communicate the complexity of their thoughts as a result of lacking the confidence to do so in a proffessional and/or academic enviroment. This can lead to negative learning experiences and the potential for the student to drop out. Even dealing with the paper work and academic speak that many are confronted with on their return to education can be extremely daunting experience.</p> <p>Of course, much of the above also applies to older adult learners too but these, in some instances, may well possess the confidence learnt through experience to cope. Also, older learners may be more motivated to be in the classroom enviroment more than younger learners. This might be because the older learner wishes to treat the learning experience as much as a social as well as proffessional or educational experience.</p>
ONF[RI-R]	

Still, the seminal act of ‘reflective thinking’, as conceptualised in the framework of the equivalent indicator [RT], is not one to be taken lightly. Dewey (1933) argues that reflective thinking is valuable because it ‘converts action that is merely appetitive, blind, and impulsive into intelligent action’ (1933:17). For example, let’s consider the

following coded reflective unit, where participant [SD] bends back on the object of ‘mentoring in the workplace’:

SD:	I wonder how many teachers have had access to a named mentor in the workplace and how valuable the experience was? What do others think are the pros and cons involved, (a) for the mentor and (b) for the mentee? [Regards –SD].
ONF[RT]	

Participant [SD] does not offer an analytic explanation or an evaluative judgement with reference to the practice of having a named mentor in the workplace, attributing a value to this kind of experience. However, she bends back on this process by articulating her thoughts and posing a number of specific questions, which may assist her (or another), as Dewey argues, to transform an action that may be merely blind or impulsive (in this case the act of mentoring in the workplace) into intelligent action, leading to exceptional professional practice.

In this context, and with a slight shift of focus, that is, from identifying evidence of reflection to considering the object (scope) of reflection, the content of the preceding coded reflective units and the overall ‘Depth of Reflexivity’ observed in the on-line communication, appear also to confirm Barnett’s findings, who argues that networking technologies can foster *reflection on practice* (Barnett, 2002), as textual analysis revealed that the reflective episodes that fell into the rational interpretation category (70.6%) maintained a focus on participants’ enquiries or concerns related to everyday practice:

Last year I had a very diverse timetable and found myself teaching young adults, (16-19) and older return to learning mature adults, (45-50) The common factors found on entry were that they were hoping to gain qualifications for nursery nursing and all expressed a fear of reading out from a book to young children in the nursery. Teaching basic skills this is problem faced by many. Generally I felt that some of the younger students had behaviour problems and somehow lacked fundamental communication skills and this impaired to some degree their attitude to taking responsibility for their learning. It is difficult not to compare the two ages of learners but in this instance the older ones appeared to have the necessary social skills but because of prior negative learning experiences lacked confidence and self belief even though I believed they could succeed. The key here was that strategies have to be devised to enable students to take a responsible attitude to their learning which is diverse and ensures it is an enjoyable experience, (quite a challenge!). (Sue).

Angeli *et al.* (2003) on the other hand, in investigating preservice teachers' posts in an asynchronous forum, found that students did not engage themselves beyond surface-level discussion to the degree they questioned whether deep, meaningful discussions are even possible in asynchronous environments (Paulus and Phipps, 2008). Yet, their online discussions were open-ended rather than goal-oriented, with little incentive for deep discussion (*ibid.*), whereas the on-line forum in the present study was semi-structured, bearing triggering posts relevant to the population's professional interests in order to provoke debate.

A possible interpretation for the considerable levels of rational interpretation observed in the on-line *Reflexio Act* posts could be that the asynchronous dimension of computer mediated communication offers a distancing function as a channel for this depth of reflexivity to flow, in that it aids the practitioner to distance himself from the matter under discussion and situate himself in a position where he can get an overall sight of the event and offer a thoughtful, analytic explanation and argumentation.

McMahon (1996), in the context of the research he conducted on the PBS Mathline project where he studied the flow, frequency and volume of 393 online messages posted on a listserv, discovered that 29% of the participants posted at least one critically reflective message, and where a critically reflective message was defined as one that 'raised issues exploring underlying beliefs, motivations, and implications related to teaching and learning' (Romiszowski and Mason, 2004:413).

An interesting observation at this point would be that there was no evidence of *Non-rational interpretation* or *Core/silent reflection* and as defined in the coding scheme for assessing reflexivity. Likewise, a possible explanation might be that the mode of asynchronous communication offers adequate time for rational reasoning to develop, encouraging considered, thought out contributions (Newman *et al.*, 1995), whilst eliminating at the same time the amount of interruptions and/or emotional reactions that a synchronous mode for collaboration would allow and perhaps encourage.

Similar claims were made by Pena-Shaff *et al.* (2001) who, in examining discussions of graduate students, argued that asynchronous communication is better for critical thinking and reflection, with chat a better tool for idea-generation and feedback (Paulus and Phipps, 2008:470). Furthermore, they found that participants, although they posted opinions in the asynchronous environment, they engaged in little to no interaction (*ibid.*), and the present findings seem to come to conformity with this

argument as well, as the analysis of the on-line communication patterns revealed low participation levels in the on-line threaded discussion.

Another observation that should be made at this point is that, although the on-line participants had demonstrated largely evidence of surface reflection in the ‘pre-test’ open question of the initial questionnaire, i.e. descriptive reflection ‘DR’ and descriptive writing ‘DW’, their on-line contributions went beyond mere descriptive modes of reflexivity, as they engaged themselves in a more profound aspect of reflexivity in terms of its depth, i.e. they demonstrated evidence of reflective interpretation based on analytic explanation and argumentation:

Participant	On-line Forum Depth of reflexivity		Initial Questionnaire Depth of reflexivity
	Reflective Thinking	Rational Interpretation	
Douglas	1	2	DR
Sue	1	6	DR
Mary	1		DR
Carol	2	3	DW
Bob		1	DR

Table 7.5 Comparison of the Reflective Outcomes of the On-line Communication and the Pre-test Open question

A possible explanation might be that the initial questionnaire, and specifically the format of the open question requesting participants to offer a short response, i.e. less than a 100 words, did not offer adequate ‘space’ or ‘time’ for the participants to engage ‘in discussion with the inner self’. Still, it would be of value to remind the reader at this point that the measurement tool applied in the analysis of the ‘pre-test’ open question was primarily based on Hatton and Smith’s (1994) criteria for the ‘recognition of evidence for different types of reflective writing’, whereas the on-line discourse was assessed against the coding scheme that emerged from the analysis of the on-line and the face to face interactions, and it was grounded on the data.

Herring (1992, 1993) also found differences in the CMC practices of men and women: men were more likely to post messages on specific or focused topics and to provide specific information; women on the other hand were more likely to post on personal aspects of the discussion or to post queries to other list members (Yates, 1997:286). Wyatt (1993) as well considered the long term development of content within the discussion; he found that, though the discourse was at the outset more

‘personal’ than ‘professional’ (informational), this changed over time as the ‘interactants’, mostly women, gained confidence and developed their own specific linguistic genre for the interaction (Yates, 1997:287).

The findings of this study appear to contradict these research outputs, as out of the total of the contributions posted by females, 80% were categorised as *Reflective Thinking* and 75% as *Reflective Interpretation*, with males achieving 20% and 25% respectively:

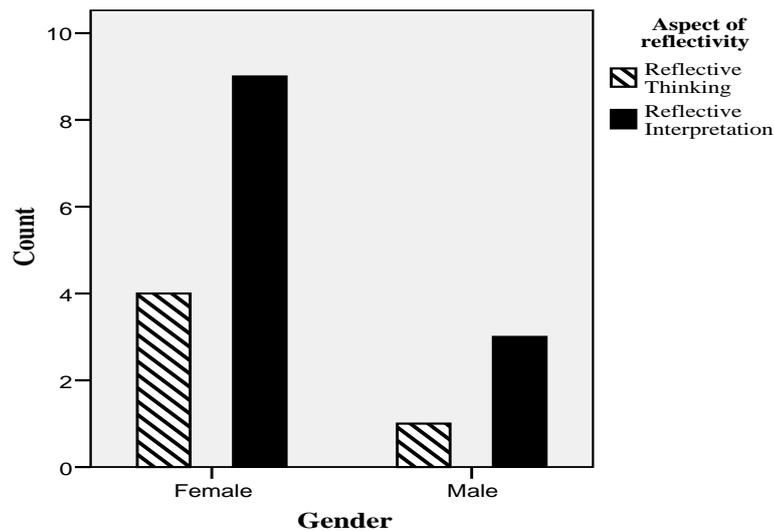


Figure 7.3 Gender and Reflection

7.2 Analysis and Synthesis

In returning now to the research questions of this thesis, the first key research question has been what aspect and depth – if any – does asynchronous computer mediated communication achieve. The content analysis of the computer mediated discourse demonstrated that reflexivity can be accomplished in an asynchronous computer mediated context, with 70.8% of the total episodes qualifying as a *Reflexio Act*, out of which 70.6% episodes demonstrated evidence of *Rational Interpretation* and 29.4% evidence of *Reflective Thinking*.

But how does it compare to the face to face discourse? I feel it is imperative that I address this second key research question, for otherwise I might become ‘blind to the accomplished interaction occurrences’ in the computer mediated context, without considering ‘similarities and differences among its occurrences across broad social

spaces' (Ragin, 1994:63), i.e. in this occasion the face to face context. I shall do so first by reporting succinctly on the reflective outcomes of the face to face discourse, and then by presenting some comparative reflections.

7.2.1 Reflective Capital in the Synchronous Face to Face Context

It was explained in Chapter 4 that the face to face discussion was audio recorded and approximately 60 minutes of recording were transcribed and analysed. In the discussion group, the principal investigator assumed the role of observer and facilitator rather than that of the moderator of the discussions.

Thematic and textual analysis of the content of the postings revealed that the majority of the incidents made reference to prior or present learning experiences (40.5%) and 32.6% reflected life experiences, with only 16.8% of the qualified *Reflection Act* posts making reference to a professional experience. Primarily the moral, ethical and political issues embedded in education and in teacher's everyday practice were observed as the object of participants' reflection:

G: You know I'm thinking back to my grandparents and my great grandparents...they didn't have the education that my father and I had but there was something you know-
S: maybe because they were more practical-
G: No it's not that...its just that...people read more and was no television...so everybody played games for instance, and that gives you social skills...and I don't know, I start talking about the same things and I can't find the words I want to use... maybe because computers and the internet has become-
C: so popular-
G: yeah, but that teaches us to be antisocial-

[Face to Face Forum Discussion Extract]

Overall, out of a total of 134 episodes recorded, 66.4% qualified as a *Reflexio Act*, with the remaining 33.6% incidents being categorised as *Un-reflective/Other*:

Aspect of Reflection		Frequency	%
Valid	Reflexio Act	89	66.4
	Un-reflective/Other	45	33.6
	Total	134	100.0

Table 7.6 Aspect of Reflection in the Face to Face Discourse

In the first coded unit of analysis below, for example, participant [C] articulates a passive agreement, whereas in the other two segments of data, participants [P] and [A] articulate realms of thoughts that compliment the principal discussant's articulations.

C: FTF[UN-R]	Absolutely.
-------------------------------	-------------

P: FTF[UN-R]	Getting lost [laughs]
-------------------------------	-----------------------

A: FTF[UN-R]	That's what people are doing on Learn Direct-
-------------------------------	---

However, participant [S], and in discussing the potential of ICTs to overcome many of the barriers which people who are socially and economically disadvantaged face in accessing education and training, offers a reflective explanation by 'bending back' on her experience, and making a reasonable judgment by decomposing the issue and making reference to a cause-effect relationship:

S: FTF[R]	Er...my experience of e-learning is that...if people don't have the relevant skills to access e-learning er..then there is a barrier straight away...so if people aren't IT literate, they don't have the computer skills...then...you know...it's a no go... it's a non start...they first got to obtain the skills in order to access the e-learning...
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Similarly, participant [A], and in discussing matters related to ‘what motivates adults to learn’, offers an interpretation by bending back on a personal experience and articulating a reasonable evaluative judgement, making reference to a cause-effect relationship:

A: FTF[R]	Courses...I have taken a health and safety course...but I think it links to the motivation side of it as well. I didn't get that much out of it, I didn't really enjoy it, because the motivation wasn't there. I was forced to do it, I didn't commit to it ...er it was learning for health and safety. It was ok, it was fine for me, I thought it was quite normal.
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In terms of the depth of reflexivity observed within the face to face *Reflexio Act* episodes, the whole gamut of the categories defined in the coding scheme for assessing reflexivity were observed; *Reflective Thinking* and *Non-rational Interpretation* qualified for 21.3% and 25.8% of the episodes respectively, whereas 48.3% instances of *Rational Interpretation* were achieved, with *Core Reflection* reaching a percentage of 4.5%:

Depth of Reflection		Frequency	%	Valid %
Valid	Reflective Thinking	19	14.2	21.3
	Non-rational Interpretation	23	17.2	25.8
	Rational Interpretation	43	32.1	48.3
	Core Reflection	4	3.0	4.5
	Total	89	66.4	100.0
Missing	Not applicable	45	33.6	
Total		134	100.0	

Table 7.7 Depth of Reflection in the Face to Face Discourse

For instance, let's consider the coded piece of data below, and in the context of a discussion about what constitutes ‘formal’ and ‘informal’ learning. Participant [A] is bending back to a triggering question posed by another participant, i.e. ‘so ok, one who manages a football team..is that informal learning?’ but he feels unable to offer an explanation or make a judgement, thus, he poses a question himself, i.e. ‘that's it...I don't know...where do you draw the line?’ in an effort to make an interpretation or

judgement. Since then no evidence of an interpretation or judgment made was observed, this reflective unit was coded as Reflective Thinking [RT].

A: FTF[RT]	{S: so ok, one who manages a football team..is that informal learning?} that's it...I don't know...where do you draw the line?
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Moving now on a different instance, the reflective unit below coded as Reflective Interpretation: Non-rational Interpretation [RI-AR], was a contribution articulated in response to another participant's question, i.e. 'Who has written a letter..literally written on the last two years on this team?' and in the context of a discussion about 'the computers and the internet teaching us to be antisocial'. One can immediately detect that participant [A] bends back on a personal experience ('I received a letter recently'), articulating a mere description of the event ('a hand written letter from a personal friend', 'letter on paper written in an ink pen'), which qualifies as evidence of a Reflexio Act. However, the participant also makes an unreasoned evaluative judgement, emphasizing more than once that 'it was wonderful', thus, attributing a value to that experience without offering an explanation or an interpretation as for the 'why' receiving that letter was wonderful:

A: FTF[RI-AR]	I received a letter recently...er..a hand written letter from a personal friend..and it was wonderful. Not even a card...letter on paper written in an ink pen. It was wonderful...
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Similarly, the example below was also coded as Non-rational Interpretation, on the grounds that, although in this instance, participant [P] offers an explanation in the context of a discussion about participants' thoughts on 'using the internet as a search engine...working on assignments', nevertheless, his justification is based on a subjective opinion, a strong personal belief:

<p>P: FTF[RI-AR]</p>	<p>The book is simple, it doesn't get it wrong. You can get a Power Point and you could lose it all ...the computer has gone up and [laughs] you had it</p>
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By contrast, and in turning into a challenging unit of analysis, the coded piece of data which follows qualified as Rational Interpretation [RI-R] or otherwise as 'first order rational interpretation', i.e. a response or an interpretation based on a justified true belief, or otherwise one which contains an objective degree of belief, a 'rational belief', versus a 'second order rational interpretation', which considers a wider scope of factors/evidence and is more sophisticated (with the distinction being made on the grounds of a reasonable constraint I placed on rationality, and as I discussed in Chapter 5).

Specifically, the participant bends back on a personal e-learning experience, explaining that for her 'it was so boring...was a bit of a nightmare because I am not a person who is...I am more of a lively person'. However, although the participant does not directly make reference to the pedagogical term 'learning styles', she clearly makes reference to a causal relationship, that of her learning experience ('boring') and her preferred way of learning ('I am more of a lively person').

Thus, it was decided that the specific reflective unit is based on both objective and subjective certainty/a justified true belief (on the grounds it is knowledge derived from something experienced) and offers a rational (i.e. consistent with or using reason, reasonable) interpretation in terms of making reference to a causal relationship, thus, qualifying as 'Rational Interpretation', despite the fact that the participant fails to articulate and/or consider a wider scope of factors/evidence, perhaps because she is still affected by her past negative experience.

<p>G: FTF[RI-R]</p>	<p>Well you know, as far as e-learning is concerned, I did try it, and the best doctrines I learnt by that...er for me personally I mean it was so boring...was a bit of a nightmare because I am not a person who is...I am more of a lively person [laughs] time –cup like, stuck by this [laughter].</p>
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An example which was also coded as Rational Interpretation [RI-R] representing a ‘second order rational interpretation’, i.e. one which represents which considers a wider scope of factors/evidence and is more sophisticated (though not necessarily intellectual) is illustrated in the coded segment of data below. Participant [S] makes a contribution in the context of the discussion topic ‘ICT has the potential to overcome many of the barriers which people who are socially and economically disadvantaged face in accessing education and training’ by articulating a rational explanation, making an evaluative judgement based on a cause-effect relationship, that is, if people don’t have the computer skills to access e-learning, then there is a barrier straight away:

<p>S:</p> <p>FTF[RI-R]</p>	<p>Er...my experience of e-learning is that...if people don’t have the relevant skills to access e-learning er..then there is a barrier straight away...so if people aren’t IT literate, they don’t have the computer skills...then...you know...it’s a no go... it’s a non start...they first got to obtain the skills in order to access the e-learning...</p>
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Last, but not least, the coded reflective unit that follows represents an illustration of the segments of data that qualified for the Core/Silent Reflection [CR] indicator, and where one thinks outside the boundaries of an episode and makes contact with deeper levels inside (deep examination of one’s being rather than just examination of external episode), with the focus being on the inner experience. In this context, participant [S] probes more deeply into personal knowledge and experience, understands, confirms and verifies that ‘confidence comes with age as well sometimes’ and ‘the outside of your comfort zone...and that takes time to get used to different environments, different individuals’. This past experience finally makes sense and can be relied on future action, with an underlying possibility of creating new knowledge:

S:	I think a lot of it have to do with er..age as well, the age of the individual...because obviously..should say that the older you are, the more confident you usually become. When I was 16 years old, I walked into a room with one person..I mean I would blush... but the way to think it is...er what I'm just saying is confidence comes with age as well sometimes you know, and obviously the outside of your comfort zone...and that takes time to get used to different environments, different individuals...so..I think a lot of this is connected and has to be taken on further I believe...
F2F[CR]	

7.2.2 Regarding Reflexivity: Some Comparative Reflections

It would of significance to make a number of comparative observations at this point. First of all, content analysis of the on-line and the face to face communication revealed that asynchronous computer mediated discourse can achieve a higher percentage of reflexivity (70.8%), in terms of its aspect, and in comparison to the face to face interaction (66.4%):

Aspect of Reflection		On-line %	Face to Face %
Valid	Reflexio Act	70.8	66.4
	Un-reflective/Other	29.2	33.6
	Total	100.0	100.0

Table 7.8 On-line and Face to Face Aspect of Reflection

In a similar study, Hawkes and Romiszowski (2001) also studied the reflective content of asynchronous CMC among 28 teachers at 10 different schools and of face-to-face interaction among these same teachers in their school-based teams (Maher and Jacob, 2006:127-150). The CMC was unstructured, not mandatory, and occurred over the same period of time as the face-to-face interaction; the study found that CMC facilitated more reflective discourse than in face-to-face interactions (ibid.).

Second, one detects that, although there was no evidence of *Non-rational Interpretation* in the on-line discourse, a statistic of 25.8% was achieved in the face to face discussion:

Depth of Reflection Face to Face Forum		Frequency	%	Valid %
Valid	Reflective Thinking	19	14.2	21.3
	Non-rational Interpretation	23	17.2	25.8
	Rational Interpretation	43	32.1	48.3
	Core Reflection	4	3.0	4.5
	Total	89	66.4	100.0
Missing	Not applicable	45	33.6	
Total		134	100.0	
Depth of Reflection On-line Forum		Frequency	%	Valid %
Valid	Rational Interpretation	12	50.0	70.6
	Reflective Thinking	5	20.8	29.4
	Total	17	70.8	100.0
Missing	99	7	29.2	
Total		24	100.0	

Table 7.9 On-line and Face to Face Depth of Reflection

A possible explanation may be found in Eraut's (1995) claim, who argues that shortage of time often forces a more automatic and probably more fallible response (1995:20). Russell's (1951) argument is instructive here:

Written words differ from spoken words in being material structures. A spoken word is a process in the physical world, having an essential time-order; a written word is a series of pieces of matter, having an essential space-order (1951:37).

Im and Lee (2003–2004), in comparing synchronous and asynchronous conversations among 40 preservice teachers, reported that synchronous environments are better suited for socializing and asynchronous ones for serious discussion; in addition, they claimed that synchronous communication does not result in 'academic' discussions, but the nature of the task was not included in the study (Paulus and Phipps, 2008:481).

At this point, I have to admit that I would tend to be sceptical about Im and Lee's arguments and for the following reasons; first of all, analysis of both the on-line and face to face discourse revealed relatively similar levels of *Un-reflective/Other* aspect of reflection at 29.2% and 33.6% respectively. Second, and with reference to the claim that 'synchronous environments are better suited for socializing and

asynchronous ones for serious discussion', although content analysis of the face to face discourse in the present study revealed evidence of *Non-rational Interpretation* at 25.8%, it also revealed evidence of *Core Reflection* (4.5%), which was not accomplished in the asynchronous communicative discourse.

These findings appear to be in line with Dinkelman's (2000) claims who, in a similar study, argues that 'it seems that the face to face forum participants were more willing to consider moral and ethical dimensions of educational and professional practice, whilst there was far more consideration of the practical concerns of teaching in the on-line discourse (2000:216). The following ample extracts from the face to face and on-line forums illustrate Dinkelman's arguments beyond doubt:

Because there was a stigma as well... that was something that er didn't affect me, because, I mean you know I was quite a shy person er and I used my humour to get out of situations... I was I was a person that mucked around at school too much, but when it came to the eleven plus I mean I failed that [laughter] I don't know how badly I failed it, so from an early age the class is a failure and that's a good reason why I thought they scraped it [Face to Face Forum post: S].

Last year I had a very diverse timetable and found myself teaching young adults, (16-19) and older return to learning mature adults, (45-50) The common factors found on entry were that they were hoping to gain qualifications for nursery nursing and all expressed a fear of reading out from a book to young children in the nursery. Teaching basic skills this is problem faced by many. Generally I felt that some of the younger students had behaviour problems and somehow lacked fundamental communication skills and this impaired to some degree their attitude to taking responsibility for their learning. ... The key here was that strategies have to be devised to enable students to take a responsible attitude to their learning which is diverse and ensures it is an enjoyable experience, (quite a challenge!). What are other members experiences of working with various age groups and how to improve motivation? [On-line Forum post: C].

In addition, the on-line discourse achieved a considerable amount of *Rational Interpretation* that reached a scale of 70.6%, with the face to face communication achieving 48.3%. In this context, the findings of this study appear to support previous research (Chidambaram, 1996) which showed that virtual groups tend to be more task oriented and exchange less social-emotional information (Romiszowski and Mason, 2004:407):

I am currently working with blended learning materials with a group of professions working on a Leadership and Management qualification. The information is useful, especially for distance learning purposes. This course is delivered through W. University and the blended learning materials are available both on-line and through CD roms. There has been a problem with the CD Roms and this can cause a loss of confidence with those who are using them. Nevertheless, they seem to be popular and a very good way of sending out qualities of information. regards -C. [On-line Forum post].

To this end, Harasim *et al.* (1985) and Mason and Kaye (1989) suggest that, if participants are engaged in writing, rather than talking, they are able to attain a higher level of analysis of ideas, and there are a number of reasons why this might be the case:

Students have more time to think about the responses; they are able to engage with developing arguments; they have time to follow up references and read literature, so that responses can be more detailed and argumentative; more of the group are able to participate in interactions; contributions can be seen as being more objective and anonymous; there is a group record of the debate that can be used as an accurate reference at a later date (Motteram and Teague, 2000:3).

As Wegerif (1998) puts it, ‘the benefits of taking part in collaborative learning (via CMC) were derived from taking part in a developing conversation where many of the replies were much more considered than might have been the case had the same people talked together over several hours (1998:13). The following extract obtained from the face to face forum appears to confirm Wegerif’s arguments regarding the weakness of synchronous communication to encourage considered responses:

I suppose, you can prioritise things in that way er...but saying that...let’s say hot and cool water, now, they may need to have experience and expertise to fill water in the system. If there is an ICT system to place all of these things or whatever you can, get the information from them ... so I think its still a good thing, but I can understand what you are saying, you know, so, well I mean... it is not something that I have personally liked, but I know that I have to learn it, because it’s for my benefit, its for everybody’s benefit, although like I said two or three times tonight, there are disadvantages as well, there have been problems...but I think that the positives are more...definitely...[Face to Face Forum Post: S].

In this sense, Wegerif's argument could also be an explanation for the sum of *Non-rational Interpretation* incidents observed in the face to face discourse (25.8%), which were not observed in the on-line interactions. Newman *et al.* (1996) present a similar point of view when they argue that 'face-to-face discussions in educational contexts are often designed to be, or can become, monologues, with silence filled by the teacher, or an exchange of unjustified opinions (1996:25). Similarly, Newman *et al.* (1997), in explaining that an asynchronous computer conferencing environment encourages considered, thoughtful contributions, declare that a statement of opinion in a face-to-face discussion becomes an evidentially justified point in a computer conference message (1997:68).

In agreement with Wegerif and Newman *et al.*'s arguments, Ellis (2001), and in discussing differences between face to face and on-line communication, coins the terms 'nature of response-immediate versus more considered response', i.e. the asynchronous nature of online forums lacks the immediacy of conversation, yet has the advantage of allowing a more considered response (2001:172).

7.2.3 Other Comparative Reflections

Regarding Interaction and Participation Patterns

Wegerif (1998) argues that Lave and Wenger' account of how someone is drawn into full participation depends upon a high degree of interactivity (1998:34). Of course, my concern with Wegerif's argument is the meaning he assigns to the term 'full participation' and consequently the interplay between 'full participation' and 'high degree of interactivity' he implies. Could it be that one is drawn to 'full participation', i.e. participating actively in a discussion forum in terms of the quantity of the messages he posts, without though 'participating fully' in terms of learning and/or reflexivity (e.g. socializing, seeking information or teaching materials)? For one should bear in mind that the pertinent issue in this study has been to examine the reflexive dimension of the computer mediated discourse, and not merely the levels of participation it can accomplish, and in comparison to face to communication.

The rationale for my concern is also grounded on the findings of the present empirical investigation, i.e. in the present study, the on-line forum was indeed less interactive than the face to face one; however, content analysis of the discourse that occurred in the on-line and face to face forums demonstrated that, although the on-line

communication was less interactive, it was evidently more reflective (70.8%), in terms of the aspect of reflexivity, and in comparison to the face to face discourse (66.4%). Could it be then that other factors come into play, such as access, motivation, confidence and personal learning styles or communication preferences, which may affect the volume of interaction and participation patterns? I argue more extensively that this could surely be the case, and on the grounds of the outcomes of the analysis of the present research findings, discussed at length in the following chapter (Chapter 8).

Similarly, Mason (1992) and later Webb *et al.* (1994) note a natural tendency to measure that which is most easily measurable has mistaken activity for learning, interaction for collaboration (Webb *et al.*, 1994:329). Hawkes and Romiszowski (2001), as well, draw caution in this matter, when they argue that ‘talking, sharing, exploring, and analysing are important interactions in sense making and, by themselves, constitute key components in the critical reflection process; reflection is distinct from interaction, however, in that it requires a certain amount of self-disclosure about professional beliefs and practice’ (2001:297).

Pena-Shaff *et al.* (2001) findings suggest that the BBS (Bulletin Board System) maybe a useful tool for promoting critical thinking skills and reflective thought, although strategies need to be designed to increase students’ interactions:

Most of the discussions in the BBS environment were well structured and developed. However, very few students had what can be considered genuine interactions with peers. The postings on the BBS resembled private arguments and analyses about an issue posted to a public bulletin board. In contrast, the IRC discussions showed more collaboration, social interaction and conflict. However, students spent more time socializing than focusing on the task at hand (2001:41).

In line with the research findings of the present study, Romiszowski and Mason (2004) also found that the group interaction patterns in the computer conference were more complex and more similar to problem-solving processes than those in the F2F meetings (2004:407). They also found that the language of the face to face forum was more informal; concerning syntactic complexity, the delayed nature of asynchronous discussions gives learners more opportunities to produce syntactically complex language and, to this end, Sotillo concludes that asynchronous and synchronous CMC

have different discourse features which may be exploited for different pedagogical purposes (Romiszowski and Mason, 2004:406).

Joinson (2001), in examining self-disclosure in computer mediated communication, presents evidence that supports Walther's notion of CMC as being more 'social' than face to face interaction (2001:188). Other studies however, describe on-line discussions as less personal than face-to-face discussions (Vonderwell, 2003), perfunctory (Goodell and Yusko, 2005), less interactive and lacking in speed, spontaneity and energy (Goodell and Yusko, 2005; Hawkes and Romiszowski, 2001; Meyer, 2003 in Romiszowski and Mason, 2004:407). The findings of the present study, and in contradiction to Joinson's results, appear to come to conformity with the latter findings as research analysis indicated relatively similar levels of *Un-reflective/Other* episodes, with the face to face discourse achieving 33.6%, whereas the on-line communication reached a percentage of 29.2%.

In addition, another comparative observation of interest that should be raised was the lack of conversation and dialogue similar to the one observed in the face to face forum; that is, the on-line forum posts did not build on previous messages and 'there did not seem to be a sense of reaching a conclusion about the discussion as a group, or a sense of group consensus'; Ellis (2001), although he reports on findings of on-line discussions with no fixed length of time to run specified, has also made similar observations:

While discussion forums were started on a specific date, no fixed length of time for a discussion to run was specified, and only limited summing up was done. This caused a "petering out" of discussion. Three changes might have achieved better consensus; a fixed length of time for the discussion to run, better summing up during the forum and having students work in small groups online to present a group comment (2001:3).

To this end, Fedler (1999), and in discussing the concept of conversation, argues convincingly of the significance of non-verbal cues in human communication and the need for cooperation amongst participants, acting as partners, in order for a conversation dependant on connected marks or utterances to be sustained:

Obviously, conversation is something that occurs among or between people. There needs to be at least 2 people involved, and there must be some exchange of words in the form of dialogue. This is not to say that all exchange must be verbal: clearly non-verbal cues play an important part in human communication. When I refer to conversation as an exchange, I do not mean to evoke a conduit metaphor for communication in which words are the intermediaries between people that result in the transfer of thoughts, knowledge, or feelings (Reddy, 1979).

Not all verbal exchanges among or between people are conversations. People engaged in conversation are not merely spouting unconnected remarks through turn-taking. Conversation suggests a connection that is sustained or sustainable and goes beyond chit-chat or chatter. There should be an exchange of views, a dialogue (Fenves, 1993), that consists of connected remarks in which the 'contributions of the participants should be dovetailed [and] mutually dependent' (Grice, 1975:47]. For conversation to consist of connected remarks or utterances there must be cooperation among the participants – they must be partners (Buchmann, 1983) (1999:131).

Hawkes and Romiszowski (2001) explain that research by Feldman and others (Hollingsworth, 1994; Cochran-Smith and Lytle, 1993) have also illustrated the importance of dialogue in the development of teacher communities: collaborative conversation encourages relational knowledge that links what teachers learn and understand about their practice to other conditions that impact student learning such as family influences and the educational setting; perhaps more important, collaborative settings are the likely contexts in which critically reflective exchanges about learning and instruction can take place between teachers (2001:276-287).

Regarding Time and Reflexivity

The differences in the depth of reflexivity observed in the asynchronous and the face to face context, with the former achieving high scores of *Rational Interpretation* (70.6%), may also be justified by taking into account the time dimension. Although Schon appears to fail to appreciate the significance of the *time* variable in understanding professional behaviour, i.e. when he suggests a rapid intuitive process with little pause for thought, while the description of critical questioning suggests a more prolonged, deliberate process, Eraut (1995) presents a point of view of significance by challenging Schon's arguments in this context (1995:14).

Specifically, Eraut (1995) argues convincingly that *time* limits the scope for reflection-in-action, little analysis is possible without deliberation, and that this requires more time than professionals have available; the concept does, therefore needs reframing, as ‘reflection-in-action, he argues, is essentially a metacognitive process (Day, 1995:3). Learners can elaborate their contributions without interruptions from co-present peers, which may suggest writing longer and more elaborated messages (Kern, 1995; Quinn, Mehan, Levin and Black, 1983 in Weinberger and Fischer, 2006:78).

Typically, production blocking occurs in FtF groups and with larger group sizes (Gallupe, Cooper, & Gris , 1994) because members are forced to speak sequentially; thus, the time to evaluate each other’s opinion is limited (Diehl & Stroebe, 1987 in Lowry *et al.*, 2006:636). A rapid intuitive process is not the same as a slower, more deliberate, process (Eraut, 1995:9); Eraut (1995) has been examining the effect of the time available for thinking on the mode of cognition (i.e. the diagram below uses the phrase ‘monitored by reflection’ to describe the metacognitive process) and which he represents in the figure below:

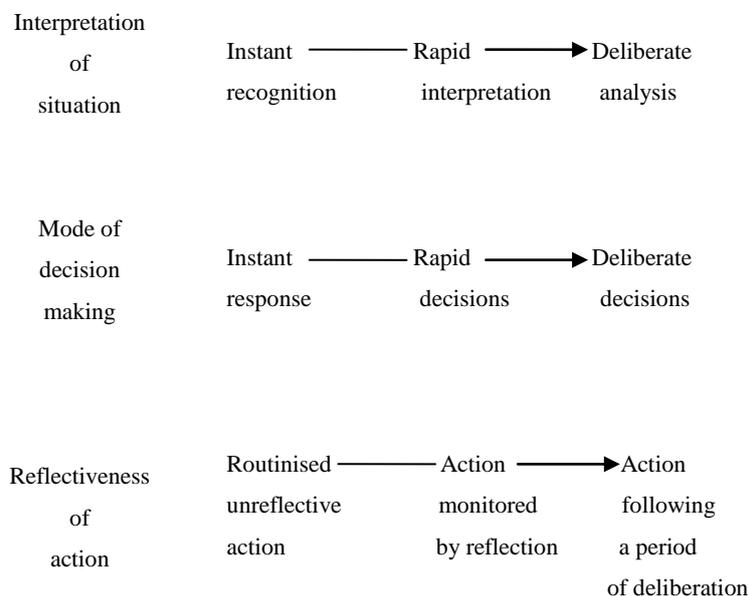


Figure 7.4 The Effect of Speed on Mode Cognition in 3 Professional Processes (Eraut, 1995)

This time-based model, he argues, explains that little analysis is possible without deliberation, and deliberation requires time, more time than most professionals can make available in quantity; most decisions have to be made either so rapidly that they have to be purely intuitive or under circumstances which dictate fast deliberation with a limited degree of analysis (Eraut, 1995:20). Rapid intuitive responses are based on an ability to retrieve similar cases from memory and to use that prior experience for making quick decisions (ibid.).

Regarding the Object of Reflection

In examining the object of reflection in the discourse occurred in the two forums (Table 7.10), one notices that reflective comments in the face to face forum primarily concerned an individual's own learning, particular teaching situations, or individual strengths and weaknesses (Sharpe and Bailey, 1999:181), and a considerable amount of life experiences sharing (32.6%), the latter not being evident in the on-line discourse:

But you'll have the opportunity, the chance to actually work and achieve and er ... a er a certain grade, so you automatically pass the exam, so you don't have to sit the exam...and *that* was actually was perfect for me, because I am one of those people you put an exam paper in front of me and I know the answers but my brain just goes *PUH*, shut down [laughter] [Face to Face Forum post: G].

Object of Reflection	Face to Face Forum	On-line Forum
Prior/Present Learning Experience	40.5	17.6
Life Experience	32.6	—
Professional Experience	16.8	76.5
Other	10.1	5.9

Table 7.10 Object of Reflection in the On-line and Face to Face Forums

These findings seem to confirm previous research findings, which demonstrate that the objects of reflection in the face to face setting seem to be primarily the moral, ethical, political, and instrumental issues embedded in teacher's everyday thinking and practice (*Core Reflection*, 4.5%), an approach which sees reflection as critical inquiry,

and advocated by such authors as Zeichner (1983) and Carr and Kemmis (1986) (Korthagen and Wubbels, 1995:52):

This growth and sharing of understanding, what Hollingsworth calls relational knowledge, and which ‘becomes clarified in action’ (1994:78), came about through the sharing of their experiences, their reflection upon them, and by tying them to the political and social structures of their educational situations through a research model that typifies conversational methodology (Feldman, 1999:129).

In reflecting on the content of the discourse accomplished in both forums, my thoughts have been that the face to face communication encouraged participants to tell a story, their stories:

To be honest the most time I’ve been in the forces, I served with the navy and the marines, I did a marines course, but er... I played sport most of the time. I had a really cushy time me like. (laughs) So I did some coaching qualifications but academically I didn’t do anything. No. I left school. Two days after I left school I was in the forces. See me coming, ‘75, and er I didn’t do any qualifications, sorry academic qualifications till I left the forces er I had that many injuries through time in the time in the forces er doing a bit in sports with other things as well. er I thought it would be a good idea, very good idea to go into...to get certain teaching qualifications and, er and obviously coaching as well, but, that wasn’t...that’s another force to me, I even knew which avenue I was gonna go down, and er sports....but er I knew I needed qualifications so .. was it forced for me to do that...why... was it motivation? or was it because I wanted them qualifications just to have a bit more experience or ... was something I mentioned earlier about finances... you know, ... because of the old spondoolies [Face to face Forum: S].

Stories are emotionally and symbolically charged narratives that do not present information or facts, but serve to enrich and infuse facts with meaning (Gabriel, 2000), including social and political meaning (Gray, 2006:10). In other words, the face to face forum practitioners engaged in a reflective dialogue through storytelling, which is currently described in teaching as one of many forms of representation of experience (Eisner, 1988), and as the ways in which teachers make meaning of their lives (Connelly and Clandinin, 1990, 1994):

But story in teaching also fosters the development of conceptual understanding...These texts illuminate what Clandinin (1992) calls 'personal practical knowledge', knowledge that is socially constructed...through story teachers come to understand the foundation of reason and judgement underlying pedagogical actions. The processes of interpretation, along with reflection and transformation, characterize this storied mode of knowing (Grant, 1995:88).

In a similar vein, Gray (2006) argues that storytelling is a powerful means by which we can seek to explore and understand our own values, ideas and norms (Gold and Holman, 2001) and It can help us to create order out of a chaotic world (Bolton, 2001) (2006:9). Storytelling can be useful to stimulate interest and discussion and the story itself can provide a platform for cognitive rehearsal of analytical skills (Bogossian, 2005:91).

I feel that the absence of the 'collaborative conversation' and 'storytelling' elements in the electronic discourse, and which were very much evident in the face to face context, played a pivotal role in the lack of *Core Reflection* outcomes in the on-line conferencing. Textual analysis of the on-line discourse revealed that 76.5% of the *Reflexio Act* posts had a focus on professional experience, with only 17.6% of the incidents making reference to an individual learning experience, whilst the majority of the *Reflexio Act* posts in the face to face forum primarily concerned an individual's own learning (40.5%), with 32.6% of the incidents making reference to a personal life experience (the latter not being evident in the on-line discourse). It would appear then, and in the context of the present study, that when the focus of reflection relates to the individual's own learning and life experiences, collaborative conversation and storytelling is encouraged and evidence of *Core Reflection* is observed.

It would be of relevance to quote Grant (1995) at this point who has argued for a link between storytelling and one form of teacher reflection, claiming that dialogue can make judgements apparent (Gitlin, 1990) as teller and listener work together to understand the story (Grant, 1995:89). I wish to expand on Grant's thoughts and argue that storytelling leads to a shift from ownership of reflection to a collective dimension of reflexivity within the professional forum, which leads in turn to a constructivist mode of CPD; in other words, reflexivity becomes a collaborative venture within a learning community.

7.3 Concluding Remarks

This chapter has reported on the findings of the empirical investigation by analysing and discussing the research findings within the context of addressing the first two pertinent research questions of this study, that is, a) can reflexivity be accomplished in an asynchronous computer mediated communication context, and if yes, what aspects and depth does asynchronous computer mediated discourse achieve, and b) how does it compare with the traditional face to face communication?

To address these core research questions, first, I reported on the reflexivity observed in the on-line discourse by analysing both its aspect and depth. Next, I examined the reflective outcomes achieved in the computer mediated discourse by comparison to the reflective outcomes observed in the face to face setting; last, I raised some comparative reflections in the context of the pertinent research findings and by drawing upon the pertinent literature.

However, if there are differences in the quality of reflection between the face to face and the online forums, as well as differences in quantity, the relevance of face to face evidence in the epistemology of the online forum practice becomes challenging; the most evident dissimilarity in some cases is the presence of another person, that is the other person matters, in that, talking to someone in a face to face setting might not elicit a reflective conversation of a similar type to that in an online forum setting (Eraut, 1995:17).

What are the contextual factors then that play an instrumental role in encouraging or hindering reflective outcomes in an asynchronous electronic communication? The following chapter (Chapter 8) addresses this third prominent research question in the context of the present empirical investigation by reporting on the collection and analysis of the empirical data obtained by means of utilizing the tools of *questionnaires* and *telephone interviews*, followed by discussion of the research findings and drawing upon the pertinent literature.

Chapter 8

The Impact of Context: Supports and Constraints of Reflexivity in Electronic Communication

8.0 Introduction

The pertinent enquiry throughout this thesis has been whether, and if yes, how reflexivity may be promoted in an asynchronous computer mediated context by comparison with traditional face to face discourse. In the preceding chapter, it was illustrated that content analysis of the computer mediated interactions revealed that higher levels of reflexivity can be accomplished in the discourse that occurred in the on-line forum (70.8%), and in comparison with the face to face discourse (66.4%), with 70.8% of the total episodes qualifying as a *Reflexio Act*, out of which 70.6% demonstrated evidence of *Rational Interpretation* and 29.4% qualified as *Reflective Thinking*.

This chapter addresses the third key research question of this thesis by examining the contextual factors that may encourage or hinder reflexivity in an asynchronous computer mediated setting. I will do so by analysing the data gathered through the *On-line Forum Evaluation Questionnaire* and the telephone interviews conducted, followed by discussion of the research findings. Ample quotes from participants' responses will be highlighted, alongside relevant literature in order to illuminate theory with practice. Let us do so.

8.1 Research Findings

It is widely thought that electronic technology offers new means of enhancing on-line interaction, bringing participants at a distance into communication with each other (Rimmershaw, 1999); the findings of other studies, however, suggest that specific factors associated with electronic conferencing technologies may present identifiable barriers to this social process (Greig *et al.*, 2002:26).

According to Tu (200b), analysis of the literature reveals that CMC systems enhance *and* inhibit on-line interaction, and the user's perceptions and the attributes of CMC that enhance interactions must both be examined (Tu, 2000b:39). Studies generally have shown that students have favourable reactions to their experiences with electronic discussions (Tiene, 2000:371). A number of studies also suggest that, for effective collaboration to take place, CMC users must a) see themselves as individuals with knowledge and experience worth sharing with others, b) value the idea of collaboration with others, and c) be reasonably confident of their ability to use this technology in the course of their further learning (Greig *et al.*, 2002:36).

In this study, an *On-line Forum Evaluation Questionnaire* was employed and two telephone interviews were conducted for the purposes of recording and appraising the participants' experience in utilizing the on-line forum.

8.1.1 The On-line Forum Evaluation Questionnaire

Specifically, the *On-line Forum Evaluation Questionnaire* (Appendix XVII) was employed to gather information regarding a) the contextual factors that encouraged or hindered participants' involvement in the on-line forum, and b) their perceptions of its effectiveness and overall value in the context of their continuing professional development. The evaluation questionnaire utilized in this study was adapted by the work of Anderson and Kanuka (1997) and Phares (1999) and it consisted of 30 closed questions (Parts A, B, and C) and one open ended question (Part D).

Part A of the questionnaire (Items 1-9) aimed to obtain participants' views about the 'complexity' of using the on-line forum. According to Romiszowski and Mason (2004), technological issues, such as system and interface design, and speed of message transmission, have been known for many years to influence CMC use

(Collins and Bostock, 1993; Perrolle, 1991; Porter, 1993); bearing this in mind, the technology should be transparent, so that the learner is most conscious of the content of the communication, not the equipment (2004:397).

Part B (Items 10-15) of the questionnaire aimed to gather feedback regarding the 'content and structure' of the on-line forum, and Part C (Items 16-30) intended to obtain participants' views on the perceived 'value' of the on-line forum. The last section of the questionnaire (Part D) intended to obtain participants' suggestions for possible improvements, in order to advise the development and structure of future on-line forums, specifically seeking to establish the factors that would hinder or encourage colleagues from participating actively in an asynchronous computer mediated setting, in the context of their CPD.

I had hoped for a high response rate from the on-line forum participants but, despite my email reminders for completing the evaluation form, eventually only six questionnaires were returned; four colleagues forwarded the evaluation questionnaire as an email attachment, whilst the other two were returned by post.

Analysis of Responses to the Closed Items and Findings

All responses were coded and entered in an SPSS file, and analysed to generate the average mean response for each questionnaire item (N=30). Content analysis of the participants' responses was performed and the full results are also illustrated in Appendix XXII.

In the context of assessing the complexity of using the on-line forum (Part A), the first statement queried whether participants thought it was relatively easy to access the on-line forum; the mean rating of 1.5 indicated that most participants agreed with this statement. They also found that they did not have to learn any additional technical skills to access the forum, as three participants indicated they agreed or strongly agreed with item 2 (mean 2.5). All respondents found the project background information provided in the Notes & Glossary Sheet useful (item 3, mean 1.8), however, there were three responses that indicated there were times when they could not 'get on-line' and access the on-line forum (item 4, mean 3).

On the whole, the participants declared they had no trouble navigating in the on-line forum (mean 2.1) and they found the procedure for posting comments relatively easy (mean 1.6). The majority of responses indicated that they did not find reading

people's posts on the computer screen difficult, with only one participant thinking otherwise (item 7, mean 3.3); in addition, they declared they did not find the technical procedures they had to follow in order to register, log-in and post messages in the on-line forum confusing (item 8, mean 3.8). The mean rating of 2.3 to the statement 'the technical support feature in the on-line forum was helpful' (item 9) indicates that all participants agreed that this technical support feature was helpful.

Average Ratings on the Questionnaire Items 1-10 (Part A)	Mean
<i>1= strongly agree 2= agree 3= neutral 4= disagree 5= strongly disagree</i>	
1. I thought it was relatively easy to access the on-line forum.	1.5
2. I did not have to learn any additional technical skills to access the on-line forum.	2.5
3. The project background information provided in the Notes & Glossary Sheet was useful.	1.8
4. There were times when I could not 'get on-line' and access the on-line forum.	3
5. I had no trouble navigating in the on-line forum.	2.1
6. I found the procedure for posting comments relatively easy.	1.6
7. I found reading people's posts on the computer screen difficult.	3.3
8. The technical procedures I had to follow in order to register, log-in and post messages in the on-line forum were confusing.	3.8
9. The technical support feature in the on-line forum was helpful.	2.3
10. I liked the way the on-line forum was structured.	2

Table 8.1 Average Ratings on the Questionnaire Items 1-10 (Part A)

Part B (items 10-15) aimed to gather feedback regarding the 'content and structure' of the on-line forum. All six questionnaire responses to item 10 indicated that participants liked the way the on-line forum was structured (mean 2), with only one colleague responding that 'when selected certain links I got lost' (item 11, mean 3.5).

Average Ratings on the Questionnaire Items 11-15 (Part B)	Mean
<i>1= strongly agree 2= agree 3= neutral 4= disagree 5= strongly disagree</i>	
11. I found when I selected certain links I got lost.	3.5
12. I found the suggested topics for discussion interesting.	1.6
13. The information presented was well organized.	2.1
14. The information presented was not comprehensive enough.	3.6
15. The presence of an on-line moderator would have been useful to help the conversation move forward.	2.6

Table 8.2 Average Ratings on the Questionnaire Items 11-15 (Part B)

However, they all found the suggested topics for discussion interesting (mean 1.6), and they thought that the information presented was well organized (mean 2.1) and comprehensive (mean 3.6) (items 12, 13 and 14 respectively). The responses to item 15 raise a result of significance to the findings of this study, as the mean score of 2.6 indicates that the on-line forum participants thought that the presence of an on-line moderator would have been useful to help the conversation move forward.

Part C of the questionnaire (items 16-30) intended to obtain participants' perceived 'value' of the on-line forum. Six out of six responses to item 16 were very encouraging as participants indicated that the opportunity to try the on-line forum was beneficial. It would be interesting to note that the vast majority of the participants responded that they preferred the on-line forum to a face to face forum because they missed less time from work, with only one colleague thinking otherwise (item 17, mean 2.8). 'To participate in the forum, I learned skills that will be useful in other parts of my work' (item 18) was a statement that also attracted an outsized positive agreement (mean 2).

To the statement 'Getting to know and talking with other participants was easier with the on-line forum than what would have been in a face to face forum' (item 19), a mean score of 3.1 indicates that the group was uncertain, as most replies also tended to agree with item 20 'It was more difficult to socialize with other participants on-line than in a face to face forum' (mean 2.6).

Average Ratings on the Questionnaire Items 16-30 (Part C) <i>1= strongly agree 2= agree 3= neutral 4= disagree 5= strongly disagree</i>	Mean
16. The opportunity to try this on-line forum was beneficial.	2
17. I preferred the on-line forum to a face to face forum because I missed less time from work.	2.8
18. To participate in the forum, I learned skills that will be useful in other parts of my work.	2
19. Getting to know and talking with other participants was easier with the on-line forum than what would have been in a face to face forum.	3.1
20. It was more difficult to socialize with other participants on-line than in a face to face forum.	2.6
21. The information exchanged during the on-line forum was of better value than what would have occurred in a face to face forum.	2.8
22. Participating in this on-line forum was a waste of my time.	4
23. I thought participating in the on-line forum was a useful activity as part of my continuing professional development.	1.6
24. I have found the on-line forum helpful in getting to know my fellow colleagues.	2.8
25. I would guess that the participants in the on-line forum found my posts useful and/or interesting.	2.5
26. I found other participants' posts useful and/or interesting.	1.6
27. I felt I was part of a community when I participated in the forum.	2.8
28. Using emerging learning technologies, such as this on-line forum, is important to me personally.	2.3
29. I personally do not like learning from technologies such as this on-line forum.	3.5
30. My overall feeling is that on-line forums are of little value.	4

Table 8.3 Average Ratings on the Questionnaire Items 16-30 (Part C)

The average responses to item 21 (mean 2.8) point out that participants were also unsure about whether ‘the information exchanged during the on-line forum was of better value than what would have occurred in a face to face forum’; however, they all concurred that participating in this on-line forum was not a waste of their time (item 22), agreeing that participating in the on-line forum was a useful activity as part of their continuing professional development (item 23), with two participants strongly agreeing with this statement (mean 1.6).

With reference to item 24, a mean score of 2.8 indicates that the participants were unsure of whether they found the on-line forum helpful in getting to know their fellow colleagues; in addition, they were uncertain about whether the participants in the on-line forum found their posts useful and/or interesting (mean 2.5). However, they all agreed with item 26, i.e. they found other participants’ posts useful and/or interesting (mean 1.6). Item 27 was another statement that highlighted participants’

uncertainty about whether they felt they were part of a community or not, as three out of the six respondents were 'neutral' about this questionnaire item, with the total responses reaching an average rating of 2.8.

Three participants agreed that 'using emerging learning technologies, such as this on-line forum, is important to me personally' (item 28), with the other three feeling 'neutral' about this statement (mean 2.3). Finally, whereas only one participant agreed with the statement 'I personally do not like learning from technologies such as this on-line forum' (mean 3.5), all six responses disagreed with item 30, i.e., that on-line forums are of little value (mean 4).

Analysis of Responses to the Open Question and Findings

The open ended question was the last part of the questionnaire (Part D), and it intended to obtain participants' recommendations for improvements, in order to advise the development and structure of future on-line forums, seeking to establish participants' views about the factors that would hinder or encourage them from participating actively in an on-line forum. All responses were transcribed and textual analysis was performed. Out of the six questionnaires returned, one participant did not log any comments to this section and for unknown reasons. The overall received responses to this questionnaire item are summarized below.

Technology and *time* constraints were the two pertinent factors that participants referred to in four responses. One response stated that *discussions flow easier in a face to face setting*, whilst two made reference to the hindering factor of *non-participation by others*:

The unfamiliarity of using the tools gets in the way at least at first; more space to practice and to develop familiarity and skills the better it will work. Sometimes it is hard for the discussion to get going and flow as if might do in a face to face setting. People tend not to participate in online discussion. So need to work at it a bit more to make it work. [A].

One participant declared her *perceptions* about the purpose and function of the on-line forum by referring to the plethora of free web based resources available, which are less time consuming than accessing an on-line forum, indicating that she would be more likely to participate actively in an on-line forum when she would be in need of teaching resources or support from peers:

The reasons for my non-participation would be the availability of other on-line resources and the fact forums can sometimes be time consuming. I am more likely to use an on-line forum when I am full time teaching and need information and support. [S].

Leonard and DeLacey's (2002) argument is instructive here when they argue that successfully constructed and preserved on-line communities consist of members that have a compelling reason to visit such a community on-line:

Communities constitute the most ancient of learning situations, yet educators are struggling with how to exploit the potential of on-line groups for learning. Communities of practice would seem to offer a natural venue for the promulgation of knowledge, but recent experience indicates that they are very difficult to artificially construct and keep running. It is clear that members would have to have a compelling reason to visit such communities online. As Byron Reeves noted: "most vibrant long-lived online communities are the ones in which we have a deep personal interest (2002:2).

'Badly set up discussions', 'confusing-conflicting information' and 'non-participation by others' were also mentioned as key hindering factors by another participant, who, in referring to a past learning experience, stated that he was happy participating in that specific on-line forum because he 'found it interesting, informative and rewarding':

I participated once in an online discussion based in America and therefore I had no choice but to participate online. I was happy with this because I found it interesting, informative and rewarding. Factors that would hinder my participation would be badly set up discussions, non participation by others and confusing or conflicting information. [J].

Pachler and Daly (2006) argue that more experienced users of electronic learning environments bring a history of expectation which affects their participation by conditioning their roles within the group, which itself is viewed as an ‘information micro-economy’:

Those who had prior experience engaged in terms of frequent presence online and confidence in using a wider range of technical facilities, but their responses reveal that they had more predetermined ideas about what could be gained (or not gained) from the environment and from fellow learners. These preconceptions were harder to shift than those different ones held by ‘novices’, if the experienced users were to overcome what they admitted to being somewhat ‘cynical’ views of the efficacy of online contexts for learning (Pachler and Daly, 2006:65).

Interestingly enough, another participant explained that she liked ‘the opportunity to *think / reflect* in discussions’ because ‘in this *faceless* environment you can look deeper into yourself, and others, before you respond and at a time to suit!’. She also made reference to her preferred learning style explaining that ‘the discussion board was well suited to my style of development as I can go back later and catch ideas I missed’. Last, but not least, reference was made to the value of developing an on-line community (OLC), when one participant stated ‘it would be great if a small community could be formed to help each other within their respective roles in the workplace’.

8.1.2 Telephone Interviews

In addition to the analysis of the *Evaluation Questionnaire* responses, I had hoped to carry out in-depth face to face interviews with at least seven of the participants who collaborated on-line; however, I was unable to do so, as most of them were unavailable due to work and/or time restrictions. Still, two colleagues agreed to provide feedback on their on-line experience through a telephone conversation (again due to time constrictions), and ultimately two telephone interviews were conducted.

The format of the telephone interviews was semi-structured, as a pre-determined set of questions was employed to guide the conversation, allowing for scope for ideas to develop as they occurred. The questions addressed were in principle guided by the

content of the evaluation questionnaire, whilst taking into consideration Kvale's (1996) quality criteria for an interview (retrieved from Bryman, 2004), i.e. the *nine different kinds of question* and the *list of qualification criteria of an interviewer* (Appendix XVIII).

The aim of the telephone interviews was to explore issues around the individuals' on-line involvement, such as their perceived effectiveness of the on-line experience in relation to their professional development, alongside recommendations for improvements that would add value and guide future on-line forums' development. The telephone interviews were transcribed (Appendix XIX) and a summary of the findings is offered in the discussion below.

The Two Participants' Voices

Although both participants declared that they enjoyed participating in this project, *time* and *motivation* were perceived as the two pertinent hindering factors that affected their active participation:

I think that I've found it harder than I thought it would be to motivate myself to sign on and keep up to date with the discussion board, which I find funny as I am on the Internet every day. I've found it much harder than I anticipated. Especially making the time. I work full-time, at different sites so haven't had much time at work to check in. [J].

In addition, and despite the fact that the structure and content of the on-line forum were considered to be clear and encouraging ('I found the discussion topics encouraging, as the titles showed up on the front page and were intriguing enough to get me into the site'), the matter of *confidence* was raised:

I found it really hard to write something to the group, I mean start a post myself, and I'm guessing that others are finding that hard too. I am informed that I am a reflective learner, and to a certain extent this tends to hinder my learning as I question not just the theoretical approaches to learning, but at times my own ability to respond at an appropriate level. I was thinking that I am not sure which topic to choose or what sort of comment to make and I think one's answer, I think it was one of the first comments not sure though, seemed so well

answered. So I read it again a couple of times. It could very well provide a good model, example for others, who are not sure how to go about it, like me, before they post a reply. Would this help at least some of them, the reluctant ones perhaps, to go ahead and post a reply? [J].

I do feel what I have seen and experienced has been valuable, putting me in the situation of a part-time student new to e-learning, which is the experience of those I work with. I mean I have felt very exposed and defensive at times while trying to understand and work the technology, and feeling stupid when I couldn't get access to the text either. [S].

Mitchell *et al.* (2000) and Petrovich (2004) argue that a contextualized sense of self efficacy (professional confidence) is important to reflective development of professional competence (Thompson, 2006:11). Petrovich (2004) explains further that perceptions of self-efficacy will affect a multitude of diverse factors: the decisions that people make, the amount of effort they put forth, their perseverance and resilience in the face of adversity, their tendency to think in ways that are self-hindering or self aiding, and the amount of stress and depression that they experience in response to difficulties (2004:430-431).

Thompson (2006) goes on to argue that evidently, if individuals can perceive a sense of self-efficacy in an appropriate context, then they are likely to achieve the motivation to reflect and seek practice wisdom (Fisher and Somerton, 2000:394; Ferguson, 2003:101; Gelman, 2004:39); thus, the aim for the online learning environment is to promote a sense of perceived self-efficacy to prevent the lack of confidence that might undermine student commitment (Gelman, 2004:39,45) to reflective development (2006:11).

Finally, *communication preferences* and the *lack of social cues* that normally occur in a face to face setting appeared to be another matter that affected individuals' participation:

I think I would like to find out more about other people, those I don't already know on the group, as I know lots of people within the LSDA centre, where they work, what they do, what they look like. I find it interesting that I feel I need to have a voice for each person in my head, and be able to picture them speaking when I read their posts. Perhaps I am a particularly aural person? [S].

I really like the opportunity to 'think / reflect' in discussions. In this 'faceless' environment you can look deeper into yourself, and others, before you respond and at a time to suit! The discussion board was well suited to my style of development as I can go back later and catch ideas I missed. [J].

8.2 The Dynamics of Successful On-line Communication: What makes it Successful?

So, what are the factors that encourage or prohibit successful communication in an electronic environment after all? A number of pertinent themes surfaced through the analysis of the data obtained from the *On-line Forum Evaluation Questionnaire* and the telephone interviews, and are summarized in the discussion that follows.

8.2.1 Access and Motivation

Romiszowski and Mason (2004) found that several networks in a study they carried out had their greater goals limited or prevented by the teachers' technological proficiency, access to equipment, and the stability of the technology, to name a few of the reasons reported to influence the success of electronic networks (2004:412). The research findings in this study appear to concur with the literature:

I do feel what I have seen and experienced has been valuable, putting me in the situation of a part-time student new to e-learning, which is the experience of those I work with. I mean I have felt very exposed and defensive at times while trying to understand and work the technology and feeling stupid when I couldn't get access to the text either. [J].

Similarly, Maher and Jacob (2006) suggest that some teachers did in fact benefit from the use of CMC, although negative influences on teachers' use of CMC included technological complications, lack of time and conceptual energy, and some teachers' preference for face-to-face interactions (2006:127). The research findings of this empirical investigation appear to be no different either:

I also found the differing uses of font style, some adventurous, size, some large and colour some bright in the various contributions quite interesting. Obviously this has a lot to do with personal preference, not to say presence, but some of the postings did perhaps pose a challenge even without any visual impairment, other than the usual ageing effects. [H].

I find the way generally the discussion boards are laid out very slow and annoying too. Slow and pedestrian. I have to keep checking what people have actually said, or what we are being asked to do. [M].

According to Macdonald (2003), students need to learn how to interact online with their peers, and inevitably the extent to which their interaction contributes to their learning and understanding will vary with their competency (2003:378). Salmon (2000) suggests that there may be a number of progressive stages involved in online learning, which include access and motivation, socialisation, information exchange, knowledge construction and development, and these stages illustrate the interplay between competence and affective factors such as growing confidence, motivation, and group dynamics (ibid.):

There's no 'tone of voice' to help you track the responses. I find this as bad as not putting a face to a name. I would like to be able to see all the posts in full when I am replying. I am not even sure if there is a button to do that, is there? [S].

I have a friend who is dyslexic and she has problems with her short memory and because of this I think she hates forums, I mean, I'm not dyslexic but I have found it much more challenging and time consuming than I thought, for example, to remember what the topic is about, read all the posts, reply where necessary and then start to post myself. [M].

A significant implication that arises at this point is that of the interplay between low participation patterns and the notion of *lurking* in electronic environments; Romiszowski and Mason (2004), in discussing the notion of 'lurking' in electronic discussions, state that:

There is an assumption, one that has been insufficiently challenged in the research, of lurkers as passive recipients, rather than actively engaged in reading; reading cannot be assumed to be passive, as much reading, whether online or offline, can encompass active engagement, thought, even reflection on what has been read. The fact that it does not elicit an overt contribution to the discussion forum should not, as has generally been the case in CMC research, be taken to assume lack of such engagement, or of learning (2004:399).

Indeed, and in line with Romiszowski and Mason's (2004) argument, one participant, during the telephone interview, expressed her concerns and hesitation to post an on-line comment after reading other participants' responses to a discussion thread, arguing that because she agreed with the already posted responses, she found it particularly difficult to add her own original comment:

I planned that I would work through the pages and catch up but when you go to the discussion topics and see all the comments, most of which you agree with then it seems difficult to add your own original comments, although it does mean you can respond positively to others I suppose. [J].

Ellis (2001) makes a point of significance when, in a similar context, makes reference to the term 'Nature of Agreement'; that is, in a face-to-face discussion, he argues, agreement is gained from the group by such things as nodding one's head and murmurs of agreement:

It is possible to "actively participate without making a verbal contribution" and this is something that is usually missing from the on-line discussion ... In other words, on-line forum participants might consider it to be redundant to post an on-line message writing 'I agree', therefore awareness of the group sense may only come from those actively participating (2001:172-176).

Still, Wegerif (1998) argues that Lave and Wenger's account of how someone is drawn into full participation depends upon a high degree of interactivity (1998:34). However, several studies have reported that threaded discussions do not encourage team building or group processes (Klemm *et al.*, 2005; Murphy and Coleman, 2004):

Some online environments culturally condition students to agree with each other and challenging each others ideas in discussion is considered a personal affront. There is little social discord [Rourke et al, 1999] [Bullen, 1998] [Kanuka, 2002]. Vonderwell, in a 2003 study, found that students claimed to all have similar ideas and thus there was nothing to really talk about (Maurino, 2006:2).

In addition, a number of scholars have argued that the *asynchronicity* of ALNs, which means that there is no pressure for an immediate response, allows for more reflection; however, *asynchronicity* is not always found to be helpful, especially for those who join in the discussion late and then find it difficult to catch up into a sense of being part of a dynamic conversation (Wegerif, 1998:43).

Conversation is not closely structured by time because it is hermeneutical and dialectic and not argument or rhetoric, and it does not continue to a resolution but until the participants feel that it is ‘time to move on’, that it is time to end the conversation (Garrison *et al.*, 2000:94):

I still feel very much a beginner in the online world but can see lots of possibilities. I suppose this made me reflect on the differences in approach...I really like the opportunity to think, reflect in discussions. I love discussions about things, and being made to think, although if you think for too long it has moved on. [J].

8.2.2 E-moderation

The issue of moderation was raised both in questionnaire responses to item 15, where a mean rating of 2.6 indicated that participants tended to agree that ‘the presence of an on-line moderator would have been useful to help the conversation move forward efficiently’, and also during the telephone interviews, when one colleague explained:

I still feel very much a beginner in the online world but can see lots of possibilities. I suppose this made me reflect on the differences in approach, and how easy I think it will be for unconfident learners to jump ship if there is empathy and support for them. I really like the opportunity to think, reflect in discussions. I love discussions about things, and being made to think, although if you think for too long it has moved on, but that is where the moderator’s encouragement might be helpful. [J].

Salmon (2002) suggests that, through the provision of opportunities for reflection-in-action at critical learning stages and with the support of a trained e-moderator, the participants in computer mediated conferencing (CMC) can be encouraged to engage in reflecting about their onscreen experiences; opportunities for reflection need to be built into the design of online conferences and facilitated by a trained e-moderator (2002:379).

A similar argument was raised by another participant too, who also saw potential value in the presence of an e-moderator, but who, however, made a distinction between a moderator's positive and negative contribution, drawing from a past learning experience:

Comments or emails from a moderator at the start might have been encouraging, especially for those of us who are used to a face to face teaching and learning, but I suppose this isn't always the solution.

Some years ago I was on a 2 week course and falling a bit behind and encouraged by the moderator I scheduled enough time over a weekend to do the work to catch up and then get ahead, only for the purpose of the exercise to be changed. This affected me considerably as I felt I had wasted about 2 hours. I was completely demotivated. So moderators can affect participants both ways, positively and negatively. [S].

The principal investigator assumed the role of observer and facilitator both in the on-line and the face to face context; however, in reflecting on the interactions that occurred in both forums, it seems that this role, although it allowed participants to formulate their own ideas and collaborate actively in the face to face forum, it proved to be at least inadequate in the on-line forum setting. As Garrison *et al.* (2000) put it: 'there might be room for the instructor's inevitable involvement in clarification and feedback on the students' discussions' (2000:94).

8.2.3 Social and Communicative Cues

Kiesler (1986) and Kiesler *et al.* (1984) have also investigated CMC based interactions and according to their research lack of social and communicative cues, combined with perceptions of the medium as 'distancing' and 'cold', leads to group polarization in CMC interactions; the conclusion from such research is that CMC is a

medium that does not support social interaction and complex presentation of social identities (Yates, 1997:285).

Similarly, Siegel *et al.* (1986) concur in asserting that CMC reflects a shift of attentional focus from the social context to the content and context of the message, *sui generis*, arguing that a heightened self-consciousness or self-absorption in the message may produce less sociable and more uninhibited, or antinormative behaviour (1986:182). Indeed, the participants' comments in this study appear to confirm the literature:

I think that e-learning taps into the inside of individuals and breaks down the 'first impression based on what you look like' syndrome, but it is faceless. I think it would be good to have photos or something, just to aid the mental picturing, and help with keeping tabs with 'who said what'. [R].

I think I would like to find out more about other people, those I don't already know on the group, as I know lots of people within the LSDA centre, where they work, what they do, what they look like. I find it interesting that I feel I need to have a voice for each person in my head, and be able to picture them speaking when I read their posts. Perhaps I am a particularly aural person? [J].

In a similar vein, Magee and Wheeler (1997), suggest that participants may have difficulties with the loss of non-verbal cues; they cite Love (1992) who found that the lack of social cues in electronic conferencing led to the subsequent development of 'emoticons' (figures created with character symbols on the keyboard that are used to convey the emotional context in which a line of text is typed) (Greig *et al.*, 2002:26-27). Love (1992) suggested that it was easy for a lack of a social dimension to group processes to lead to a drop in the number of contributions about the task (1997:15). The following participants' comments illustrate in a colourful response Magee and Wheeler's (1997) arguments:

I have a friend who is dyslexic and she has problems with her short memory and because of this I think she hates forums, I mean, I'm not dyslexic but I have found it much more challenging and time consuming than I thought, for example, to remember what the topic is about, read all the posts, reply where necessary and then start to post myself. I find the way generally the discussion boards are laid out very slow and annoying too.

Slow and pedestrian. I have to keep checking what people have actually said, or what we are being asked to do. There's no 'tone of voice' to help you track the responses. I find this as bad as not putting a face to a name. I would like to be able to see all the posts in full when I am replying. I am not even sure if there is a button to do that, is there? [S].

I think that e-learning taps into the inside of individuals and breaks down the 'first impression based on what you look like' syndrome, but it is faceless. I think it would be good to have photos or something, just to aid the mental picturing, and help with keeping tabs with 'who said what'. [R].

In addition, the mean response of 2.6 to the questionnaire item 20, where participants tended to agree that it was more difficult to socialize with the other participants in the on-line forum [plus, they were unsure about whether it was easier to get to know other colleagues on-line (item 19, mean 3.1)] brings into surface the critical dimension of time, in respect of the duration of the electronic communication.

Indeed, the on-line forum project was scheduled to last originally 8 weeks, eventually being extended to 16, after the principal investigator assessed that the on-line participation levels were particularly low. It has been noticed in research on people using low bandwidth systems that these users tend to send fewer messages during the same time period as those communicating face to face or via video conferencing (Hiltz *et al.*, 1986; Ogan, 1993; Walther, 1993); some online relationships may, therefore, be slower to develop, but given sufficient time strong relationships can form that are comparable with those formed face to face (Walther, 1993) (Preece and Maloney-Krichmar, 2003:13).

In this context, the findings of the present study appear to contradict Joinson's (2001) findings, who in examining self-disclosure in computer mediated communication, argues that CMC is more 'social' than face to face interaction (2001:188), especially when considering that the present results indicate relatively similar levels of *Un-reflective/Other* episodes, with the face to face discourse achieving 33.6%, whereas the on-line communication reached an even lower fraction of 29.2%.

8.2.4 Learning in an On-line Community of Practice

Hawkes and Romiszowski (2001) explain that research by Feldman and others (Hollingsworth, 1994; Cochran-Smith and Lytle, 1993) illustrate the importance of dialogue in the development of teacher communities: collaborative conversation encourages relational knowledge that links what teachers learn and understand about their practice to other conditions that impact student learning, such as family influences and the educational setting; perhaps more important, collaborative settings are the likely contexts in which critically reflective exchanges about learning and instruction can take place between teachers (2001:276-287). The following testimony-extract from one of the telephone interviews, appears to be most relevant and in agreement with Hawkes and Romiszowski's views:

I really like the opportunity to 'think / reflect' in discussions. In this 'faceless' environment you can look deeper into yourself, and others, before you respond and at a time to suit! The discussion board was well suited to my style of development as I can go back later and catch ideas I missed. [A].

More recently, Hough *et al.* (2004), in a three years study investigating the use of an asynchronous web-based conference to facilitate reflective thinking, used a conceptual framework from the literature on teacher reflection, computer mediated communication and social cognition, found that constructs identified in the framework could influence the development of reflective thinking online (2004:361).

According to Martyn (2005), successfully fostering interaction in online communication requires incorporating both instructional and social types of interaction in discussion boards (2005:61-62). In order for collaborative online learning to take place successfully, it is crucial that the learner feels part of a learning community where his/her contributions add to a common knowledge pool and where a community spirit is fostered through social interactions (Bernard *et al.*, 2000:262). As one participant declared, 'it would be great if a small community could be formed to help each other within their respective roles in the workplace' [M]. This environment enables students, as learners, to form a community that works together, and shares the same social norms and culture:

This concept has been cultivated in Schon's epistemology of professional practice. According to this view, when people learn a practice, they are initiated into the traditions of a community of practitioners. In the social context of the community they learn their conventions, constraints, languages and appreciative systems, and engage with their systematic knowledge (Schon, 1997). Laffey et al, comment on the benefits of enabling this community of learners and mention that it encourages social discourse which provides important points of divergence for intellectual growth, it challenges students to think more deeply and sparks reflection (Kyriakidou, 1999:1).

Na Ubon and Kimble (2003) argue that to establish a collaborative OLC, the sense of social presence must be created; social presence is one of the most important factors that helps people actively collaborate, thus increasing the sense of belonging and social cohesion to the community:

However, the creation of social presence in an OLC can be problematic due to the limitations of the communication media used, as lean media such as asynchronous text-based CMC suffer from a lack of nonverbal cues and contextual information, and this situation can make learning in online settings impersonal and de-motivating (2003:295-300).

In this context, one participant posted an on-line message explaining:

...The problem is with the concept of 'communities'. A community flourishes because it has common needs/goals, and works on a turnover of members (via the process 'legitimate peripheral participation' as outlined by Lave/Wenger). Without *both* goals and progression of members, the community does not flourish and dies [On-line Forum post: B].

According to Hough *et al.* (2004), when the literature on computer-mediated communication was examined from a community of practice perspective, two common difficulties were evident: many of the programs that were examined either did not have an anchoring practice or question, or were expected to support too many practices, resulting in a lack of focus and role confusion for the participants, whilst other programs were composed entirely of beginners to a practice and did not have experienced participants, making it impossible to create opportunities for legitimate peripheral participation (Hough *et al.*, 2004:364).

Tolmie and Boyle (2000) also conducted a review of the literature and concluded that the critical factors are those which provide a context and rationale for online communication by helping users to establish a shared purpose (2000:119); these comments support Bruffee's (1993) definition of collaborative learning as 'a reculturative process that helps students become members of knowledge communities whose common property is different from the common property of the knowledge communities they already belong to' (Koschmann, 1996:13).

According to Sharratt and Usoro (2003), a sense of community (SoC) has been defined within a group as 'a feeling that members have of belonging ... that members matter to one another ... and a shared faith that members' needs will be met through their commitment to be together' (McMillan & Chavis, 1986:9):

SoC leads to a common perspective of knowledge as a public good, owned and maintained by the community (Wasko & Faraj 2000). Thus, knowledge-sharing is likely to be motivated by moral obligation that results in a deeper sense of satisfaction than when motivated by extrinsic factors. A strong SoC will also lead to a greater degree of importance being placed on recognition of knowledge-sharing. This brings with it feelings of intrinsic satisfaction. Hence, H8: Where SoC is stronger, participation in knowledge-sharing will be greater (2003:191-192).

8.3 Concluding Remarks

This chapter has offered an analysis and discussion of the research findings in relation to the third key research question of this thesis, by examining the contextual factors that may encourage or hinder reflexivity in an asynchronous computer mediated discourse. Analysis of the data gathered through six questionnaires and two telephone interviews revealed a unifying theme, that is, the lack of social cues afforded by a computer mediated environment. Other findings have included the influence of factors such as *access and motivation*, *e-moderation*, and *feeling part of a community*.

Olaniran (1995) claims that the argument is that medium characteristics account for communication differences found between CMC and the traditional face-to-face (FTF) and that the theoretical explanation often used to justify this argument can be linked to *social presence theory*, which describes the degree to which other communication participants are believed to be jointly involved in the communication

process (Short *et al.*, 1976) (1995:525), and which will be discussed in more detail in the chapter that follows.

Chapter 9

New Digital Geographies: The Semantics and Role of Presence in Electronic Conferencing

9.0 Introduction

The preceding chapter shed light into the salient features of the electronic communication that were determined by the research findings to be instrumental in encouraging or hindering reflexivity in asynchronous computer mediated communication. The research findings suggest that although participants classified on the whole their on-line experience as beneficial, social contextual cues were qualified as relatively weak; in addition, matters related to access and motivation, time and conceptual energy and individuals' preference for face-to-face communication were also raised by the participants as key factors accountable for their on-line experience not reaching its full potential and in the context of their CPD.

In addition, it was explained that according to Olaniran (1995) the argument is that medium characteristics account for communication differences found between CMC and the traditional face-to-face (FTF) and that the theoretical explanation often used to justify this argument can be linked to *social presence theory*, which describes the degree to which other communication participants are believed to be jointly involved in the communication process (Short *et al.*, 1976) (1995:525).

Skinner (1968) argues that the end product of a scientific investigation is a described functional relationship demonstrated in the data (1968:8). The present chapter elaborates on Skinner's argument by offering a succinct overview of the theoretical framework and dimensions of the concept *social presence*, and which has emerged as the pertinent unified theme in describing the functional relationship amongst the data (Chapter 8) of the present empirical investigation.

I will first address the challenges and constraints in communicating with the mediated 'other' and report on the salient role of social presence in mediated communication; I will then turn to offer a succinct background of the notion *social presence*, discussing the dynamics of social presence in mediated communication and the concept of *cluelessness*, and conclude with remarks on the social dimension of asynchronous learning and the concept of on-line learning communities.

9.1 Communicating with the Mediated 'Other'

It is widely thought that electronic technology offers new means of enhancing traditional interaction, bringing participants at a distance into communication with each other (Rimmershaw, 1999:189). For collaboration to be successful, however, effective communication among group members is necessary (Roberts, Lowry and Sweeney, 2006); the importance of having effective group communication increases with greater complexity in the exchange of information in verbal or digital communication (Dommel and Garcia-Luna-Aceves, 2000 in Lowry *et al.*, 2006:632).

Effective communication demands skills of self-expression, attentive listening, and balancing levels of mutual participation: these processes are assisted in a face to face situation because participants can read the emotional reaction of others through their 'body language' (posture, gesture, and involuntary movement); these features are largely absent in a virtual environment and, for anyone unsure of themselves, this factor may exacerbate tensions and worries (Greig *et al.*, 2002:37):

Group members must be able to clearly and explicitly exchange information for communication to effectively support collaboration. Unfortunately, most groups experience process losses that undermine effective communication; such losses include conformity (Hackman & Kaplan, 1974), evaluation apprehension (Diehl & Stroebe, 1987; Lamm & Trommsdorff, 1973), and production blocking (Diehl & Stroebe, 1987).

The impact of these phenomena may vary depending on task, group size, or level of social presence (Andres, 2006; Roberts, Cheney, & Sweeney, 2002; Roberts, Cheney, Sweeney & Hightower, 2005; Roberts *et al.*, 2006) (Lowry *et al.*, 2006:632).

9.1.1 Challenges and Constraints: The Salient Role of Social Presence

Preece and Maloney-Krichmar (2003) argue that in online textual environments people represent themselves through their words, and both syntax and semantics convey meaning; however, when people communicate via narrow bandwidth media, such as text, that do not carry non-verbal information (body language, facial expression, voice tone), cues that help us to understand each other are missing (2003:91). Developing shared understanding (i.e., establishing common ground), a sense of social presence, empathy, and trust is therefore usually harder, which in turn makes developing social relationships slower and more difficult (*ibid.*).

Cummings *et al.* (2002) go even further and declare that online relationships are less valuable than offline ones and that their net benefit depends on whether they supplement or substitute for offline social relationships (2002:103). To this end, Johnson and Johnson (1994) convincingly argue:

We are not born instinctually knowing how to interact effectively with others. Interpersonal and small group skills do not magically appear when they are needed. Students must be taught the social skills required for high quality collaboration and be motivated to use them, if cooperative groups are to be productive (p.184). Communication theorists argue that these issues become particularly salient in novel communication environments such as asynchronous, text-based computer conferencing in which the communicative repertoire is limited to text (Rourke and Anderson, 2002:261).

It is in this context that Olaniran (1995) argues that medium characteristics account for communication differences found between CMC and the traditional face-to-face (FTF) and claims that the theoretical explanation often used to justify this argument can be linked to *social presence theory*, which describes the degree to which other communication participants are believed to be jointly involved in the communication process (Short *et al.*, 1976):

The proponents of this theory subscribe to the notion that CMC systems are low in their capacity to convey information about facial expression, posture, and nonverbal cues. The degree of availability of such cues is believed to influence users' views of the communication medium, context, performance, and message interpretations. Specifically, CMC, with its lack of nonverbal cues, is said to be lower in social presence compared to FTF communication. Social presence theory, thus, has been used to account for increased task orientation and low socio-emotional communication found in CMC research (Hiltz *et al.*, 1986; Rice, 1984) (1995:525).

According to Walther (1992), it is not clear from social presence theory whether media characteristics are the causal determinants of communication differences or whether the users' subjective perceptions of media influence their behaviour; in other words, while there are inherent media characteristics, it is equally possible that users' perceptions of these characteristics may be subjectively and socially constructed (Olaniran, 1995:525). In fact, Steinfield (1986) points to this when he argues that factors like environmental uncertainty and the need for communication across locations influence the extent to which CMC messages address the socioemotional needs of users (*ibid.*).

Garrison *et al.* (2000) define social presence as the ability of participants in a community of inquiry to project themselves socially and emotionally, as 'real' people (i.e., their full personality), through the medium of communication being used; unlike earlier communications theorists (Daft & Lengel, 1986; Short, Williams & Christie, 1976; Sproull & Kiesler, 1986) they do not believe that the effect of media *per se* is the most salient factor in determining the degree of social presence that participants develop and share through the mediated discourse (2000:95). Rather, the communication context created through familiarity, skills, motivation, organizational commitment, activities and length of time using the media directly influence the social presence that develops (*ibid.*, 2000:94).

The research findings of this study appear to be in complete alignment with Garrison *et al.*'s arguments, as analysis of the empirical data, captured from the questionnaire responses and the content of the two telephone interviews conducted (Chapter 8), confirmed that matters such as *access and motivation, participants' perceptions, personal preferences* and *individual learning styles* were also perceived as key instrumental factors affecting the computer mediated discourse.

In this context, Lea (1992) convincingly argues that distinctive histories of social interaction also condition such use: each individual has a rich history of interactions that partly structures perceptions of events and surroundings (Kelly, 1973) and this history also affects how individuals engage in actions, anticipate consequences of actions and provide templates for future actions (Bandura, 1986); in other words, personal interaction patterns are an essential aspect of the individual's historical context and social influences are known to affect the meanings that individuals attach to symbols (Mead, 1934; Rose, 1962), behaviours and attitudes (Bandura, 1986; Erikson, 1988), and interpretations of events (Salancik and Pfeffer, 1978):

Just as individuals have distinctive histories of interactions with others, they also have differing experiences with CMC. Some individuals might have highly positive experiences with computer-based technical innovations or very positive interactions with group members who value CMC. Schmitz and Fulk (1991) reported the existence of several individuals who had such positive experiences with CMC that they served as 'cheerleaders' for the electronic system Fulk *et al.* (1989) found a pointed example of a personal interaction history that influenced not only that individual's reaction to his setting, but also served as a contextual influence on others in his network (1992:16).

Indeed, the dimension of time seems to come into play here, especially if one considers Lea's (1992) point of view, who argues that 'the context is dynamic because it is continually evolving, and because members' values are entwined in the fabric of their history of interaction, the historical context shapes what is possible, what is desirable and 'what is done around here' (1992:18). Garrison *et al.* (2000) succinctly argue in this context that 'social presence in the form of socio-emotional communication is possible in computer mediated communication, but not automatic' (2000:94).

In a similar vein, they also argue that, when a significant degree of social presence has been established, cognitive presence is more easily sustained (Garrison, 1997; Gunawardena, 1995); that is, socio-emotional interaction and support are important and sometimes essential in realizing meaningful and worthwhile educational outcomes (*ibid.*).

Moreover, it could be argued that media such as face to face interaction which promote a less hampered flow of information are more likely to result in the greater exchange of novel arguments required by informational influence; further empirical work on this issue, specifying the features of the medium which may underlie such effects would therefore seem to be warranted (Lea, 1992:41).

9.2 The Concept of Social Presence: Defining the Parameters

The concept of social presence was first introduced in 1976 by Short, Williams and Christie (1976); they define social presence as the degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationships, and regard it as medium characteristic (Hwang and Park, 2007:845).

Biocca, Harms and Burgoon (2003) describe social presence as *a sense of being with another* (2003:456). Adding to this, Lowry *et al.* (2006) adopt a more explicit definition of social presence as ‘the degree to which a communication medium allows group members to perceive (sense) the actual presence of the communication participants and the consequent appreciation of an interpersonal relationship, despite the fact that they are located in different places, that they may operate at different times, and that all communication is through digital channels’ (2006:633).

Social presence theory speaks about how successfully media convey a sense of participants being physically co-present; it has its origins in communications studies and social psychology, rather than linguistics, and it helps to explain how social behaviour is affected by characteristics of different media (Preece and Maloney-Krichmar, 2003:11). Social presence theory (SPT) states that media low in social presence may not be suitable for intersubjective interpretation, when interactivity and reciprocity are needed in communication (Miranda & Saunders, 2003; Short *et al.*, 1976):

Central to SPT is the belief that the presence of the sender influences the recipients’ understanding of the message (Miranda & Saunders, 2003). Communication media with more available cues generate a higher level of social presence than those with fewer cues, thus leading to stronger social pressure and normative influence on group members (Burke & Chidambaram, 1999; Miranda & Saunders, 2003; Riegelsberger, Sasse & McCarthy, 2005; Tan, Wei, Watson, Clapper & McLean, 1998 in Lowry *et al.*, 2006:638).

Zhao and Elesh (2008) draw an important distinction when they argue that ‘we must distinguish between co-location and co-presence in human encounters: two individuals are co-located if they are in each other’s proximity, if they are mutually present to one another (Goffman, 1966) and each is within the sensory range of the other (2008:569). According to Goffman (1966), the condition that provides mutual accessibility, and therefore allows for mutual contact, is not mere co-location but co-presence, where persons must sense that they are close enough to be perceived in whatever they are doing, including their experiencing of others, and close enough to be perceived in this sensing of being perceived (1966:17).

Social connectivity requires both co-location and co-presence: co-location, a form of spatial connectivity, places people in each other’s sensory proximity, making them within range of naked or extended perceptions for mutual contact (Zhao and Elesh, 2008:577). However, co-location is only a prerequisite for social connectivity, which also requires co-presence; co-presence is a mode of human togetherness that makes spatially co-located individuals mutually accessible for contact, rendering them not only within range but also within reach (*ibid.*, 2008:578).

9.2.1 The Dynamics of Social Presence in Mediated Communication

The extent to which a communication medium may influence or support the content of the socio-emotional communication process, with computer conferencing being in the midst of it, has been subject to research scrutiny for over two decades (Rice and Love, 1987:85):

It is clear that in mediated interaction social presence is problematic. The mediated other is not simply “here or not-here,” but is present to a lesser or greater degree along some definable continuum. Even in unmediated interactions, the simple binary, here-not here approach to social presence is unsatisfactory. Nowhere is this made more obvious than in the seminal and in insightful work of Ernest Goffman (1959, 1963) (Biocca *et al.*, 2001:6).

Two early schools of thought attempted to explain a medium’s effect on a message and on the communicators’ evaluations; one asserts media vary in terms of interaction process efficiency, in that they provide different numbers of channels and

support transmission of different nonverbal cue types, and the other asserts that media differ based on the quantity of nonverbal communication they can transmit (Lowry *et al.*, 2006:633). Short, Williams, and Christie (1976) combined the two and suggested social presence as a construct to classify communication media and their social impacts (*ibid.*).

Spears and Lea (1992) see ‘the social’ as being equated with both ‘the interpersonal and the informational’ and they offer an alternative model to that of Kiesler’s *et al.* (Yates, 1997:285). Kiesler (1986) and Kiesler *et al.* (1984) have investigated CMC-based interactions and according to their research ‘lack of social and communicative cues, combined with perceptions of the medium as ‘distancing’ and ‘cold’, leads to group polarization in CMC interactions; the conclusion from such research is that CMC is a medium that does not support social interaction and complex presentation of social identities (*ibid.*).

Yates (1997) argues that CMC interactions lack a great deal of the non-verbal information present in face to face interactions upon which assessment of social status are built (Kiesler *et al.*, 1984; Rice, 1984; Kiesler, 1986; Rice and Love, 1987), and this has led to a number of conflicting arguments about the role of social status cues such as gender, race and class in CMC interactions (1997:282).

Related to social presence, high-quality group discussions generate multiple perspectives, involving interaction and reciprocity, where shared knowledge allows for understanding and the successful definition of problems:

Because lower social presence results in fewer social cues, it is likely to generate less interaction and reciprocity that is required for high-quality communication. Complementary research shows that FtF communication can enhance communication overall by facilitating social judgments (Burgoon *et al.*, 2002 in Lowry *et al.*, 2006:638).

Another phenomenon that has been noticed in research on people using low bandwidth systems is that these users tend to send fewer messages during the same time period as those communicating face to face or via video conferencing (Hiltz *et al.*, 1986; Ogan, 1993; Walther, 1993); some online relationships may, therefore, be slower to develop, but given sufficient time strong relationships can form that are

comparable with those formed face to face (Walther, 1993 in Preece and Maloney-Krichmar, 2003:13).

In this context, Spears and Lea (1992) argue that online relationships may be extremely rich. Encouraging participants to be particularly careful about what they say and how they say it early in relationships can be helpful until they become experienced with the medium and find ways to deal with the lack of visual cues (Rice & Barnett, 1986); for example, phrasing a comment tentatively to avoid appearing aggressive (Wallace, 1999), or prefacing it with IMHO - 'in my humble opinion' or placing additional personal material (e.g., pictures, personal stories) on Web pages associated with the community can achieve this goal and help people to get to know each other online (Preece and Maloney-Krichmar, 2003:13). The findings of the present study seem to confirm this point of view, as in one of the telephone interviews it was explained:

I think I would like to find out more about other people, those I don't already know on the group, as I know lots of people within the LSDA centre, where they work, what they do, what they look like. I find it interesting that I feel I need to have a voice for each person in my head, and be able to picture them speaking when I read their posts. Perhaps I am a particularly aural person? [J].

Furthermore, Preece and Maloney-Krichmar (2003) make reference to the term 'critical mass' (Markus, 1987; Markus, 1990; Morris & Ogan, 1996), when they argue for the number of people needed to make an online community viable and to attract others, explaining that if there are too few people contributing to an online discussion, it will die because there will be insufficient new messages to hold the interest of existing members (2003:16). Indeed, the low participation levels observed in the on-line forum of this study seem to give justice to Preece and Maloney-Krichmar's argument; the following extract from an early on-line post reveals a participant's frustration on this matter:

The use of ICT and distance learning is an interesting one with, for me, some disturbing outcomes. ICT would seem initially to be the answer for distance learning but I am involved with some leadership and management distance learning and am the NE tutor. We have a VLE but I'm having great difficulties in getting people to sign up and participate.

It is also interesting that there are only two of us participating in these discussions. So, why is this overall reluctance to take part? Are people afraid of the technology? don't have the time? Too aware of the 'bad press' that discussion on-line has received. [On-line Forum Post: C].

9.2.2 Cuelessness

Of course, social presence is about the medium and not the message, in the sense that social presence is a container for certain types of behaviour and knowledge creation. In enlarging the scope beyond the focus on human relationships to the environment where these relationships are grown, many argue that modern technologies have created a great range of social presence situations in which team communication can occur; however, when communication is face to face, participants are collocated and perceive the physical presence of others in the room, whilst when communication is digital (computerized), there is often a reduction in the number and type of cues that facilitate communication through nonverbal channels that are harder or perhaps impossible to perceive when a group is distributed (Daft, Lengel and Trevino, 1987 in Lowry *et al.*, 2006:632).

Short *et al.* (1996) compared a number of different forms of telecommunication (e.g. face to face, telephone/intercom and video interactions) and investigated the degree of users' satisfaction based on factors such as unsociable and sociable, impersonal and personal, cold and warm, and insensitive and sensitive; they claimed that users' perceived satisfaction of the medium was defined by the levels of the factor 'social presence' and that media that demonstrated lower levels of 'social presence' were perceived as less favourable (1996:84).

The findings of numerous studies suggest that specific factors associated with electronic conferencing technologies may present identifiable barriers to this social process (Greig *et al.*, 2002:26). Clearly, people are not automatically connected to each other if they are connected to the Internet; but we need to explain why 'being online' is not the same as being 'connected' to a community of others (May, 2002:89).

Magee and Wheeler (1997), for example, suggest that participants may have difficulties with the loss of non-verbal cues; they cite Love (1992), who found that the lack of social cues in electronic conferencing led to the subsequent development of 'emoticons', and he argued that it was easy for a lack of a social dimension to group processes to lead to a drop in the number of contributions about the task (1997:15).

Like common ground, social presence depends not only on the words people speak but also on non-verbal cues, body language and information about the speakers' context (Rice & Love, 1987; Rice, 1993); reduced social cues (i.e., gestures, body language, facial expression, appearance, voice tone) are caused by not having sufficient bandwidth to carry this information (Culnan & Markus, 1987; Walther, 1993) and, consequently, many clues about the communicators' emotional states (e.g. gaze and tonal information) are filtered out (Preece and Maloney-Krichmar, 2003:11).

In other words, the rationale of why users perceive such media as being 'asocial' returns again to the issues of face to face cues; Rutter (1987), in describing his 'cuelessness' model derived from similar research, argues:

Cuelessness leads to psychological distance, psychological distance leads to task orientated and depersonalised content, and task-oriented depersonalised content leads in turn to a deliberate, unspontaneous style and particular types of outcome (1987:74).

Indeed, the fact that one of the on-line forum participants referred to the issue of 'getting to know people without feeling uncomfortable, seeing them face to face' implies that the presence of such social cues would have encouraged individuals to engage in an on-line collaborative discourse more eagerly.

Accordingly, traditional, unmediated FtF verbal communication provides the highest social presence (Miranda & Saunders, 2003), whereas computer-supported media provide lower social presence, and virtual groups also experience relatively low social presence (Burke, Aytes, Chidabaram & Johnson, 1999; Burke & Chidambaram, 1999; Jarvenpaa & Leidner, 1999; Miranda & Saunders, 2003; Roberts *et al.*, 2006 in Lowry *et al.*, 2006:638). Short, Williams, and Christie's (1976) exhaustive review of the media comparison studies culminated in the following conclusion:

In most cases, the function of non-verbal cues has been in some way related to forming, building, or maintaining the relationship between interactants. The absence of the visual channel reduces the possibilities for expression of socio-emotional material and decreases the information available about the other's self-image, attitudes, moods, and reactions. So, regarding the medium as an

information transmission system, the removal of the visual channel is likely to produce a serious disturbance of the affective interaction (1976:59-60).

Indeed, this conclusion may justify the fact that the on-line discussion achieved a considerable amount of *Rational Interpretation* (70.6%), whilst no evidence of *Non-rational Interpretation* was observed, and in contrast to the face to face discourse, which achieved a fraction of 25.8%.

Three consequences of the reduced repertoire of communication cues are discernable in the computer conferencing literature, the first one, predicted accurately by Short *et al.* (1976), being the lack of information concerning *mutual attention and awareness* (Rourke and Anderson, 2002:261); Bullen (1998) has summarized his students' views in this context by arguing that the asynchronous communication left them feeling remote, detached, and isolated (1998:10).

The lack of cues in this medium can also exacerbate *communication apprehension*, defined as the fear of real or anticipated communication with people; Grint (1989) observed that students found it difficult to carry out conversations in asynchronous time because they were inhibited by their impression of a large, lurking audience (Rourke and Anderson, 2002: 259-275).

Another recurring theme, which Lea (1992) argues reflects the interpersonal conception of the social, is the distinction between the task-oriented and the social or socioemotional dimensions of group activity and communication; this division can be traced back to Bales (1950), and resurfaces in the work of many researchers in CMC (e.g. Kiesler *et al.*, 1984; Rice, 1984; Rice and Love, 1987; Siegel *et al.*, 1986; Sproull and Kiesler, 1986; Steinfield, 1986; Sumner, 1988):

The interpersonal basis of the social in this formulation is made most explicit in Rutter's opposition between the 'task' and the 'person'; task-orientation is associated with cuelessness while face to face communication is more personal and thus more 'social' (Rutter, 1987) (Lea, 1992:45).

This idea is directly echoed by CMC theorists who couple 'immersion in the task' with the less social mode of CMC (e.g. Siegel *et al.*, 1986); again the social is equated here with interpersonal interaction, the implication being that task-related activity is not itself social activity or socially regulated (*ibid.*).

9.3 The Social Dimension of Asynchronous Learning

One notable development in the last few years is the increasing exploration around the nature of teaching and learning itself, which has been fed, stimulated and challenged by the increasing use of computing in most educational arenas; many educationalists are excited that networked technologies provide a new kind of window on the world of information, but feel uncomfortable that they also may serve to reduce the social and collaborative aspects of learning, with the prominent debate being about how to fully engage students online continues, and about what kind of technologies, provided by whom, create the right kind of environments for what! (Salmon, 2000:x-xi).

According to Tu (2000a), social presence is required to enhance and foster online social interaction, a major vehicle of social learning (2000a:27). DeLacey and Leonard (2002), in arguing for the need to recognize that learning is largely a social activity, quote Aronson (1999) who argues that ‘humans are social animals’ (2002:14). In a similar vein, Booth and Hultén (2003), in exploring learning in a web-based discussion group, analyzed discussion transcripts for pivotal contributions in the discourse (learning moments) and created a taxonomy of contributions to online discourse, described as a necessary hierarchy for learning, consisting of four categories of contributions, namely *participatory*, *factual*, *reflective* and *learning* contributions:

For a learning contribution to be made it is necessary that questioning and justified agreement and disagreement of the reflective contributions have been present. Reflection can only occur when participants in the discussion are presenting, proposing, asking for, facts related to the problem in hand and the emergent solution, or factual contributions. These, then, are prerequisites for learning. The participatory contributions are what identify the individuals as members of a collaborative unit, where such discussions are allowed, trusted and supported in a social sense, and which makes each contribution worthy of examination and response (2003:82).

Supporting research illustrates that a lower level of social presence in virtual teams can result in diminished communication quality (Roberts *et al.*, 2006), whereas FtF communication can enhance communication quality (Burgoon *et al.*, 2002); studies have also revealed the powerful effect of FtF discussion on cooperation

choices in social dilemmas (Orbell, Dawes & Van de Kragt, 1988) and on coordinating the efforts of highly interdependent groups such as juries, aircraft crews, and research teams (Tushman, 1979 in Lowry *et al.*, 2006:639).

9.3.1 Towards an On-line Community of Learners

Fabro and Garrison (1998) found social presence to be crucial to establishing a critical community of learners, however, this does not reveal much about the process that will facilitate worthwhile outcomes; as Garrison *et al.* (2000) put it 'that process is a collaborative process where critical reflection and discourse are encouraged and practiced' (2000:94). In this context, they also go on to argue that, given the reliance of computer conferencing on the written word, the establishment of a community of inquiry can be problematic with regard to establishing social presence (*ibid.*:94-95).

Na Ubon and Kimble (2003) argue that to establish a collaborative OLC, the sense of social presence must be created as it is one of the most important factors that helps people actively collaborate, thus increasing sense of belonging and social cohesion to the community; however, the creation of social presence in an OLC can be problematic due to the limitations of the communication media used:

Lean media such as asynchronous text-based CMC suffer from a lack of nonverbal cues and contextual information. This situation can make learning in online settings impersonal and de-motivating. However, asynchronous text-based CMC is one of the predominant tools used by many educational institutions around the world to support online learning processes. Thus, the major question addressed by this paper is: can we create the sense of social presence in OLCs through the use of asynchronous text-based CMC? (2003:1).

Schrage (1995) argues that the act of collaboration is an act of shared creation and/or shared discovery (1995:4). Collaboration is an approach to teaching and learning that goes beyond simple interaction and declarative instructions; collaboration must draw learners into a shared experience for the purposes of constructing and confirming meaning (Garrison *et al.*, 2000:94). In arguing for the dissimilarity between collaboration and mere information exchange, Schrage (1995) explains vividly that the difference is similar to 'the difference between being deeply

involved in a conversation and lecturing to a group. The words are different, the tone is different, the attitude is different, and the tools are different (1995:5).

Fedler (1999), in discussing the characteristics of conversation, begins his exploration of conversation by stating that

I see it as something more than interchange, discourse, or talk. For interchange, discourse, or talk to be considered conversation, it must have certain characteristics. First, a conversation occurs between or among people; secondly, it is a cooperative venture; thirdly, there is a direction to conversation; fourthly, new understanding arise through conversation; finally, conversations, like baseball, are not governed by the clock (1999:131).

As Buchmann (1983) puts it:

In conversation, ideas collide and mingle with other ideas and are diluted and complicated in the process...In conversation, one may differ and still not disagree...People do not insist that partners follow, it is enough that they enter into conversation. Thus conversation is a great respecter of differences (1983:21).

Rourke *et al.* (2001b) developed a 12 indicators scheme that reveals the level of social presence in an online community of inquiry, arguing that the higher the scores, the higher the participants' involvement in the otherwise risky act of posting their tentative ideas and also in offering critiques of others' hypotheses:

Low frequencies indicate that the social environment is cold and impersonal: Participants are using the conference in a purely pragmatic manner for terse exchanges of information, perhaps because they are being evaluated for quantitative participation. High scores indicate that the environment is warm and collegial. Participants feel a sense of affiliation with each other and a sense of solidarity with the group. This environment of approachability and closeness encourages the students to regard the conference and their interactions as intrinsically valuable and educationally profitable. This in turn supports students in the otherwise risky act of posting their tentative ideas and also in offering critiques of others' hypotheses. As Eggins and Slade (1997) note, disagreement and critical evaluation are more characteristic of those who share strong bonds, rather than of new or transient acquaintances (2001b:62)

9.4 Concluding Remarks

This chapter has elaborated on the salient role of social presence in the context of collaborative asynchronous computer mediated communication. First, I addressed the challenges and constraints in communicating with the mediated ‘other’ and reported on the salient role of social presence in mediated communication; then I turned to offer a succinct background of the notion *social presence*, discussing the dynamics of social presence in mediated communication and the concept of *cluelessness*, concluding with remarks on the social dimension of asynchronous learning and the concept of on-line learning communities.

What has been apparent from the preceding discussion is that the modeling of media, others captured by the word *social presence*, is more complex than originally conceptualized in the pioneering work of Short, William, and Christie (1976); there, social presence was an enduring property of the medium measureable with a few items about the medium, however, the discussion in this chapter revealed that social presence cannot really be conceptualized as a fixed property of medium, but rather it is best conceptualized as a property of individual perceptions of mediated others, that likely fluxates during interactions, tasks, and individual differences (Biocca *et al.*, 2001:30).

The section that follows, Section IV, is the last section in this thesis, and it consists of two succinct chapters (Chapters 10 and 11). Chapter 10 offers a laconic summary of the research findings, alongside discussion of relevant implications and recommendations for future research, whereas Chapter 11, the *Epilogue* of this thesis, draws on some final concluding remarks and personal reflections on lessons learnt by doing this thesis.

Section IV

Synopsis, Enrichments, Final Reflections and Epilogue

‘A scientist, with the desire to satisfy his/her curiosity about the facts of nature, has a predilection for ordering his/her facts into systems of laws and theories. He/she is interested not only in verified facts and relationships, but in neat and parsimonious ways of summarizing these facts (Hilgard and Bower, 1966:1-2).

The present and final section in this thesis does precisely that, and it consists of two succinct chapters (Chapters 10 and 11). Chapter 10, ‘Synopsis and Discussion of the Research Findings’, offers a laconic summary of the research outputs, highlighting the pertinent themes that emerged in this thesis, and by drawing upon the pertinent literature. It does so by answering the research questions posed in Chapter 1.

Chapter 11, the *Epilogue* of this thesis, draws on some final plausible conclusions, alongside discussion of relevant implications and recommendations for future research. It concludes with some personal reflections on the assignment of carrying out the empirical investigation and writing this thesis.

Chapter 10

Synopsis and Discussion of the Research Findings

10.0 Introduction

The discussion that unfolded in the preceding chapters illustrated that a number of initial building blocks were initially set in place, to be bound later together to unfold the construction of such theory in which empirically based relationships were established between the concepts of reflexivity, asynchronous computer mediated communication and the salient role of social presence.

The present chapter offers a laconic summary of the empirical findings, highlighting yet again the pertinent themes that emerged in this thesis, and by drawing upon the pertinent literature, reference to which was made throughout the thesis and mainly in Chapter 2. It does so by a) employing a unified approach in answering the research questions defined in Chapter 1 consecutively, b) arguing for the contribution of this empirical work to theory and practice, and c) reflecting on the emerging implications and proposing an agenda for future research, and in doing so, ‘bringing this thesis together’ in a conclusive manner.

10.1 Synopsis of the Research Findings

The purpose of this study has been to examine whether, and if yes, how reflective thinking – as a meaningful professional objective – is promoted through collaborative asynchronous computer mediated communication by comparison with traditional face to face discourse. Effectively, the principal investigator has been searching for a causal explanation of difference, where independent variables of two kinds – face to face and asynchronous – were compared for the outcomes in dependent variables. Three research questions were defined in the outset of this empirical study (Chapter 1) and they were:

- What aspect and depth of reflexivity – if any – does asynchronous computer mediated communication achieve?
- How does it compare with traditional face to face discourse?
- What are the contextual factors which encourage or hinder reflexivity in an asynchronous computer mediated environment?

I will now present a summary of the empirical findings by addressing these research questions consecutively, highlighting the pertinent themes that emerged throughout the investigation, and by drawing upon the pertinent literature, reference to which was made throughout the thesis, and mainly in Chapter 2.

10.1.1 Research Question 1: What aspect and depth of reflexivity – if any – does asynchronous computer mediated communication achieve?

The on-line discourse was analysed for evidence of the variable reflexivity based on the categories defined in the ‘Scheme of Indicators for Determining Evidence of Reflection’. The analysis revealed that the vast majority of the participants’ responses qualified for the ‘Reflexio Act’ mode (70.8%), with only one third of the total episodes (29.2%) falling into the ‘Un-reflective/Other’ category. Within the ‘Reflexio Act’ posts, over two thirds of the contributions offered evidence of ‘Rational Interpretation’ (70.6%), whereas nearly one third of the on-line posts (29.4%) fell into the ‘Reflective Thinking’ category.

According to Dewey (1933), reflective thinking is valuable because it converts action that is merely appetitive, blind, and impulsive into intelligent action (1933:17). In addition, the present outputs seem to confirm Barnett's findings, who argues that networking technologies can foster reflection on practice (Barnett, 2002), as textual analysis revealed that the reflective episodes that fell into the 'Rational Interpretation' category (70.6%) maintained a focus on participants' enquiries or concerns related to everyday practice.

In the same vein, McMahon (1996) discovered that 29% of the participants in his study posted at least one critically reflective message, and where a critically reflective message was defined as one that 'raised issues exploring underlying beliefs, motivations, and implications related to teaching and learning' (Romiszowski and Mason, 2004:413).

Angeli *et al.* (2003) on the other hand, in investigating preservice teachers' posts in an asynchronous forum, found that students did not engage themselves beyond surface-level discussion, to the degree they questioned whether deep, meaningful discussions are even possible in asynchronous environments (Paulus and Phipps, 2008). Yet, their online discussions were open-ended rather than goal-oriented, with little incentive for deep discussion (*ibid.*), whereas the on-line forum in the present study was semi-structured, bearing triggering posts relevant to the population's professional interests in order to provoke debate.

An interesting observation was that there was no evidence of 'Non-rational interpretation' or 'Core/silent reflection' and as defined in the 'Scheme of Indicators for Determining Evidence of Reflection'. Likewise, a possible explanation might be that the mode of asynchronous communication offers adequate time for rational interpretation to develop, encouraging considered, thought out contributions (Newman *et al.*, 1995), whilst eliminating at the same time the amount of interruptions and/or emotional reactions that a synchronous mode for collaboration would allow and perhaps encourage.

In addition, I feel that the absence of the 'collaborative conversation' and 'storytelling' elements in the electronic discourse played a pivotal role in the lack of *Core Reflection* outcomes in the on-line conferencing, as textual analysis of the on-line discourse revealed that 76.5% of the *Reflexio Act* posts had a focus on professional experience, with only 17.6% of the incidents making reference to an individual learning experience, whilst the majority of the *Reflexio Act* posts in the face

to face forum primarily concerned an individual's own learning (40.5%), with 32.6% of the incidents making reference to a personal life experience (the latter not being evident in the on-line discourse). It would appear then, and in the context of the present study, that when the focus of reflection relates to the individual's own learning and life experiences, collaborative conversation and storytelling is encouraged and evidence of *Core Reflection* is observed.

Similar claims were made by Pena-Shaff *et al.* (2001) who, in examining discussions of graduate students, argued that asynchronous communication is better for critical thinking and reflection, with chat a better tool for idea-generation and feedback (Paulus and Phipps, 2008:470). Furthermore, they found that participants, although they posted opinions in the asynchronous environment, they engaged in little to no interaction (*ibid.*), and the present findings seem to come to conformity with these claims as well, as the analysis of the on-line communication patterns revealed low participation levels in the on-line threaded discussion.

Herring (1992, 1993) also found differences in the CMC practices of men and women: men were more likely to post messages on specific or focused topics and to provide specific information; women, on the other hand, were more likely to post on personal aspects of the discussion or to post queries to other list members (Yates, 1997:286). Wyatt (1993) considered the long term development of content within the discussion; he found that, though the discourse was at the outset more 'personal' than 'professional' (informational), this changed over time as the 'interactants', mostly women, gained confidence and developed their own specific linguistic genre for the interaction (Yates, 1997:287). The findings of this study appear to contradict these research outputs as, out of the total of the contributions posted by females, 80% were categorised as 'Reflective Thinking' and 75% as 'Reflective Interpretation', with males achieving 20% and 25% respectively.

10.1.2 Research Question 2: How does it compare to face to face dialogue?

Content analysis of the on-line and the face to face communication revealed that asynchronous computer mediated discourse achieved a higher percentage of reflexivity (70.8%) by comparison with the face to face interaction (66.4%).

In a similar study, Hawkes and Romiszowski (2001) studied the reflective content of asynchronous CMC among 28 teachers at 10 different schools and of face-

to-face interaction among these same teachers in their school-based teams (Maher and Jacob, 2006:127-150). The CMC was unstructured, not mandatory, and occurred over the same period of time as the face-to-face interaction; the study found that CMC facilitated more reflective discourse than in face-to-face interactions (ibid.).

In addition, although there was no evidence of ‘Non-rational Interpretation’ in the on-line discourse, a statistic of 25.8% was achieved in the face to face discussion. A possible explanation may be found in Eraut’s (1995) claim, who argues that shortage of time often forces a more automatic and probably more fallible response (1995:20). Russell’s (1951) argument is instructive here:

Written words differ from spoken words in being material structures. A spoken word is a process in the physical world, having an essential time-order; a written word is a series of pieces of matter, having an essential space-order (1951:37).

These findings appear to be in line with Dinkelman’s (2000) claims who, in a similar study, argues that ‘it seems that the face to face forum participants were more willing to consider moral and ethical dimensions of educational and professional practice, whilst there was far more consideration of the practical concerns of teaching in the on-line discourse (2000:216).

Still, the on-line discourse achieved a considerable amount of ‘Rational Interpretation’ that reached a scale of 70.6%, with the face to face communication achieving 48.3%. In this context, the findings of this study appear to support previous research (Chidambaram, 1996) which showed that virtual groups tend to be more task oriented and exchange less social-emotional information (Romiszowski and Mason, 2004:407). To this end, Harasim *et al.* (1985) and Mason and Kaye (1989) suggest that, if participants are engaged in writing, rather than talking, they are able to attain a higher level of analysis of ideas, and there are a number of reasons why this might be the case:

Students have more time to think about the responses; they are able to engage with developing arguments; they have time to follow up references and read literature, so that responses can be more detailed and argumentative; more of the group are able to participate in interactions; contributions can be seen as being more objective and anonymous; there is a group record of the debate that can be used as an accurate reference at a later date (Motteram and Teague, 2000:3).

As Wegerif (1998) says, ‘the benefits of taking part in collaborative learning (via CMC) were derived from taking part in a developing conversation where many of the replies were much more considered than might have been the case had the same people talked together over several hours (1998:13). In this sense, Wegerif’s argument could also be an explanation for the amount of ‘Non-rational Interpretation’ observed in the face to face discourse (25.8%), which was not observed in the on-line interactions.

Newman *et al.* (1996) present a similar point of view, when they argue that ‘face-to-face discussions in educational contexts are often designed to be, or can become, monologues, with silence filled by the teacher, or an exchange of unjustified opinions (1996:25). Similarly, Newman *et al.* (1997), in explaining that an asynchronous computer conferencing environment encourages considered, thoughtful contributions, declare that ‘a statement of opinion in a face-to-face discussion becomes an evidentially justified point in a computer conference message’ (1997:68).

In agreement with these arguments, Ellis (2001), and in discussing differences between face to face and on-line communication, coins the terms ‘nature of response-immediate versus more considered response’, i.e. the asynchronous nature of online forums lacks the immediacy of conversation, yet has the advantage of allowing a more considered response (2001:172).

With respect to comparative reflections on interaction and participation patterns in the present study, the on-line forum communication was indeed less interactive than the face to face one; however, content analysis of the on-line and face to face discourse illustrated that, although the on-line communication was less interactive, it was evidently more reflective (70.8%) and by comparison with the face to face discourse (66.4%).

Similarly, Mason (1992), and later Webb *et al.* (1994), note that a natural tendency to measure that which is most easily measurable has mistaken activity for learning, interaction for collaboration (Webb *et al.*, 1994:329). Hawkes and Romiszowski (2001) as well draw caution, when they argue that ‘talking, sharing, exploring, and analysing are important interactions in sense making and, by themselves, constitute key components in the critical reflection process; reflection is distinct from interaction, however, in that it requires a certain amount of self-disclosure about professional beliefs and practice’ (2001:297).

In this context, Pena-Shaff *et al.* (2001) suggest that the BBS (Bulletin Board System) maybe a useful tool for promoting critical thinking skills and reflective thought, although strategies need to be designed to increase students' interactions:

Most of the discussions in the BBS environment were well structured and developed. However, very few students had what can be considered genuine interactions with peers. The postings on the BBS resembled private arguments and analyses about an issue posted to a public bulletin board. In contrast, the IRC discussions showed more collaboration, social interaction and conflict. However, students spent more time socializing than focusing on the task at hand (2001:41).

In addition, another comparative observation of significance was the lack of conversation and dialogue similar to the one observed in the face to face forum, that is, the on-line forum posts did not build on previous messages, and there did not seem to be a sense of reaching a conclusion about the discussion as a group, or a sense of group consensus. Ellis (2001), although he reports on findings of on-line discussions with no fixed length of time to run specified, makes similar observations:

While discussion forums were started on a specific date, no fixed length of time for a discussion to run was specified, and only limited summing up was done. This caused a "petering out" of discussion. Three changes might have achieved better consensus; a fixed length of time for the discussion to run, better summing up during the forum and having students work in small groups online to present a group comment (2001:3).

The variation in the depth of reflexivity observed in the asynchronous and the face to face context, with the former achieving a higher score of 'Rational Interpretation' (70.6%) may also be justified by taking into account the time dimension. Although Schon appears to fail to appreciate the significance of the *time* variable in understanding professional behaviour, i.e. when he suggests a rapid intuitive process with little pause for thought, while the description of critical questioning suggests a more prolonged, deliberate process, Eraut (1995) presents a point of view of significance by challenging Schon's arguments (1995:14).

Specifically, Eraut (1995) argues convincingly that *time* limits the scope for reflection-in-action, little analysis is possible without deliberation, and that this requires more time than professionals have available; the concept does, therefore needs reframing, as ‘reflection-in-action, he argues, is essentially a meta-cognitive process (Day, 1995:3). Learners can elaborate their contributions without interruptions from co-present peers, which may suggest writing longer and more elaborated messages (Kern, 1995; Quinn, Mehan, Levin and Black, 1983 in Weinberger and Fischer, 2006:78).

In examining the object of reflection in participants’ contributions, one may notice that reflective comments in the face to face forum primarily concerned an individual’s own learning, particular teaching situations, or individual strengths and weaknesses (Sharpe and Bailey, 1999:181), and a considerable amount of life experiences sharing (32.6%), the latter not being evident in the on-line discourse.

These findings seem to confirm previous research findings, which demonstrate that the objects of reflection in the face to face setting seem to be primarily the moral, ethical, political, and instrumental issues embedded in teacher’s everyday thinking and practice (‘Core Reflection’, 4.5%), an approach which sees reflection as critical inquiry, and advocated by such authors as Zeichner (1983) and Carr and Kemmis (1986) (Korthagen and Wubbels, 1995:52).

In reflecting on the content of the discourse accomplished in both forums, my thoughts have been that the face to face forum encouraged participants to tell a story, their stories. Grant (1995) calls ‘story’ the linking together of individuals and events with time and causality:

In the face to face forum, practitioners engaged in a reflective dialogue through storytelling as a form of ‘representation of experience’ (Eisner, 1988) and as the way they ‘make meaning of their lives’ and these texts illuminate what Clandinin (1992) calls ‘personal practical knowledge’. Still, one might argue that this kind of storytelling ‘also fosters the development of conceptual understanding’ and it is through story that teachers, Grant argues, come to understand the foundation of reason and judgement underlying pedagogical actions. The processes of interpretation, along with reflection and transformation, characterize this storied mode of knowing (1995:88).

I feel that the absence of the ‘collaborative conversation’ and ‘storytelling’ elements in the electronic discourse, and which were very much evident in the face to face context, played a pivotal role in the lack of ‘Core Reflection’ outcomes in the on-line conferencing. Textual analysis of the on-line discourse revealed that 76.5% of the ‘Reflexio Act’ posts had a focus on professional experience, with only 17.6% of the incidents making reference to an individual learning experience, whilst the majority of the ‘Reflexio Act’ posts in the face to face forum primarily concerned an individual’s own learning (40.5%), with 32.6% of the incidents making reference to a personal life experience (the latter not being evident in the on-line discourse). It would appear then that when the focus of reflection relates to the individual’s own learning and life experiences, collaborative conversation and storytelling is encouraged and evidence of ‘Core Reflection’ is observed.

10.1.3 Research Question 3: What are the contextual factors which encourage or hinder reflexivity in an asynchronous computer mediated environment?

So, what are the factors that encourage or prohibit reflection in an electronic environment after all? A number of pertinent themes surfaced through the analysis of the data obtained from the On-line Forum Evaluation Questionnaire and the two telephone interviews, and they are outlined in the discussion that follows.

Access and Motivation

Romiszowski and Mason (2004) found that several networks in a study they carried out had their greater goals limited or prevented by the teachers’ technological proficiency, access to equipment, and the stability of the technology, to name a few of the reasons reported to influence the success of electronic networks (2004:412). The research findings in this study appear to concur with the literature.

Similarly, Maher and Jacob (2006) suggest that some teachers did in fact benefit from the use of CMC, although negative influences on teachers’ CMC experience included technological complications, lack of time and conceptual energy, and some teachers’ preference for face to face interactions (2006:127). The research findings of this empirical investigation appear to be no different either.

According to Macdonald (2003), students need to learn how to interact online with their peers, and inevitably the extent to which their interaction contributes to their learning and understanding will vary with their competency (2003:378). Salmon (2000) suggests that there may be a number of progressive stages involved in online learning, which include access and motivation, socialisation, information exchange, knowledge construction and development, and these stages illustrate the interplay between competence and affective factors such as growing confidence, motivation, and group dynamics (*ibid.*).

A significant implication that arises at this point is that of the interplay between low participation patterns and the notion of ‘lurking’ in electronic environments; Romiszowski and Mason (2004), in discussing the notion of ‘lurking’ in electronic discussions, state:

There is an assumption, one that has been insufficiently challenged in the research, of lurkers as passive recipients, rather than actively engaged in reading; reading cannot be assumed to be passive, as much reading, whether online or offline, can encompass active engagement, thought, even reflection on what has been read. The fact that it does not elicit an overt contribution to the discussion forum should not, as has generally been the case in CMC research, be taken to assume lack of such engagement, or of learning (2004:399).

Indeed, and in line with Romiszowski and Mason’s (2004) argument, one participant, during the telephone interview, expressed her concerns and hesitation to post an on-line comment after reading other participants’ responses to a discussion thread, arguing that because she agreed with the already posted responses, she found it ‘particularly difficult to add her own original comment’.

Ellis (2001) makes a point of significance when, in a similar context, makes reference to the term ‘Nature of Agreement’; that is, in a face to face discussion, he argues, agreement is gained from the group by such things as nodding one’s head and murmurs of agreement:

It is possible to “actively participate without making a verbal contribution” and this is something that is usually missing from the on-line discussion ... In other words, on-line forum participants might consider it to be redundant to post an on-line message writing ‘I agree’, therefore awareness of the group sense may only come from those actively participating (2001:172-176).

Still, Wegerif (1998) argues that Lave and Wenger's account of how someone is drawn into full participation depends upon a high degree of interactivity (1998:34). However, several studies have reported that threaded discussions do not encourage team building or group processes (Klemm *et al.*, 2005; Murphy and Coleman, 2004):

Some online environments culturally condition students to agree with each other and challenging each others ideas in discussion is considered a personal affront. There is little social discord [Rourke *et al.*, 1999] [Bullen, 1998] [Kanuka, 2002]. Vonderwell, in a 2003 study, found that students claimed to all have similar ideas and thus there was nothing to really talk about (Maurino, 2006:2).

In addition, a number of scholars have argued that the 'asynchronicity' of ALNs, which means that there is no pressure for an immediate response, allows for more reflection; however, 'synchronicity' is not always found to be helpful, especially for those who join in the discussion late and then find it difficult to catch up into a sense of being part of a dynamic conversation (Wegerif, 1998:43). Conversation is not closely structured by time because it is hermeneutical and dialectic and not argument or rhetoric, and it does not continue to a resolution but until the participants feel that it is 'time to move on', that it is time to end the conversation (Garrison *et al.*, 2000:94).

The issue of moderation was raised both in the questionnaire responses and also during the telephone interviews. Salmon (2002) suggests that, through the provision of opportunities for reflection-in-action at critical learning stages and with the support of a trained e-moderator, the participants in computer mediated conferencing (CMC) can be encouraged to engage in reflecting about their onscreen experiences; opportunities for reflection need to be built into the design of online conferences and facilitated by a trained e-moderator (2002:379).

The principal investigator assumed the role of observer and facilitator both in the on-line and the face to face context; however, in reflecting on the interactions that occurred in both forums, it seems that this role, although it allowed participants to formulate their own ideas and collaborate actively in the face to face forum, it proved to be at least inadequate in the on-line forum setting. As Garrison *et al.* (2000) put it: 'there might be room for the instructor's inevitable involvement in clarification and feedback on the students' discussions' (2000:94).

Social and Communicative Cues

Kiesler (1986) and Kiesler *et al.* (1984) have also investigated CMC based interactions and according to their research lack of social and communicative cues, combined with perceptions of the medium as ‘distancing’ and ‘cold’, leads to group polarization in CMC interactions; the conclusion from such research is that CMC is a medium that does not support social interaction and complex presentation of social identities (Yates, 1997:285). Similarly, Siegel *et al.* (1986) concur in asserting that ‘CMC reflects a shift of attentional focus from the social context to the content and context of the message, *sui generis*, arguing that a heightened self-consciousness or self-absorption in the message may produce less sociable and more uninhibited, or antinormative behaviour’ (1986:182). Indeed, the participants’ comments in this study appear to confirm the literature.

In a similar vein, Magee and Wheeler (1997), suggest that participants may have difficulties with the loss of non-verbal cues; they cite Love (1992) who found that the lack of social cues in electronic conferencing led to the subsequent development of ‘emoticons’ (figures created with character symbols on the keyboard that are used to convey the emotional context in which a line of text is typed) (Greig *et al.*, 2002:26-27). Love (1992) suggested that it was easy for a lack of a social dimension to group processes to lead to a drop in the number of contributions about the task (1997:15).

It has been noticed in research on people using low bandwidth systems that these users tend to send fewer messages during the same time period as those communicating face to face or via video conferencing (Hiltz *et al.*, 1986; Ogan, 1993; Walther, 1993); some online relationships may, therefore, be slower to develop, but given sufficient time strong relationships can form that are comparable with those formed face to face (Walther, 1993) (Preece and Maloney-Krichmar, 2003:13).

In this context, the findings of the present study appear to contradict Joinson’s (2001) findings, who argues that CMC is more ‘social’ than face to face interaction (2001:188), especially when considering that the present results indicate relatively similar levels of ‘Un-reflective/Other’ episodes, with the face to face discourse achieving 33.6%, and the on-line communication reaching an even lower fraction of 29.2%.

Learning in an On-line Community of Practice

Hawkes and Romiszowski (2001) explain that research by Feldman and others (Hollingsworth, 1994; Cochran-Smith and Lytle, 1993) illustrate the importance of dialogue in the development of teacher communities: collaborative conversation encourages relational knowledge that links what teachers learn and understand about their practice to other conditions that impact student learning, such as family influences and the educational setting; perhaps more important, collaborative settings are the likely contexts in which critically reflective exchanges about learning and instruction can take place between teachers (2001:276-287). These research findings appear to be in agreement with the present research outputs.

More recently, Hough *et al.* (2004), in a three years study investigating the use of an asynchronous web-based conference to facilitate reflective thinking, used a conceptual framework from the literature on teacher reflection, computer mediated communication and social cognition and found that constructs identified in the framework could influence the development of reflective thinking online (2004:361).

According to Martyn (2005), successfully fostering interaction in online communication requires incorporating both instructional and social types of interaction in discussion boards (2005:61-62). In order for collaborative online learning to take place successfully, it is crucial that the learner feels part of a learning community where his/her contributions add to a common knowledge pool and where a community spirit is fostered through social interactions (Bernard *et al.*, 2000:262); as one of the participants of this study declared ‘it would be great if a small community could be formed to help each other within their respective roles in the workplace [M]. Such an environment enables students, as learners, to form a community that works together, and shares the same social norms and culture:

This concept has been cultivated in Schon’s epistemology of professional practice. According to this view, when people learn a practice, they are initiated into the traditions of a community of practitioners. In the social context of the community they learn their conventions, constraints, languages and appreciative systems, and engage with their systematic knowledge (Schon, 1997). Laffey *et al.*, comment on the benefits of enabling this community of learners and mention that it encourages social discourse which provides important points of divergence for intellectual growth, it challenges students to think more deeply and sparks reflection (Kyriakidou, 1999:1).

The findings of the present study seem to confirm Na Ubon and Kimble's (2003) views who argue that to establish a collaborative online learning community (OLC), the sense of social presence must be created; social presence is one of the most important factors that helps people actively collaborate, thus increasing the sense of belonging and social cohesion to the community:

However, the creation of social presence in an OLC can be problematic due to the limitations of the communication media used, as lean media such as asynchronous text-based CMC suffer from a lack of nonverbal cues and contextual information, and this situation can make learning in online settings impersonal and de-motivating (2003: 295-300).

According to Hough *et al.* (2004), when the literature on computer-mediated communication was examined from a community of practice perspective, two common difficulties were evident: many of the programs that were examined either did not have an anchoring practice or question, or were expected to support too many practices, resulting in a lack of focus and role confusion for the participants, whilst other programs were composed entirely of beginners to a practice and did not have experienced participants, making it impossible to create opportunities for legitimate peripheral participation (Hough *et al.*, 2004:364).

Tolmie and Boyle (2000) also conducted a review of the literature and concluded that the critical factors are those which provide a context and rationale for online communication by helping users to establish a shared purpose (2000:119); these comments support Bruffee's (1993) definition of collaborative learning as 'a reculturative process that helps students become members of knowledge communities, whose common property is different from the common property of the knowledge communities they already belong to' (Koschmann, 1996:13).

Sharratt and Usoro (2003) describe the feeling of a sense of community (SoC) within a group as 'a feeling that members have of belonging ... that members matter to one another ... and a shared faith that members' needs will be met through their commitment to be together' (McMillan and Chavis, 1986:9):

SoC leads to a common perspective of knowledge as a public good, owned and maintained by the community (Wasko and Faraj, 2000). Thus, knowledge-sharing is likely to be motivated by moral obligation that results in a deeper sense of satisfaction than when motivated by extrinsic factors. A strong SoC will also lead to a greater degree of importance being placed on recognition of knowledge-sharing. This brings with it feelings of intrinsic satisfaction. Hence, H8: Where SoC is stronger, participation in knowledge-sharing will be greater (2003:191-192).

10.2 Contribution to Theory and Practice

This study has made two considerable contributions in the field of theory and practice, that is, the ‘Scheme of Indicators for Determining Evidence of Reflection’, which was grounded on the empirical data, and by exemplifying the theoretical framework underpinning the notion of reflection employed in this study, and an extensive critical discussion regarding research strategy and design considerations. Details of these contributions have been exemplified in detail throughout the thesis but a succinct summary of these contributions has been thought to be of value to the reader and in alignment with the objectives of the present chapter and, thus, a brief synopsis is outlined in what follows.

10.2.1 The Scheme of Indicators for Determining Evidence of Reflection

The theoretical framework underpinning the notion reflection as employed in this thesis emerged by consulting the literature and analyzing the empirical data, in an attempt to present a pragmatic view on what constitutes evidence of reflection, and how it may be represented in words or other symbols in the context of reporting on the research outputs.

The ‘Scheme of Indicators for Determining Evidence of Reflection’ portrayed in this study depicts the ‘depth’ of reflexivity in the episodes (reflective units) of the discourse analysed. The scheme reveals a process that spirals through emerging reflective dividends or ‘building blocks’ that lead to core reflexivity, which is the ultimate depth and with the desirable result being self-actualization/realization.

This could prove to be a useful tool for the education community as on-line communication mediums are increasingly being employed in the field of professional development and distance learning education. Further research testing the applicability

of the reflective indicators in other educational settings would be highly recommended in order to evaluate and/or aid the development of the scheme.

10.2.2 Research Design Considerations: Principles and Perspectives in the Analysis of the Empirical Investigation

The philosophical principles and the overall research strategy adopted in this study raise a number of possible implications concerning future methodological considerations.

Chapters 3 and 4 have reported on the principles and perspectives and the research approach underpinning the study by offering a comprehensive account on the philosophical axioms that may underpin research, considerations concerning the formulation of research questions, the decisions made in designing the research methodology, the process of collating the data (or evidence), the articulation of ideas that will help researchers make sense of the evidence and the course of action in making explicit arguments on the goodness of the evidence gathered.

In sum, I have argued that I feel comfortable to make the following claims for the present work: it is an inquiry that lies within an *interpretive* framework that assumes a *constructionist* view for its epistemological considerations and an ontological formulation within *constructionism*, which embraces the whole gamut of reality (i.e. reality is both objective and subjective), and that, in the present study, it adopts a *relationist construal* of its relativist premise. The study has also presented a view of how the present inquiry might fit nicely within the qualitative research campus whilst embracing causation, and by addressing a *prima facie* objection to the argument, arguing, and after Crotty (1998) for the case of intentionality in the approach to the formulation of the main research question in the study.

I situated my approach within the broader field of research designs by scrutinizing arguments in support of the quantitative and qualitative studies and the mixed methods research perspective. Following careful consideration of the debate and any evidence presented in the literature, this study, and after (Byram and Feng, 2004), does not follow the distinction frequently made between quantitative and qualitative research, as research which is explanatory in purpose can draw on quantitative and qualitative methods and data, as can research which is searching for understanding, or scholarship attempting to advocate and introduce new practices'

(2004:150). Instead, I have argued for a research study, bound ‘within the sciences of education, that seeks to establish explanation in terms of cause and effect, i.e. it is searching for a causal explanation of difference, where independent variables of two kinds – face to face and asynchronous – are compared for the outcomes in dependent variables.

I hope that the discussion unfolded in Section II of this thesis will make a contribution not only to contemporary debates in the broader field of research designs within the education community, but it will also act as a guiding resource, a ‘helpful hand’ or otherwise a quarry of ideas to research students or novice researchers embarking on the decision making process of defining the overall research strategy to be implemented in future empirical investigations.

10.3 Concluding Remarks

This chapter has offered a concise summary of the research findings, highlighting the pertinent themes that emerged in this thesis, and by drawing upon the pertinent literature. It did so by employing a unified approach in answering consecutively the research questions defined in Chapter 1, and by arguing for the contribution of this empirical work to theory and practice.

The chapter that follows is the last chapter in this thesis and it reflects on the emerging implications, proposing an agenda for future research, and concluding with some personal reflections on the assignment of carrying out the empirical investigation and writing this thesis and, in doing so, ‘bringing this thesis together’ in a conclusive manner.

Chapter 11

Enrichments and Epilogue

11.0 Introduction

This chapter has the word *Enrichments* in its title. Bearing in mind that ‘enrichment’ means adding to what we already have (Zull, 2002:8), I build on the preceding chapter by drawing on some final plausible conclusions, discussing emerging implications and proposing an agenda for future research.

Finally, the reader will find that I bring this chapter to an end with a short epilogue, and in doing so bringing this thesis to a close. The epilogue represents a portrait of some final personal reflections on the mission of carrying out the empirical investigation and writing this thesis, and where I briefly argue that my insights, my realities, my boundaries, my ideas, and my values, have all been enriched by initiating and concluding this empirical investigation, and that my perceptions about learning and knowledge have changed ‘from being about reality, to verifying reality, to creating reality’ (De Leur, 2007:1).

Last, but not least, the epilogue highlights the core contribution of this thesis in the research community by drawing attention to the utility of the ‘Scheme of Indicators for Determining Evidence of Reflection’ projected in this study, with its value being uniquely positioned in the field of contemporary deliberations, in that I have drawn connections and extensions of pertinent theoretical frameworks and philosophical schools of thought from Western and Eastern traditions, to expose an amalgamated portrait of reflection that embodies different traditions and multicultural

perspectives, drawing attention to the ‘self-mirroring’ act of one’s inner experience and awareness of self as an experienced reality and, thus, shifting the focus of contemporary deliberations and beyond the act of one’s thorough examination and intellectual argumentation of some external object or process.

11.1 Enrichments: Implications and Recommendations for Future Practice

The American science fiction author, Frank Herbert, argues that the beginning of knowledge is the discovery of something we do not understand. In discussing the ‘understanding and justifying debate’, Schwandt refers to the *weak holism* which claims that the background (the mediation of all understanding) is not strong enough to act as a fixed limit or to make it impossible to decide normatively between interpretations on the basis of evidence (Denzin and Lincoln, 2003b:314). Indeed, such evaluation will always be comparative, fallibilistic, and revisable, in that yet a better interpretation could come along, encompassing the strengths and overcoming the weaknesses of previous interpretations (Bohman, 1991:146).

What follows is a set of propositions for further empirical investigation which, and since many of the implications of these findings have already been discussed as they would arise and throughout the thesis, serves mainly to draw out some recurring themes and to set the agenda in the context of future research.

11.1.1 A Plea to the Education Community to Re-examine the Problematic Nature of Reflection

A recent report by the AERA Panel on Research on Teaching Education (edited by Cochran-Smith and Zeichner, 2005) presented an overview of the landscape of research on teaching education; this report notes that the most serious limitations ongoing research suffers from are a) unclear and inconsistent objects of study and definitions; b) no solid frameworks of reference; c) no full description about methods for collecting and analyzing data, and only very few longitudinal studies; d) no reliable measures of teacher knowledge and lack of mixed methods studies; e) lack of any common tradition for conceptualizing outcomes (Marcos and Tillema, 2006:114). This state of affairs must give us pause about our claims and any conclusions we draw

from these studies; it also throws into question the importance of any understandings gained from them (*ibid.*).

While the concept of reflection in education is not new, and much of the writing about reflection employs the work of Dewey (1933) as a reference point (Adler, 1991, 1990; Calderhead, 1989; Gilson, 1989; Farrah, 1988), the problematic nature of the concept and its definition raised within Dewey's writing has not been resolved (Smith and Hatton, 1992). This matter suggests that the research community should present more explicit accounts of the understandings they produce and the methods they employ to reach these understandings, by addressing the pertinent matter of 'what constitutes evidence of reflection' (first and second AERA limitations).

To address these issues, this study has projected a theoretical framework for reflection, which exemplifies 'what is being examined' in this study, and a scheme of indicators that illustrates 'what constitutes evidence of reflection', delineating which research criteria are being employed to study 'what is being examined' (first and second AERA limitations). In this context, this study is in alignment with the AERA panel recommendation which states that 'we need to develop reliable and valid outcome measures with consistent language and procedure' (Cochran-Smith and Zeichner, 2005:2).

It has already been argued that it would be useful if other researchers test the scheme of reflective indicators projected in this study in a variety of educational settings. If this study's claims are valid though, there are some important implications both for developing more effective strategies to promote reflection in a computer mediated setting and for those researching the evidence for such reflection. Both of these aspects require further investigation.

In addition, Day (1995), and in line with the findings of the present study, argues that the on-line forum appear to suits best when the goal of teacher education is to make teachers both technically competent and reflective, whilst a face to face context encourages non-rational aspect of reflection to take place (1995:5).

However, if there are differences in the quality of reflection between face to face and the on-line forums, as well as differences in quantity, the relevance of face to face evidence in the epistemology of the on-line forum practice becomes challenging, with the most evident dissimilarity in some cases being the presence of another person, that is the other person matters, in that, talking to someone in a face to face setting might not elicit a reflective conversation of a similar type to that in an on-line forum setting

(Eraut, 1995:17). Another challenge that refers to the non-verbal content is how do we measure this in the two settings? (ibid.).

Thus, further empirical investigation is required, not only in the context of testing the validity of the present projected scheme of reflective indicators in different educational settings but mainly as a result of a coordinated and committed effort by the education community to re-examine the problematic nature of reflection and the research method and approach by which we may identify what constitutes evidence of reflection.

11.1.2 A Necessity for a Sound Theoretical Basis for CPD based on the Aim of Promoting Reflection

The ‘Scheme of Indicators for Determining Evidence of Reflection’ which emerged during the analysis of the empirical data, argues for embracing a holistic approach to identifying reflexivity, the latter being embedded in a lifelong learning spiral of CPD. The model projected in this study argues for a ‘holistic reflexivity’ which should be seen in its whole spectrum, i.e. encompassing both cognitive and affective aspects of interpretation of an experience, and not just practical, every day teaching concerns. A way forward could be to encourage lifelong learning and establish a sound theoretical basis for CPD based on the aim of promoting reflection and by investigating additional approaches to facilitating reflexivity; Korthagen and Wubbels (1995) in this context argue:

However, no small amount of empirical research will be required to establish a sound theoretical basis for CPD based on the aim of promoting reflection: we believe that also for other approaches of the concept of reflection, a great deal of empirical research will be needed, if we are to leave behind the realm of vague notions and beliefs about the benefits of reflective teaching and the effects of programs designed to promote it (1995:70).

Similarly, Leonard and DeLacey (2002) argue that most of learning in life occurs in settings other than educational ones, with the reasons going beyond the fact that we spend more time outside of classrooms than in; much knowledge is deeply connected to context, and this is especially true of topics related to relationships with other people, such as management (2002:2). Two implications may be drawn from

these observations: 1) we need to build learning environments, not to design e-learning, and 2) we need to connect programs of learning to people's work (ibid.).

Leonard and DeLacey (2002) go on to argue that one of the clearest needs for professional education today is a link to daily work (situated learning) that results in immediate positive reinforcement from enhanced job performance (2002:3). Obviously not all aspects of an educational program would need to have this component, but relevance to work is highly valued by today's learners, and thus, projects in the work setting that would exemplify learning in context would be of further need (ibid.). As Zull (2002) reasonably argues, relevance is fundamental in learning in that, if people believe it is important to their lives, they will learn. It just happens; and, therefore, if we want people to learn, we must help them see how it matters in their lives (2002:52). Zull (2002) also draws on the American psychologist David Ausubel, who has argued that 'the single most important factor influencing learning is what the learner already knows. Ascertain this and teach him accordingly' (2002:91).

Critical to facilitating a sound theoretical framework for professional development is also the creation of a culture of collegiality, where teachers share tacit knowledge over time in a supportive environment; this view is consistent with socio-cognitive perspectives on learning that emphasize situated and collective meaning-making and social negotiation (Wideman and Owston, 2003:1). In this context, Seagren and Watwood (1996) convincingly argue that more information widens learning opportunities, but without interaction, learning is not enhanced (1996:514).

Similarly, the use of information technology does not of itself improve learning; successful e-learning takes place within a complex system, composed of many interrelated parts, where failures of only one part of that system can cause the entire initiative to fail (Alexander, 2001:241-243). For example, Smith (2000) points out that well structured and appropriately facilitated on-line discussion can provide a learning environment that allows the immediate application of new information to learners' personal and professional lives and is a forum where they can demonstrate their knowledge (Li, 2004:24-25).

This study's findings, and in the context of the interactivity and collaboration patterns observed in the on-line forum, appear to confirm Alexanders' (2001) arguments, and, thus, further empirical investigation in promoting and sustaining a

culture of collegiality in a computer mediated environment would be required, including identifying methods and aspects of facilitation of the on-line discussion.

11.1.3 Practitioners are Urged to Take Responsibility for their Own Professional Development

Recent on-line education supports developmental and innovative approaches to professional practice through communication, collaboration and reflection that can enhance teacher development (Son, 2004:118). CMC can help teachers improve their knowledge and collaborate in their learning with fellow teachers; through such practical experience in on-line interactions, teachers develop their ability to use CMC tools and communicate with other teachers for their professional development, with a range of CMC tools available to teachers, waiting to be explored and used for learning and teaching (*ibid.*).

Teachers as ‘lifelong learners’ can be expected to learn over time and critically reflect on their current state of knowledge and competence, in order to take a proactive approach to achieving change; research by Pickering (2007) into CPD suggests that the most effective teacher learning is based on harnessing the experiences of teachers themselves, so that three key processes can take place, that is, self-aware engagement with their learning and consideration about their learning, real collaboration that leads to change in practice, and a growing sense of responsibility for their CPD (Becta, 2009:27).

In this context, an important task for teachers is to develop their competencies in e-learning (Son, 2004:117). CMC can make a significant contribution to on-line teacher development, and in using CMC tools for the implementation of e-learning, teachers need to, for example, explore current development and use of CMC, choose appropriate CMC tools and learn how to use them with confidence (*ibid.*).

However, this transformation will not happen if left to chance; institutional investment in computer hardware and software will not yield excellence in teaching without similar input into the funding of staff development in the necessary pedagogical skills, and herein lies the potential for collaborative work between schools and universities to further improve pre-teacher training and professional development opportunities (Anderson and Baskin, 2002:135-136).

I concur with Moonen and Voogt (1998) who argue that in order for educational technology infusion to occur in education, teachers need more than just knowledge about educational technology, they need practical examples and ideas, and they need coaching and mentoring when they are trying new technologies (1998:103). Besides knowledge about educational technology, teachers need examples and assistance in the incorporation process in order to implement information and communication technologies (*ibid.*).

Trentin (1997) argues that for effective learning, the advantages need to be positively exploited, while the disadvantages should be overcome by providing adequate support for the learner; in response to this challenge, CMC can be used to reduce the difficulties in communication and the feeling of isolation, and also make the educational process more flexible (Trentin, 1997 in Son, 2002:128). For example, with the recent advances in ICT and ICT infrastructures in schools, on-line environments can be created and used in a meaningful way to support teachers' professional practice and routines; these on-line environments can be designed to nurture the development of on-line learning communities to facilitate teacher professional development and are a new trend in education (Lock, 2006:1).

In this context, Day (1999) appears to espouse the establishment of networks as powerful sites of teacher learning, but pragmatically he also identifies the need to invest in teachers and schools in order to provide sustained professional development for teacher (Campbell, 2003:380), and thus raising significant implications in the context of policy making for teachers' professional development.

11.1.4 A Requirement for a Detailed Agenda for Future Interdisciplinary Research in On-line Learning Communities

The axiom of humanity's basic need to communicate provides the impetus to explore the nature and quality of computer mediated communication as a vehicle for learning (Grooms, 2003:1). Investigating the use of CMC has many facets and aspects; web utopians are predicting virtual universities with very low cost learning and truly effective 'any time, any place' student interaction, arguing that the need for expensive campus buildings or large corporate training facilities will disappear along with the requirement for learners to physically congregate (Salmon, 2000:vii). On the other hand, the 'Web-phobes' are very worried that the benefits of learning together

may be lost and that it will be a bad day for knowledge, for feelings, for the joys of gatherings and groups (ibid.).

Indeed, the web makes it possible to integrate synchronous and asynchronous technologies so that users can benefit from both; for example, messages are left on boards or sent via email to coordinate and schedule chat or virtual world sessions, instant messages are used to signal that a document has been posted for review and so on (Preece and Maloney-Krichmar, 2003:15). These combinations of technologies and the web site on which they reside provide a richer basis for community than any single technology could on its own; they are the community (ibid.).

Carr and Chambers (2006) suggest two main reasons for why on-line communities have been slow to develop effective support for CPD: schools do not adequately value collegial reflective sharing of practice, and classroom teachers do not use on-line communication tools as an integral part of their professional practices (2006:269). A lack of a reflective culture and a lack of time to devote to developing one appear to be the key obstacles for the on-line communities being slow in developing effective support for CPD; in addition, although on-line learning communities in teachers' CPD are now gaining momentum, this is still undeveloped in terms of evaluation of impact on transforming knowledge to change practice (Daly *et al.*, 2009:36).

Furthermore, users of technology require time and comfort to communicate meaningfully; Carabajal *et al.* (2003) have conveyed the importance of the nature of group development in the formation, development, and accomplishment of tasks within a group over time and Evans-Andris (1995) have described three styles of computer use (avoidance, integration, and specialization) that teachers proceed through as they become more experienced (Lucey *et al.*, 2009:200). Unfortunately, schools tend not to provide teachers with sufficient release time for technology training (Brand, 1998; Farenga and Joyce, 2001). The various factors that influenced this experience (appropriate learning support, technology use acceptance, and safe community induction) suggest that on-line community results from factors that require thoughtful planning (ibid.).

On-line community takes time to evolve (Cox, 1997) and requires support in the form of professional, experienced on-line learning (White, 2001); strategies such as ice breakers, seeding, an explicit statement of expectation regarding participation and congeniality, and guidelines for effective on-line behaviours need to be built into the

induction (Chapman *et al.*, 2005:219). A further issue is that on-line forums often are not self-managing, with the unresolved and under-researched question being who should be managing or moderating these, and under what conditions (Daly *et al.*, 2009:36).

A detailed agenda for future interdisciplinary research on-line (Brown, 1999; Brown *et al.*, 1999) would involve researchers looking into applications of fundamental community concepts from the social sciences to understand on-line communities, e.g., social dilemma, reciprocity, weak and strong ties; development of new theories that explain social interaction on-line and techniques for showing and supporting social interaction; comparative studies of on-line communities that look for similarities and differences; case studies of the relationship between physical-virtual relationships, particularly the roles that on-line communities play in people's lives; development methods, frameworks to support sociability and usability in on-line community development, and techniques and measures for assessing the success of on-line communities (Preece and Maloney-Krichmar, 2003:46).

Similarly, a detailed agenda for practitioners could be set as well; creating development processes that take account of sociability and usability, i.e. every community is different and, thus, it is essential to pay attention to the details of its purpose and the needs of the members; paying attention to different stages of development of on-line communities and be sure to provide moderator support early in the community's life; continue working to find ways to integrate asynchronous and synchronous software so that users are not shocked by a new interface; developing ways of scaling on-line communities to support large numbers of people from different cultures, with different kinds of experience using a variety of equipment for a variety of purposes (e.g., political communities, health communities, cultural communities) (*ibid.*).

11.1.5 A Broad Research Agenda is Required to Investigate the Social, Affective, and Cognitive Processes in Computer Mediated Collaborative Learning

Preece (2000) argues that communicating via the internet is no substitute for actual human interaction: a virtual hug, shown in the form of two parentheses – () – is certainly not as warm, comfortable, and satisfying as a real hug, and sharing a nourishing, tasty meal is impossible in cyberspace (2000:28). Johnson and Buck

(2007) in a study examining asynchronous and synchronous on-line discussion found that student perception of learning may reflect personality characteristics such as sociability, and that, if given free choice of on-line discussion tools, highly social students are likely to choose synchronous formats (2007:2).

A key aspect of establishing social presence in face-to-face settings is visual cues but when computer conference participants have never met, the lack of visual cues may present particular challenges to establishing social presence (Garrison *et al.*, 2000:103).

The congruency of research findings that identify challenges with lack of visual cues, peer interaction, information management and working collaboratively over the past two decades (Burge, 1994; Wisenberg and Hutton, 1996; Murphy and Coleman, 2004) suggests that, in spite of increased experience with on-line discussions, there may not always be a concomitant improvement in the quality, effectiveness and benefits of that experience (Hsiao, 2000:5). That said, individuals' orientations to learning in this environment vary considerably, and factors such as gender, motivation and prior experience are worth further exploration to ascertain their impact on interaction activity (Pachler and Daly, 2006:66-67).

For example, Walther (1994) and Kuehn (1993) describe how participants develop techniques such as use of emoticons or other unconventional symbolic displays to add affective components to computer mediated dialogue (Garrison *et al.*, 2000:103). Further research on the thoughtful and innovative use of technologies to overcome social presence barriers in electronic environments would be needed, so that learners may be empowered and benefit from social distributions of cognition (Hsiao, 2000:5).

Baskin *et al.* (2004) in a paper examining the dimensions of social presence in on-line and face to face episodes, found that an increase in the level of online interaction occurs with an improved level of social presence (2004:1). While comparisons between face-to-face and ICT supported learning episodes can be used to inform all aspects of our teaching, they argue, the paper concludes that knowledge construction in an ICT setting can be enhanced by considering learner characteristics, by selecting the appropriate ICT-mediated communication medium, and by applying appropriate instructional elements to course design (*ibid.*).

Yoo and Alavi (2001) have called for additional research on media conditions and social factors that influence how individual group members perceive and use

technology and for additional research involving social structures created by CMC (Lowry *et al.*, 2006:633). Several other studies, in considering the group communication aspects of collaboration, have examined group member or minority influence in group decision making (Dennis, Hilmer, and Taylor, 1998; McLoed, Baron, Marti, and Yoon, 1997), and others have looked at group member voice in decision making (Roberts *et al.*, 2006) (*ibid.*).

Involving participants in software design, helps to ensure their social and political needs are taken into account (Eason, 1988; Mumford, 1983; Greenbaum and Kyng, 1991; Muller, 1992; Schuler, 1994; Schuler and Namioka, 1993); what makes online communities different from most other software development is that communities evolve continuously because community is a process not an entity (Fernback, 1999) (Preece and Maloney-Krichmar, 2003:21). The role of community developers and managers is therefore to start this evolution by providing suitably designed software and to help guide the community's social evolution (*ibid.*).

However, it is important to distinguish potential from reality (Schwartz, 1995). First, computer-mediated activities can be used to reinforce traditional 'transmission' approaches to teaching and learning as well as collaborative approaches; second, even when educators intend to implement technology-based innovations, they are largely constrained by institutional and societal expectations (Cuban, 1986, 1993), with the result that technologies seldom have the transformational effect intended (Warschauer, 1997:478). A broad research agenda is required to gain a better understanding of the social, affective, and cognitive processes involved in computer-mediated collaborative learning (*ibid.*).

11.1.6 A Requirement for Educators to Change their Perceptions of Professional Development

This calls for educators to develop new images of ongoing opportunities for professional development, based on their needs within an on-line community of learners and their recognition that communities may include individuals from local regions and from around the world who share mutual interests and goals; the realization of on-line learning communities to facilitate teacher professional development is a matter of carefully and deliberately designing dynamic learning environments that foster a learning culture:

This requires a pedagogical framework that nurtures the establishment of relationships, intimacy, and trust, where people engage in shared learning experiences mediated through technology. Designing an on-line learning environment that fosters the development of a learning community is not about adding technology on to current professional development practices. Rather, it is about designing, building, and supporting a structure and a process that are purposeful and fluid in nature and in meeting the personal ongoing professional development needs of teachers (Lock, 2006:663).

This matter raises implications for policy makers as well in the sense that it is critical for key educational stakeholders to consider how communities can be interwoven throughout teachers' professional practices and routines, the curriculum, the institution and globally within professional organizations and professional thinking (ibid.). Similarly, Russell and McGuigan (2008) see a need for national stakeholders to take a lead:

A strategic approach to any such programme of professional development will need to be done through the relevant agencies. This would include the Training Development Agency (TDA), the National College for School Leadership (NCSL) and the General Teaching Council (GTC). The programme should also encourage collaborative working between BESD and mainstream schools (2008:7).

In this context, it would also be of relevance to emphasize that policy tensions have significant effects on competing priorities for CPD and on teachers' choices about what to focus on within limited time constraints (Daly *et al.*, 2009:23-24). Hardy (2008) has put forward strong evidence that professional development practices suffer when schools experience pressures to work with multiple initiatives which are of a complex nature; the pressure to respond quickly to each reform agenda damages the qualitative achievements of CPD in each of them and such pressures are actually counter-productive to making a sustainable long-term impact, ultimately militated against policy support for more context-specific, long-term, inquiry-based, collaborative professional development practices (2008:103). The development of a more effective policy-making in this context appears to be of prominent need.

I shall bring this section into a close by quoting Sprague (2006:660-661) who poses a number of research questions to guide future empirical studies in the context of on-line teacher professional development (oTPD) and amongst other the following:

1. What is the depth and scope really required in professional development to allow for fundamental shifts in practice and to have an impact on learning? How do we know what's working?
2. How do contextual factors and barriers to change, prevent teacher transformation from occurring even when the oTPD program has an impact? What factors need to be overcome in order for the oTPD to have an impact on learning?
3. What patterns of transformation in teachers do we see after they engage in professional development? Are they assimilating the information or are they accommodating changes in their practice?
4. What impact will emerging technologies (such as blogs, podcasts, RSS feeds) have on oTPD? Will these technologies allow teachers to take more ownership of their own learning? If so, under what conditions?

I concur with Sprague (2006) that some of these questions are not easy to address and that they force us to look beyond technology as a saviour to the woes of education and, instead, to examine the potential and limitations of both technology and our own understandings of learning (2006:661). However, if online teacher professional development is truly to have an impact on teaching and learning then we, as a field, must be willing to wrestle with these questions (*ibid.*).

11.2 Concluding and Looking Ahead: Towards a Judicious Blending of Approaches?

The research findings of this study lend support to the view that although reflexivity can be accomplished in an asynchronous computer mediated environment, the recurring theme of storytelling observed in the face to face discourse appears to cultivate and influence the depth of reflexivity achieved. As Polkinghorne (1988) argues, narrative is the fundamental scheme for linking individual human actions and

events into interrelated aspects of an understandable composite...a meaning structure that organizes events and human actions into a whole, thereby attributing significance to individual actions and events according to their effect on the whole (1988:13-14). As a way of knowing, narrative enables the storyteller to organize the story told by linking events, perceptions, and experiences or, as Joan Didion (1961), suggests narrative fills the space between 'what happened' and 'what it means' (Kramp, 2004:106).

In addition, social and communicative cues have been found to be relatively weak in the computer mediated discourse. Similar findings were presented by Hough *et al.* (2004) who, in investigating the essential supports and constraints of teacher reflection found in computer-mediated environments for beginning teachers, argue that, more successful conferences tend to support trust among the members through efforts to build community and encourage feelings of ownership (2004:374).

Preece (2000) argues that communicating via the internet is no substitute for actual human interaction: a virtual hug, shown in the form of two parentheses – () – is certainly not as warm, comfortable, and satisfying as a real hug; and sharing a nourishing, tasty meal is impossible in cyberspace (2000:28). In this thesis, surely, I do not wish to argue that computer mediated technologies can substitute the face to face communication, as analysis revealed, and after Tu (2000), that CMC systems enhance *and* inhibit on-line interaction:

The user's perceptions and the attributes of CMC that enhance interactions must both be examined. The successful use of CMC in the classroom requires the selection of the correct CMC medium and group specific instructional design. CMC does not replace face-to-face communication. CMC provides a more flexible delivery and a greater selection of communication channels for online users. The users are able to optimize their communication, on-line image (face), and on-line impression easier than in face to face encounters that require the simultaneous use of all communication channels (2000:39).

I concur with Anderson and Baskin (2002) who argue that the on-line environment is not a panacea for better teaching and learning outcomes and that the value of the on-line environment lies in its capacity to enable our collaborative knowledge about teaching and learning to interact so that each becomes a structuring, and constitutive resource for the other (2002:126).

Blended models of teacher professional development have potential to succeed in sustaining engagement through a better level of social presence than is possible in purely online models; this is especially so when teacher development is conceived and conducted in collaborative ways involving a variety of stakeholders (Anderson and Henderson, 2004:391). Social presence can be increased in blended and online contexts by various means such as mandating reflective group tasks, increasing the use of asynchronous communication, judicious use of audio and video files, and by framing the overall process in a way that is participant driven (*ibid.*). Similarly, Tiene's (2000) conclusions suggest that contexts in which some face-to-face interaction is combined with use of a discussion forum may lessen learners' dependence on or preference for verbal cues and gestures (Murphy and Coleman, 2004:1).

Bruckman (1999), on the other hand, argues for the need for more innovative thinking and careful, self critical research by comparing distance education, in its most simple-minded form, as a horseless carriage:

People are trying to understand a new medium (cars, education on the internet) in the terms of an old medium (horse-drawn carriages, lectures) without recognizing that the new medium has different affordances. Educational use of the internet needn't be an impoverished, literal-minded version of traditional instruction. More innovative thinking and careful, self critical research is required to understand how to use this new medium to best advantage (1999:45).

In a similar vein, Carroll (2000) draws attention to the fact that communication technologies support an interactive construction of information and that it is a new technology being used for the old one-way knowledge transmission learning mode: 'we will not get out of our wooden ship schools until we use communication technologies for two-way interactivity that allows us to collaboratively construct the learning experience and new knowledge' (2000:132).

One thing is for sure; developing and promoting teachers' professional development by utilizing online networks will require efforts to 'achieve the benefits and limit or overcome the challenge's (Murphy and Coleman, 2004:1). More innovative thinking and careful, self critical research is required to understand how to use this new medium to best advantage (Bruckman, 1999:45).

11.3 Epilogue: Personal Reflections

The preceding discussion has drawn on some final plausible conclusions, by discussing emerging implications and proposing an agenda for future research. I now wish to bring this chapter to an end with a short epilogue, where I portray some final personal reflections on the mission of carrying out the empirical investigation and writing this thesis and, in doing so, bring this thesis to a close.

Writing a thesis has been named a laborious task by many. For me, writing this thesis has been about taking the journey ‘inward in a great and human and spiritual awakening, a journey that starts from the familiar world and moves through confusion, adventure, great highs and lows, struggle and uncertainty towards a new world, in which nothing is different, yet all is transformed — its meaning has profoundly changed’ (Daloz, 1986 in Joy-Matthews *et al.*, 2004:118).

Indeed, it has been a long journey, not so much in terms of time, but in terms of personal and professional growth: reflecting on how we construct our meanings and our realities, wondering about the shaping of mind by history and culture (Bruner, 1990:xi), contemplating in solitude, discovering, cultivating beliefs, values and the inner self.

Maslow (1970) sees the goal of learning to be self-actualization, the full use of talents, capacities, and potentialities (1970:150). He conceives of growth toward this goal as being determined by the relationship of two sets of forces operating within each individual:

One set clings to safety and defensiveness out of fear, tending to regress backward, hanging on to the past...The other set of forces impels him forward toward wholeness to self and uniqueness of Self, toward full functioning of all his capacities...We grow forward when the delights of growth and anxieties of safety are greater than the anxieties of growth and the delights of safety (Maslow, 1972 in Knowles, 1990:15).

I think I have experienced what Maslow articulates as ‘growing forward when the delights of growth and anxieties of safety are greater than the anxieties of growth and the delights of safety’ by choosing ‘the swampy lowlands’, as Schon (1983) articulates one of his outlined options within professional practice:

There are those who choose the swampy lowlands. They deliberately involve themselves in messy but crucially important problems. When asked to describe their methods of inquiry, they speak of experience, trial and error, intuition and muddling through. Other professionals opt for the high ground. Hungry for technical rigour, devoted to an image of solid technical competence, or fearful of entering a world in which they feel they do not know what they are doing, they choose to confine themselves to a narrowly technical practice (Day, 1993:92).

To the above, I would also like to add that I was particularly pleased to discover that Day (1993) has argued that ‘it is tempting to suggest that the future for those who wish to contribute to professional development lies in choosing the lowlands’ (1993:92). Being optimistic about the future, I concur with Day that this should be the case.

In contemplating now on the value of my contribution to the education community by writing this thesis, I feel I have presented overall an interesting and timely topic, and evidenced scholarly research with regard to the existing research in the field, with Chapters 2 and 3, ‘Mapping the Terrain: A Critical Analysis of the Pertinent Literature’ and ‘Social Science Research: Principles and Perspectives’ respectively, demonstrating similarly a scholarly approach.

Still, I feel the major contribution of this thesis is the projected ‘Scheme of Indicators for Determining Evidence of Reflection’, which, in my opinion, is being uniquely positioned in the field of contemporary deliberations about reflection and its assessment, in that I have drawn connections and extensions of pertinent theoretical frameworks and philosophical schools of thought from Western and Eastern traditions, to expose an amalgamated portrait of reflection that embodies different traditions and multicultural perspectives, drawing attention to the ‘self-mirroring’ act of one’s inner experience and awareness of self as an experienced reality and, thus, shifting the focus of contemporary deliberations and beyond the act of one’s thorough examination and intellectual argumentation of some external object or process.

Pertinent philosophical and theoretical frameworks then have been the lens through which the Scheme of Indicators was developed and the empirical data were interpreted in this study. The coding scheme of indicators emerged by employing a meticulous, cross examination method, utilizing more than two approaches to the investigation process. It was developed inductively by a) analyzing the empirical data, whilst employing the method of constant comparison (Glaser and Strauss, 1967) and

the step model of inductive category (Mayring, 2000), b) reviewing existing pertinent guiding theories and hypotheses, whilst bearing in mind Glaser's (1998) advice guarding against preconceived received codes, following diagrams, and so forth (1998:94), and c) examining seminal philosophical schools of thoughts from Western and Eastern traditions.

In sum, I have argued that the scheme projects a concept of reflection as a 'meaning – making process' (Dewey, 1916/1944) and a 'discursive tool mediating learning' (Ottesen, 2007:32). A view of reflection based on socio-cultural perspectives on human activity is advanced, recognizing reflection as action embedded in societal activities (*ibid.*) and embracing the whole gamut of one's life experiences, as it progresses gradually in terms of awakening, cultivation, and transformation (Connelly and Clandinin 1995:82).

Through this notion of 'holistic reflexivity' projected in this thesis, the whole of the person is engaged, and the intellectual, moral, and emotional growth of the individual – as Dewey (1916/1944) conceptualizes the purpose of education – is observed, and eventually 'self control' and 'integration with nature' may be accomplished (Confucius).

In other words, I see reflection as a life process that spirals through a number of in-built stages; these stages may serve different purposes and vary depending on the focus or the context in which they appear to surface. Schon's concept of reflection focuses on present action, whilst Dewey's work on future action. In a sense, I pursue an alternative epistemology of professional development practice that goes beyond concentrating on a thorough investigation of 'reflection in action' and 'technical rationality'.

Nevertheless, and in contemplating on the value of my contribution to the education community, I have to bear in mind that, regardless of the care taken with the co-construction of interpretations, the final research product (e.g., case study, documentary film, journal article report of findings), by its nature, will be partial, open to contest, and incomplete (Phillips, 1990):

A high-quality inquiry product does not lay out the research interpretations as ready answers for the reader. Rather, the text should be written with latitude for the respondents and other consumers of the inquiry to compose his or her interpretations (Atkinson, 1990) and conceive his or her own interpretations.

In a similar vein, Lather (1995) argues that the significance of the final product will not be exhausted by the meaning attributed to it by any one person (1995:59) but rather readers, respondents, research community members, and stakeholders will see new things in the data as they bring interpretively different lenses to each reading of the final research product; as such, the research remains dynamic and open for interpretation (Manning, 1997):

As a living document open to amendment and exegesis, the final report is never complete, only finished. Meaning grows from the co-constructed themes in the research product as the reader adds his or her personal experience into an interpretive reading. The research product takes on a life of its own, diverging in ways unanticipated by researcher or respondents (1997:110).

Finally, I would like to draw from Kvale (1989), who echoes a concern about the validity of the validity question, highlighting the danger of the more one validates, the greater the need for further validation; the quest for certainty may entail a sceptical attitude, which by continually asking for valid proof may further enhance the sceptical attitude:

It is difficult to get out of this validation paradox. An ideal solution would be to conduct investigations so convincingly that appeals to external certification, or official validity stamps of approval, appear superfluous. Ideally, the procedures would be transparent and the results evident, the conclusions of a study intrinsically convincing as true, beautiful and good (1989:90).

I would like to hold on to Kvale's view that, ideally, 'the procedures would be transparent and the results evident, the conclusions of a study intrinsically convincing as true, beautiful and good', for I would like to envisage that I have worked towards this end.