Learning during online and blended courses

Volume I

Shalni Gulati

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Department of Education and Lifelong Learning, School of Arts

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Abstract

Over the last decade online learning technologies have proliferated in higher education institutions. It is suggested that online technologies can enable flexible and accessible learning for busy professional learners with different learning needs. Broadly speaking, online pedagogy emphasises either transmissive or social constructivist models of learning. The transmissive approach is manifest in the use of information technologies that upload and transmit training resources, whilst social constructivist approaches tend to favour the use of active participation in learning, especially through opportunities for online discussion. Such practices are based on different assumptions about how different learners might experience and use the new technologies. However, the growing emphasis on participation in online discussion assumes that those who do not participate are missing out on the learning opportunities provided, and that all learners benefit in the same ways from the same learning processes.

This doctoral research challenges this assumption, and sought to examine how ways of knowing varied for learners according to whether they were active, moderate or silent participants in online discussions. The research was based in the constructivist paradigm, using Kelly's (1970) Personal Construct Theory and the Repertory Grid Method to elicit how twenty-nine learners constructed meaning, in eight postgraduate professional courses that emphasised online discussion participation. The research used interviews and visualisation techniques. Data were analysed using factor analysis and qualitative analysis using the grounded theory approach to extract and compare learners' knowledge construction processes.

The analysis highlighted personal control and emotions as the main personal constructs which influenced different learners' participation in chosen and required learning activities including online discussion participation. All learners wanted to create positive online social identities before they could engage in deeper online discourse. The analysis identified complex social psychological processes and practical factors that explained why some learners felt greater control and positive emotions during online discussions and were able to construct positive online identities as compared to others. The research evidence showed that online discussion participation empowered some learners and not others. The evidence of knowledge construction by silent learners suggested that despite their online silence these learners were engaged in social construction of meaning.

The research contributes to the presently under-conceptualised field of online learning practice. It challenges, conceptualises and theorises the contemporary emphasis on online discussions in online learning. The grounded theory approach has led to a set of theoretical tenets and hypotheses and offers an emerging view of practice that might support online practitioners in helping their students to develop learning strategies. The conclusions emphasise that on one way of knowing, such as online discussion participation, may not fit different learners' knowledge construction processes. In particular, the research strongly recommends that technology use in learning needs to consider the significance professional adult learners place on personal control and positive emotions during learning. The research findings and recommendations highlight the need to put the learner before the learning design, and learning before technology.

Abbreviations

ALN	Asynchronous Learning Network
DfES	Department for Education and Skills
HEI	Higher Education Institution
Int 1	Interview 1 (first interview)
Int 2	Interview 2 (feedback interview)
IT	Information Technology
PCT	Personal Construct Theory
SPSS	Statistics Package for Social Sciences
UK	United Kingdom
USA	United States of America
VLE	Virtual Learning Environment

Chapter 1

Introduction

The past ten years have seen a proliferation of information technology in our daily lives (Gustavasson 2002, 13). There is also an increasing emphasis on lifelong learning where citizens can participate in building a knowledge economy (Edwards et al 1998). The political and educational institutions in the UK are engrossed in efforts to promote lifelong learning, knowledge economy and employability through widening participation and increasing access to non-traditional learners (Bentley 2001, 8). The last decade has also seen an increase in online learning technologies use in higher education. It is suggested that online technologies enable more flexible and accessible learning for professional adult learners with busy lifestyles and varying learning needs (Hughes 2005, 69). These political and technological developments pose ethical, philosophical and practical predicaments for academics involved in the so-called production and construction of knowledge. It begs the question how are the changes in our social, economic and technological realities influencing our ability to engage in learning (Guatavasson 2002, 14; Field 2001, 4)?

This research examined how professional postgraduate learners' constructed meaning in online and blended courses that used online discussion tools. The thesis is divided into eight chapters. The first chapter sets the background and context for the research. The discussion reveals the policy and educational practices that endorse information technology developments in teaching environments. This follows the research rationale that challenges the effectiveness of popular online teaching strategies and their emphasis on online discussion participation. The research hypothesis, questions and objectives outline the need for empirical evidence of learners' engagement and knowledge construction during online and blended courses that require participation in online discussions. The second part of the chapter sets the stage for the following chapters.

1.1 Information technology in higher education

Recent years have seen a gradual rise of information technology (IT) applications in the formal education environments. In the UK, government policies including the Dearing Report (DfES 1997 Chapter 4, Section 5), the White Paper on Higher Education (DfES 2003, 65), and the E-learning Strategy Consultation Document (DfES 2004) endorse the need to embed e-learning across the education and skills sectors. In the past five to ten years, the government policy has made elaborate claims about what IT and electronic networking can do for lifelong learning and flexibility in learning (Elliot 2001, 14). These policies regard information technology as an important driver for future socio-economic and professional developments. They suggest that the introduction of information technology in education will make learning more accessible for adults with work and domestic responsibilities and will raise standards in education.

> *"E-learning exploits interactive technologies and communication systems to improve the learning experience. It has the potential to transform the way we teach and learn across the board. It can raise standards, and widen participation in lifelong learning. It cannot replace teachers and lecturers, but alongside existing methods it can enhance the quality and reach of their teaching." (DfES 2003)*

In this policy discourse, some have also identified online learning as an opportunity to

> *"...free learning from the traditional confines of educational institutions" (Selwyn et al 2002, 23).*

The language used in these policies is factual and makes almost irrefutable claims about the benefits of IT use in teaching and learning. According to Nicoll and Edwards (2004, 49) such a rationalistic rhetoric undermines the possibilities of any alternative description. The e-learning policy discourse has successfully mobilised the higher education institutions to develop and market online and blended versions of popular courses. The acceptance of technology as an obvious tool for higher education to improve access, flexibility, and quality of learning (DfES 2003, 64) is taking place with limited empirical questioning of the popular rhetoric and the claims made.

The past seven years have seen large financial investments by the UK government into targeted projects such as the UK e-University (UKeU), National Health Service University (NHSU), and Joint Information Systems Committee (JISC). These projects were set up to achieve the government's vision for UK to become a leading knowledge economy. The UKeU and the NHSU have since closed with large financial losses. Garrett (2004, 6) suggests the reason for UKeU closures included,

> *"...massive up-front investments, lack of private sector cash, low enrolments, brand confusion, and incomplete platform meant that by 2004 UKeU was doomed".*

There may be various unexamined reasons for the downfall of the UKeU and the NHSU. One reason may the non-critical enthusiasm to use technologies rather than pedagogy as the driver for educational change (Gulati 2004, Section 2). On the other hand, JISC that is not a provider but a supporter of e-learning innovations and research development (JISC 2001, 3) continues to evolve as the field opens up to questions for research and practice development.

A growing number of educationalists also advocate information technology to enable increased access and informality in higher education (Twigg 2002, 3). In the contemporary online learning pedagogies the emphasis is on either transmissive or social constructivist model of learning. The transmissive approach is manifest in the transmission of large quantities of learning resources for anywhere, anytime and anyplace access to suit the learners. The social constructivist theory is purported through the growing emphasis on online discussion participation during online and blended courses. The growth in media and technologies including live chat, video and audio conferencing, asynchronous discussion boards and email has broadened the scope for social learning in distance and face-to-face courses.

In response to the emerging educational and political rhetoric, and in order to take advantage of the emerging technologies, the UK higher and further education institutions are investing time, money and effort (Carr 2001) into the new technologies and personnel support. Since the mid to late 1990's the Higher Education Institutions (HEIs) in the developed and developing countries have invested in commercially developed Virtual Learning Environments (VLE) (Slater 2005, section 2; Epper and Garn 2004, 28; Oliver and Dempster 2002, 2). The most

popularly used VLEs are Blackboard and WebCT (Morgan 2003, Weigel 2005, 1). Some institutions have developed their own virtual learning environments using open source or other software sources (Metcalf 2004, 23). The adoption of new technologies in education has also led to investment in new roles including e-learning managers, learning technologists and instructional designers (Harrington et al 2004, Gulati 2004, Section 1).

At the pedagogic level, online enthusiasts and course designers emphasise the use of online communication technologies embedded in the VLEs to promote interactive, collaborative and socially constructivist learning (Salmon 2000, 29; Klemm 1998, 62; Corich, Kinshuk, and Hunt 2004, 1). In a typical online learning scenario, educators design online tasks that require and encourage participation in online discussions. An online activity may begin with reading instructions and learning materials, followed by instructions for online discussion participation. Online interaction is encouraged as learners are expected to reply to others' messages. Online educationalists suggest that these online learning strategies are constructivist (Klemm, 1998; Markel 2001; Salmon 2000). They are identified to promote active learning, collaboration and problem solving during online or face-to-face learning (Klemm, 1998; Markel 2001; Salmon 2000). Online facilitators also state that the inclusion of online discussions can enable reflection and build a learning community (Conrad 2002, Palloff and Pratt 1999, 15).

However, these practices are based on speculative and notional assumptions about how different learners might experience and use the new technologies. In practice, all learners do not actively participate or gain from online discussions. A growing number of case studies and research literature have identified the lack of active online discussion participation by different learners (Klemm 1998, 63; Williams 2002, 267). The research and case studies have assumed the effectiveness of online discussions, and have mainly reported on participatory and non-participatory behaviours. The assumptions in these studies have revealed little about the knowledge construction processes of learners using new technologies. While these studies might identify effectiveness of online discussion tools and strategies for learners who do engage actively, they lack the voice of the silent learners. The consequence is that online

learning practices continue to build on the assumption that silence in online discussions implies non-engagement in learning.

There is a need for research that critically questions how technologies such as online discussions might affect different learners' engagement, and why some learners participate more than others. This research was situated in the above political and pedagogic context. It aimed to challenge the assumptions about the effectiveness of information technology use, particularly the claims that online discussion participation was significant in knowledge construction for different learners.

1.2 Personal Context

My personal background is as a qualified nurse. Five years ago I moved into nurse education. During my initial attempt to develop e-learning support and online communication for my face-to-face undergraduate nurse learners, I found I had limited know-how and experience to help my learners gain from technology. This led me to enrol on a postgraduate course in online tutoring, where I experienced online discussions as a significant part of the online social learning process. During the course I moved between being an active and a silent online discussion participant. I found I was learning at both times, but differently. When I tried to develop online discussion strategies for my learners, I wanted them all to participate actively. However, personal experience as a silent learner challenged what I expected from my learners. As an online learner and tutor I wanted to understand the learning processes whereby different learners may have different preference for participation in online discussions. This led me to question the popular use of online discussions as rationalised in the next section.

1.3 Popular pedagogy emphasising online participation

The rationale for this study was based on the need to question the effectiveness of popular online learning approach that placed emphasis on participation in online discussions. In the above context, the education rhetoric emphasises learner-led, learner-centred, work-based, enquiry driven and "constructivist" learning strategies

(Monteith and Smith 2001, 119, Hughes and Daykin 2002, 217, Sims 2003, 88, Alexander et al 2003, 41, and Jung et al 2002, 153). Most emerging online learning literature refers to learning as a social experience, and assumes that flexibility offered by online technologies can help support learner-centred strategies for diverse learners' (Miller and Lu 2003, 164; Clerehan et al 2003, 15).

At first, online discussions as a learning strategy may appear beneficial for discursive, open, deep, reflective and learner-centred learning. Requiring compulsory participation in online discussions, and grading based on the number or quality of contributions may also seem appropriate way to bring together learning assessment and the learning process (Edelstein and Edwards 2002; Swan et al 2003). Nevertheless, critical examination of reported practices suggests emphasis on online discussions may be based on the assumption that different learners will engage and construct meaning using the same learning processes (Gulati 2004b; Gulati 2003b). The contemporary online learning designs may assume online discussion participation will support engagement for different learners, irrespective of the differences in their learning preferences, personal and professional contexts, and confidence in using IT for learning.

Although most courses have some active online discussion participants who engage in online discussions and demonstrate discursive social deconstruction and reconstruction of ideas, the literature repeatedly identifies a silent majority, which does not participate in online discussions (Kirkpatrick 2005, 158; Klemm 1998; Williams 2002; Williams 2004, 1). The continued support for compulsory requirement for online discussion participation underscores the assumption that non-participation in discussions is non-constructivist (Hughes and Daykin 2002, 222, Khine et al 2003, 113).

Non-participation in online discussions is often labelled 'lurking' or 'free-riding' (Klemm 1998, 62; Salmon 2000). 'Lurking' is defined as

> *"...the activity of the silent majority in an electronic forum, posting occasionally or not at all, but reading the group's postings regularly" (Foldoc 2003).*

'Lurking' around the Internet is an acceptable practice and may be referred by the more hip term – 'surfing'. However, in the formal educational contexts 'lurking' has gained a negative reputation.

The online educators' disapproval of 'lurking' has led to close monitoring and tracking of learners to ensure greater participation in discussions. Some educators have used phrases like the 'need to control the discussion', 'to track learner activity' (Anderson et al 2001), 'make sure the discussions are posted by a certain date' and 'penalise non-contributors' (Sener and Humbert 2002). Tutor-presence, monitoring and judgement of online discussions may have a positive or negative impact on social engagement for different learners. It is possible that tutor-presence and power influences may create formal online discourses. The grading of online discussions further demonstrates tutor-authority that favours the active participants over others because the former conform and obey the course rules, thus excluding the silent participants who do not conform and might prefer other ways of learning.

On the one hand, the online rhetoric intends to use technology to make the learning processes more open, discursive and learner-centred. On the other hand, the emphasis on participation in online discussion, which is assumed to be "constructivist", may be emphasising visible learning processes that can be judged as appropriate by a formal authoritative figure.

The assumptions about effectiveness of online discussions are also borne out of technical capabilities rather than learning needs. Biesenbach-Lucas (2003, 36) states that

> *"...too often technology is incorporated in classrooms with the vague rationale that technology will capture the attention of students and the expectation that subsequent positive affective effect itself will engage students in ways conducive to effective learning".*

Such presumptuous inclusion of online discussion requirements does not consider that while some learners may perceive usefulness of online discussion (Wu and Hiltz 2004, 146), others may perceive required asynchronous online discussions as forced or unnatural (Biesenbach-Lucas 2003, 24). It also does not consider that learners may

participate in discussions to meet the course requirements but may not feel involved in the online discourse (Williams 2004, 1).

This emphasis on online discussion participation assumes technical effectiveness of discussion tools for interactive learning (Sims 2003, 93). Klemm (1998, 2; 2005, 1) argues that commonly used discussion boards in online learning do not support the pedagogical principles advocated in constructivist and cooperative learning. Weigel (2005, 1) adds that the contemporary use of online tools is based on the traditional linear approaches of information delivery and exchange. He argues that inclusion of technologies such as online communication in a course is more a result of the accessibility and convenience offered by the technology, than its pedagogical effectiveness and quality enhancement (Weigel 2005, 1).

Thus the popular emphasis on online discussions raises questions about the constructivist nature of online discussion technologies. It leads to questions about the course designers' interpretations of constructivism and their practices that assume non-participants are not constructing meaning. The lack of online participation by some and not others, also rationalises the need to understand the differences in knowledge construction processes. The differences in online discussion engagement may lead to issues of power and control within online courses, and may marginalize silent learners. This raises the need to challenge and question if online discussions are constructively engaging for different learners.

This research began with the consideration of the above issues and assumptions. It proposed to understand different learners' constructions, and to question why different learners engaged differently in online discussions.

1.4 Research questions and objectives

In the above context the information technology tools are adopted as part of a largely unquestioning rhetoric. The research objective was to move beyond the non-critical adoption of technology for learning. It aimed to investigate learning engagement and knowledge construction for adult learners in higher education online and blended

courses that required and encouraged online discussion participation. The research chose to focus on professional, postgraduate learners in part-time and full-time employment. This choice was made because of the emphasis the lifelong learning (DfES 1997) and e-learning (DfES 2005) policies place on continuous professional development and learning flexibility for professional learners in a knowledge economy. In doing so the research aimed to questions if online discussion participation was significant for social knowledge construction of different learners.

The prevailing online learning practices perceive an individual learner as someone who will adopt and respond to social and formal expectations of the course design. These practices advocate online discussion participation along the lines of the behaviourist learning theory. It is assumed that learners will respond to the course design stimulus for online participation. The perspective adopted in this study did not exclusively focus on participatory behaviour in online discussions. The research was not a controlled experimental analysis of the 'active' versus 'silent' behaviours in response to different online activity stimuli. Instead, the research maintained a constructivist view and considered engagement in learning as more than just observable participation in online discussions. The research was driven by the underlying philosophy that learning is influenced by individual constructions and views of self and others.

The Personal Construct Theory (PCT) developed by George Kelly (1970, 9) was used with the basic postulate that states, *"a person is never inert"*. With this view in mind the research assumed that learning is a process of conceptual and cognitive change, and individuals play dynamic roles in constructing and re-constructing their interpretations and representations (Bezzi 1996, 180). This view also assumed the learners may adopt 'active', 'moderate' or 'silent' roles in an online discussion context to understand others outlooks and concepts (Kelly 1970, 25). This lead to the following research hypothesis or assumptions

- ➔ Individual learners, who may display different behaviours during the online and blended learning courses, may have differing or similar constructs of the world and their constructions may influence their implicit and explicit engagement in learning.

It was further hypothesised that:

- Active, moderate and silent online discussion participants may engage in learning in different and/or similar ways.
- Some of these ways of engagement may be tacit, unseen by the tutor and informal.
- Silent learners are also learning. They may employ other ways of social engagement.
- Compulsory requirements for online participation may formalise the learning experience and may impact on how and whether individuals participate in online discussions.

The above hypotheses statements were hunches. They were not traditional 'if and then' statements commonly used in objectivist quantitative research (Hillier and Jameson 2003, 38). These statements were developed and included here as an indication of my initial impressions and ideas gained from the literature review. These ideas had not been previously tested through empirical research. These statements identified possible qualitative aspects of individuals' learning processes. Taking the stance that individuals may be different in their ways of knowing, the purpose of these statements was not to establish laws or to predict future learning processes for different learners.

In order to investigate these hunches about people and unpredictable differences between them, a qualitative approach was used to understand individual learners' engagement and construction processes during online and blended courses. The research investigated different learners' ways of knowing during online and blended courses. The main research question was:

- How do learners engage and construct meaning during online and blended learning courses that require and encourage participation in online discussions?

In the constructivist paradigm learners with different levels of online participation might have different or similar ways of engagement. The aim was to interrogate and deconstruct these differences in knowledge construction processes. This aim guided the second research question that intended to look for differences between active, moderate and silent online discussion participants in online and blended courses:

- ➔ Are there differences between how active, moderate and silent discussion participants construct meaning? What are these differences?

In exploring the differences this question also aimed to understand why some learners were more active and participatory in online discussions as compared to others. This comparison led to the third question:

- ➔ Are silent learners or 'lurkers', who do not actively contribute in online course discussions, learning?

The intention behind this question was to challenge or validate the assumption of popular online pedagogy that silent learners are not engaged in learning. The constructivist paradigm suggests that silent participants may have alternate ways of knowing which may not include online discussion participation. The above question would help to gather empirical research evidence to qualify or reject this suggestion, for a small group of learners.

Finally, if the above questions found that different learners were engaging in different or similar ways, how might this impact current and future online learning practice? This led to the final research question:

- ➔ What are the implications for practice?

The understanding of individual learning process would provide practical implications for the role of online course designers and facilitators. It would provide a means to situate the research findings back into the wider context of e-learning in higher education for future research and practice.

The above justification and research questions generated the following research aim:

- ➔ To surface and build evidence on the different ways of knowing for active, moderate and silent learners engaged in higher education courses that encourage online discussion participation.

The above research hypothesis, questions and aim were addressed through the following research objectives:

1. To use the Personal Construct Theory and employ the Repertory Grid Method embedded in the constructivist paradigm to answer the above questions
2. To interview a sample of postgraduate learners, who were studying on online and blended learning courses that encouraged participation in online discussions, to elicit key learning experiences and their constructions

3. To statistically analyse the Repertory Grids developed by individual learners to rate experiences and personal constructions and identify the main learning dimensions for each learner
4. To qualitatively analyse interview data and learning dimensions and identify the main themes and different ways of knowing for individual learners
5. To qualitatively analyse data and identify reasons for different levels of online discussion participation by silent, moderate and active participants
6. To deconstruct silent learners data and identify evidence for knowledge construction
7. To draw on data analysis and synthesize key influences on online knowledge construction and identify areas of developments for future practice for post-graduate courses

It is important to state that I did not reject the potential benefits of information technology in learning. Nevertheless, I did aim to critically analyse the affect of the prevailing dominant formal educational discourses that assumed straightforward benefits from visible participation in online discussions.

1.5 Thesis organisation

The research is reported in seven chapters that provide an insight into the four main focal points in the study. The first two chapters are introductory. They introduce the subject matter and set the scene by providing the political, social and academic context for the research. In chapter two the literature review draws from the political, educational, and philosophical perspectives to provide further justification for investment in the above research questions, aims and objectives. The review draws from the constructivist philosophy to problematise popular online pedagogy that endorses online discussion participation as socially constructivist.

The second focal point is the research methodology and its justification in chapter three. This chapter relocates the constructivist worldview and justifies the use of the Personal Construct Theory by Kelly (1970) and the Repertory Grid Method as the main technique to address the research questions. The discussion includes a brief

overview of the Personal Construct Theory. It takes the reader through the different stages and qualitative and quantitative approaches used in the Repertory Grid Method to examine how professional postgraduate learners in online and blended courses constructed meaning. It includes discussion of the sampling criteria, method description, research ethics, method validity, strengths and limitations. Chapters three and four together explain data collection and analysis processes and demonstrate how the method actively involved participants to deconstruct their ways of knowing.

Chapter four also reports on the breakdown of the complete research sample, followed by a brief introduction to the participants' perceptions of silent, moderate or active participation in online discussions. The second part of the chapter gives a step-by-step account of the Repertory Grid analysis and results for one silent and one active participant. The analysis highlights the importance both participants placed on personal control during knowledge construction. The discussion concludes with differences and similarities in knowledge construction for the two participants, demonstrating that silent participant was also engaged in social construction. The conclusion of this chapter argues against the use of active, moderate or silent labels to explain social construction during online and blended courses.

The analysis results reported in chapter four are part of the third focal point, extended in chapters five and six. Chapters five and six identify three facets of knowledge construction that emerged during the research analysis. Chapter five examines the first facet, individual and social construction of knowledge. The analysis of individual and social activities highlights differences and similarities between active, moderate and silent participants ways of knowing. Yet it does not neatly classify them into these categories. The individual and social activity analysis results added to the evidence that, silent participants were socially constructing meaning. The discussion concludes that participation in online discussions was not a measure of social construction in online and blended courses. The analysis results also reveal the personal constructs, personal control and emotions that influenced all participants' engagement and led to differences in knowledge construction processes. The analysis concludes personal control and positive emotions were necessary conditions for online discussion participation, for the professional postgraduate learners in this research. It shows that participants' experiences of control and emotions during online participation varied,

while online and blended course designs assumed that online discussions enabled all learners to feel in control and gain from flexibility in learning.

Chapter six presents additional analysis results on the two facets of knowledge construction in this research, online social identity construction and practical issues in online and blended learning. These facets reveal the underlying social psychological, cultural processes and practical factors to explain why some learners engaged more in online discussions as compared to others. These insights explain why some participants experienced more personal control and positive emotions during online discussions as compared to others, despite similar preferences for social and/or individual learning. The analysis adds to the evidence that personal control and positive emotions during online discussions, knowledge of others and a positive online social identity were necessary precursors and drivers for online discussion participation.

The analysis results for online social identity construction in chapter six also highlight language and professional identity were important for overseas and home learners participation in online discussions. The language and professional identities were significant in influencing the participants' sense of control, confidence, relevance and emotional engagement during online discussion. The results surface gaps in how online communication tools are employed in formal education to support language and professional identity construction for overseas and home learners.

The latter part of chapter six relates to the third facet. This considers the practical issues including employment responsibilities, time for learning, control over IT access, initial VLE access, and online communication skills. These practical factors influenced differences in online discussion participation. The emerging theme throughout the results reported in chapter six is that emphasis on online discussion participation benefited some participants more than others.

Chapter seven forms the fourth focal point of the research process, i.e. the learning from the research findings. It begins with the discussion of the grounded theory approach and answers to the research questions posed in chapter one. It then uses the research findings in the previous chapters to describe a theory of online learning. The

description of the theory includes the three main tenets or basic principles of the theory and an explanation of each tenet, developing hypotheses to predict and identify implications for practice. The emerging theory is further used to critique and highlight the limitations of the popularly used Salmon's (2000) five-stage model for online participation. Finally, the chapter makes recommendations for future research and practice in the field and outlines the research contributions to online learning theory and practice.

1.6 Summary

This Chapter has laid the foundation and introduced the research study. It has introduced the background policy context where the rhetoric endorses and promotes the use of information technology for higher learning. The research rationale has identified the need to challenge the assumption that participation in online discussions can engage different learners and help them construct meaning. It has proposed the need to understand silent learners knowledge construction before assuming non-participation in online discussions is non-constructivist. Situated in the constructivist paradigm, the discussion has identified the need to understand how different learners engage in courses that emphasise online discussion participation. The research hypothesis and questions have stated the purpose to understand different ways of knowing for silent, moderate and active online discussion participants. The organisation of the thesis has provided an overview of how these research questions were managed during the research process. The research context and rationale are developed further in the next chapter that problematises popular emphasis on online discussions participation as demonstrated in contemporary online learning practices and research.

Chapter 2

Literature Review

"If one seriously adopts the constructivist approach, one discovers that many more of one's habitual ways for thinking have to be changed"

(von Glasersfeld 1995)

This quote by a contemporary radical constructivist signals the need for different ways of thinking and doing things in a constructivist worldview. The constructivist view accepts multiple ways of seeing and understanding the world. Recent times have seen an increasing use of the associated terms such as diversity in learning, learner-centred, learner-led, and personalised learning in formal education. This literature review draws from the constructivist viewpoint to problematise the popular online learning pedagogy. It questions the assumption that online discussion participation requirement is socially constructivist for different learners. This problematisation calls for the need to examine different ways of knowing in online and blended courses, before assuming some practices or behaviours are constructivist and others are not.

The review begins with a critical discussion of the recent UK government policy that promotes IT to widening participation and increase flexibility for lifelong learning. This review identifies evidence contrary to policy proposals, which demonstrates contemporary online learning may continue to exclude non-traditional learners. This follows problematisation of one popular online learning strategy, namely online discussion participation. The problematisation helps to ask why despite the constructivist perspective assumed in popular online pedagogy do the courses continue to exclude some learners.

The problematisation begins with an introduction to the constructivist view as advocated by the commonly cited thinkers in contemporary education. This introduction gives the basis for problematising the popular online pedagogy that assumes online discussion participation is constructivist. A critique of online learning research findings that argue online discussion participation is constructivist and non-participants are not constructing knowledge follows this. The critique surfaces the normalising influence of compulsory participation in online discussions and the

possible power differences that may affect online participation. The review concludes that the emphasis on online discussion participation may give limited appreciation to diverse learning preferences. The emphasis may exclude the learners who may choose silence and different ways of knowing. The review also highlights research evidence that suggests silent learners may be engaged in informal, social and individual ways of knowing, that are not always visible and measurable by the tutor. This problematisation justifies the need to question how different learners (active, moderate and silent discussion participants) construct meaning during courses that emphasise the use of online discussion technologies.

The literature review was open to peer critique in publications and conference presentations. Five conference papers and one book chapter are included in Appendix I. The review was also influenced by the findings of the visits to five higher education institutions in the UK and nine institutions in the United States of America (USA). The Winston Churchill Travel Fellowship supported the latter. It provided opportunities to discuss and observe the popular use of online discussion tools with practising academics. The findings of the Travel Fellowship are reported online (Gulati 2004a).

2.1 E-learning policy and widening participation

Since the mid-1990s, the UK government has recognised the importance of e-learning in education policies. The growing Internet use and personal computing technologies has also spun the education sector into exploring potential opportunities for flexible and accessible learning. The Dearing Report (DfES 1997) was one of the first UK policy documents to advocate e-learning and information technologies in higher and further education. The report highlighted the need for the education sector to engage with these technologies and develop learner-centred learning. It identified that pedagogy not technology needs to be the drivers. The report perceived information technology as the inevitable future of learning and suggested it would reduce cost and change learning over time (DfES 1997, Chapter 13). The report also called for development of e-learning management expertise to build engaging online learning experiences (DfES 1997, Recommendation 42).

The Dearing Report (DfES 1997) was effective in mobilising the UK higher education sector to invest and set up dedicated e-learning departments supported by technical and pedagogical expertise. In 2003, the White Paper on Higher Education (DfES 2003) further affirmed e-learning as an important deliverer of the widening participation agenda. The wording in this and the proceeding policies including the recent E-learning Strategy (DfES 2005, 9) is rationalistic. They justify the undisputable need to promote information technology to widen participation and increase access for non-traditional learners.

These policy documents begin with declarations that avert and defy questioning how and why e-learning might be useful for the above aims (Nicoll and Edwards 2004, 49). For example, the following statements in the first five pages of the E-learning Strategy (DfES 2005) document proclaim information technology as the obvious way forward.

> *"We aim to put learners, young people - and their parents – in the driving seat... In achieving these goals the effective use of interactive technologies is absolutely crucial... Digital technology is already changing how we do business and live our lives. Most schools – and every university and college – now have broadband access." (DfES 2005, 1-5)*

The assertions in these statements have had a significant impact on building the rhetoric, reifying e-learning and normalising educationalists to the intentions of the policy goals. This normalised and uncritical rhetoric has played an influential role in promoting e-learning practices in higher and further education in the UK. For instance, Browne and Jenkins (2003, 36) survey recorded that between the late 1990s and 2003, 86.3% of the UK Universities and Colleges had purchased or developed Virtual Learning Environments (VLEs) for online and blended learning.

The increased access to information technology is incontrovertible because it may increase learners' access to learning resources. However in the above rhetoric many e-learning developments have advanced with the assumption that somehow technology will be effective in motivating and engaging different learners (Timmins et al 2004, 7). Instead of asking the question how do we improve the learning experiences for different learners from varied backgrounds, the VLE use for online and blended

courses is justified and promoted under the normative assumption that inclusion of information technologies will somehow motivate learners, enable learner-centred pedagogies and widen participation (Weigel 2005, 1, Timmins et al 2004, 3). The popular e-learning rhetoric and the claims for transforming education are supported by limited research. Thus far there is limited evaluative and effectiveness research into how can technologies be used to enhance individual learning experiences for different learners (Farrell 2003, 24, Oliver and Dempster 2002, 1). There is however growing indication that this gap is more recently being recognised and addressed through pedagogical, technological and organisational research (Conole 2004, 2).

The uncritical promotion of online learning was evident among the seven out of nine USA institutions visited during the Churchill Fellowship trip (Gulati 2004a). These institutions committed large amounts of finances into online learning. Yet when asked the question why did your institution choose e-learning and VLEs for course delivery, they repeated the popular rhetoric of increasing access to non-traditional learners and attracting more students. There was limited evidence of time spent on research into how online learning may engage and benefit the potential learner groups (Gulati 2004a, Section 2).

This mirrors what is happening in the UK Higher Education Institutions (HEIs). Stiles (2002, 5) highlights that the political pressures for VLE adoption in the UK institutions have not challenged the above rhetoric. He suggests this adoption has led to a major underestimation of the pedagogical challenges faced in using technologies to widening participation (Stiles 2002, 5). Conole (2004, 2) and Stiles (2002, 6) suggest that an uncritical adoption of VLEs has led most academics to use VLE technology as an expensive content repository. This has increased emphasis on content delivery rather than on the whole educational experience (Stiles 2002, 6).

The assumptions of the popular e-learning rhetoric are now beginning to be questioned as the normalised policy readers experience gaps in the emerging practices and research. This is evident in Gorard et al's (2002, 3) research findings that challenge the government policies on its presumption that e-learning widens participation in education. Their work showed that inclusion of information technology for learning did not widen participation for the socially excluded groups.

Although IT in learning increased participation for the traditional, younger, middle class learners, and not for the non-traditional learners, older learners, and learners from lower social class groups (Gorard et al 2002, 5).

An ICM survey published in the Guardian (2003) newspaper and the findings of a Widening Participation Project (Universities of the North East 2002) in the UK confirm a digital divide between individuals from different social classes. The ICM survey shows that 19% of the rich A and B social classes have no access to the web, as compared to a larger 68% of the lower D and E groups (Guardian 2003). An ESRC-funded 'Learning Society' research project (Selwyn et al 2002, 26) analysed 36 structured interviews with learners on online courses. The study also revealed that the online course participants were already 'lifelong' learners who reported various episodes of learning since the completion of compulsory education (Selwyn et al 2002, 27). The online courses in this study did not attract individuals from non-traditional groups, as suggested in the policy rhetoric.

Online learning courses have high attrition rates in contrast with face-to-face courses, with up-to 50% learners leaving a course (Cardon and Christensen, 1998). Rovia and Jordan (2004) suggest that high attrition exists because online courses are not designed and facilitated to meet the needs of diverse groups of learners. In a recent study on attrition from online courses in the USA Terrell (2005) concluded,

> *"Educational institutions are quick to offer distance (online) education programs as an alternative for students who, for myriad reasons, cannot attend a more traditional program. This trend is evidenced by the fact that over 80% of educational institutions in the United States offer some form of distance education. Unfortunately, attrition from these programs is reaching epidemic proportions and, if educational institutions are to fulfill their commitment to offer courses equivalent to their traditional counterparts, they must investigate ways to address the learning needs and styles of different types of learners." (Terrell 2005)*

Findings of these many similar studies on learner experiences and attrition from online courses suggest that there is more to access and engagement in learning than simply having online course provision and a VLE.

The increased provision of IT due to the above policies is useful for opening access for individuals who may not encounter a computer in day-to-day work (Becta 2004). E-learning and information technologies also have a lot to offer the world of education. Yet the policy claims for opening access and widening participation remain largely unqualified. Why is e-learning practice in the post-compulsory sector not realising the goals and aims of the policy rhetoric for widening participation? Is it because the online provision and course design might favour traditional learners who adapt and comply with the pre-defined requirements, thus ignoring those who may have different learning needs and preferences? Situated in the above policy context, the following sections problematise literature that advocates one popular online learning strategy, namely online discussion participation. It raises the question if the emphasis on online discussion participation is ignoring learners who may learn in alternate ways.

2.2 Introducing constructivism in education

According to Bruner (1999, 5), pedagogy is described as a science that involves becoming aware of different learning strategies and determining how, for whom, and when to apply these strategies. The choice of strategies is often a result of philosophies we hold about how people learn and make meaning. The formal education pedagogy has traditionally relied on the objectivist view of knowledge. This view assumes that true reality can be determined by *"a large accumulation of facts"* (Kelly 1970, 2), and knowledge can be imparted from the teacher to the learner through instruction, lecture and practice. This perspective assumes learners are passive recipients of knowledge. Teaching and research driven by this philosophy often disregards different contexts and experiences of individuals.

In contrast, constructivism is a philosophy that offers an appreciation of many ways of knowing and understanding the world. Larochelle and Bednarz (1998, 7) state that this view is a shift from the objective *"world of facts, to a world of symbols and models"*. It acknowledges individual experiences and social relationships from a more holistic perspective (Larochelle and Bednarz 1998, 7).

Dewey (1966a), Brookfield (1986), Knowles et al (1998), and Kolb (1984) are among the many advocates of constructivism in education. John Dewey is regarded as one of the first Western thinkers who described constructivism as central to learning. He gives an extensive critique of the transmissive and objectivist pedagogies (Dewey 1966a, 192, Knowles et al 1998, 28 Kolb 1984, 4). According to Dewey (1966b, 304) learning is a consequence of experience. Learning is not something that just happens to an individual, but it is an experience that touches the person in someway. Dewey (1966b, 305) explains learning as an experience of something new that causes physiological and psychological stimuli. It brings about changes in our feelings and adds to our consciousness. The new meanings become part of us and are brought forth in our actions when we experience something new. Dewey (1996a, 190) also argues that for the mind to learn, change and grow through reconstruction, formal education needs to realise the importance of freedom and flexibility *"in the expression of even immature feelings and fancies"*.

Brookfield (1986, 48) also advocates constructivism in adult education through self-directed and discursive learning. His work demonstrates significance of internal mental strategies as well as the external sources and context during learning. He argues that although we may reconstruct our own meanings using our past experiences as mediators between inner understandings and new experiences, our meaning making is by no means completely in our control (Brookfield 1986, 48). All meaning making and self-direction are never in isolation of some external source or resource. Brookfield (1986, 56) also recognises that for true self-direction and personal constructions, one needs to have freedom and autonomy. This involves being able to independently choose the resources for learning (Brookfield (1986, 57), to feel free to exercise critical thought and make informed choices from alternative ways of thinking (Brookfield (1986, 62).

Knowles et al (1998, 64) offer the principles of andragogy where the learner directs the learning process. This is different from pedagogy in conventional education where the educator defines and directs the process. Influenced by the works of Dewey, Knowles et al (1998, 37) endorse the view that learning is contextual, and conclude that a large amount of adult learning is informal. Knowles et al (1998) also support the ideas of democratic learning. Their focus is on learning that originates in our daily

simple and complex experiences, and their ideas of andragogy are critical of the rigid, criteria-based curriculum that encourages conformity (Knowles et al 1998, 68).

Kolb (1984) is yet another constructivist learning theorist. He states that learning processes are not identical for all human beings (Kolb 1984, 62). First, he applies the dimensions of experimentation, reflection, abstraction and concrete experience, to identify four different forms of elementary knowledge: divergent knowledge, assimilative knowledge, convergent knowledge and accommodative knowledge (Kolb 1984, 42). He then argues that all these dimensions are equipotent and represent different ways of knowing through experience (Kolb 1984, 40). His agreement with constructivism, learner diversity and human individuality are evident in his Learning Style Inventory (Kolb 1984, 67). Here he provides a model for approaching human individuality through context and history of the learning event. He criticises the limitation of psychological categorisation of people into 'types' that *"become extreme stereotypes, trivialise human complexity and thus end up denying rather than characterising it"* (Kolb 1984, 63).

The views of Dewey, Brookfield, Knowles et al and Kolb are among many in education who promote the notion that learning is more than a mere transmission of facts. They commonly acknowledge diversity and significance for democratic learning. While their views are most cited in formal education, it is important to note that there are various interpretations of the constructivist view. The two extreme versions are cognitive constructivism and social constructivism (Abdal Haqq 1998; Phillips 2000). Cognitive or individual constructivism regards learning as primarily an individualistic enterprise. The extreme version of cognitive constructivism emphasises internal development as the goal of education and disregards social and historical contexts as sites of power or control for learning (Abdal Haqq 1998). In contrast, the extreme version of social radical constructivism emphasis the significance of social and context over the individual for knowledge construction (von Glaserfeld 1995).

Vygotsky (1968; 1972) states that individuals derive meanings from social interactions with social and cultural contexts. Like Dewey, Vygotsky (1972) identifies the importance of school as a social-cultural setting that can provide interactions with

others and scaffolding for individual construction of meaning. The dominant view in education as ascribed by the above thinkers is somewhere in the middle of the two extreme versions, and sees learning as both individual and social. There are also many critiques for the two extreme versions of constructivism (Phillips 2000), yet these are rarely discussed in formal educational discourses.

Constructivism is not a method or a teaching model, but it is a philosophy that can contribute to critiquing and problematising existing and new educational practices (Larochelle and Bednarz 1998, 5). According to McCarty and Schwandt (2000, 42) educators need ongoing involvement in such critiques to understand how their learners construct meaning. The following discussion facilitates such a critique through problematisation of the popular practice, which assumes participation in formal online course discussions is socially constructivist for different learners.

2.3 Problematising popular online pedagogy

Online educators and theorists who espouse to learner-centred strategies often suggest their work is situated in the constructivist paradigm (Laurillard 1994, Mason 1998, Salmon 2000). According to Laurillard (1994, 19) developments in educational technology are a useful opportunity to re-think educational material and pedagogy. Mason (1998, 3) suggests the rethinking needs to focus on active learner participation through structured online discussions, online assessments, and interactive course materials. He states that promotion of discursive approaches using information technology may enable egalitarian participation. He also argues that a good online discussion is dependent on participating individuals and structured discussion tasks (Mason 1998, 4).

Laurillard (1994, 19) also identifies the importance of discussion, interaction, adaptation and reflection for socially constructivist online learning. Online discussion for her includes adaptation by the teacher of the learner's world through feedback on learners' work and discussion. Then the learner reflects on that feedback to reconstruct meaning. Laurillard (1994, 21) acknowledges that this reflection takes

time and effort. She warns that if the teacher gives little time for reflection, the process fails and offers limited opportunity to construct new meaning.

Collaborative learning through asynchronous discussion participation is widely advocated in formal higher education to construct…

> *"...knowledge, deeper understanding and greater skill development, by their (online discussions) ability to engage students dynamically in the learning process" (Marjanovic 1999, 129).*

The asynchronous discussion tools are seen as a means of decentralising the learning process and making it more democratic (Dillenbourg and Schneider 1995). Thus participation in online discussion is regarded as promotion of the constructivist view advocated by the above thinkers.

Salmon (2000) is an influential advocate of the computer-mediated-collaboration in online courses for social construction of knowledge. Her five-stage model is increasingly popular among the UK academics and is often cited to develop structured online discussions. The five stages in the model are described in the following headings (Salmon 2000, 26):

1. **Access and motivation**: to log on and use the online discussion space
2. **Online socialisation**: to get know each other through introductory activities
3. **Information exchange**: to share information and views within and outside the course context
4. **Knowledge construction**: to construct meaning through online collaboration and peer reviews
5. **Development**: through identification of further goals and opportunities

Salmon (2002, 10) proposes that online discussions could be built around carefully scaffolded 'e-tivities' (or online activities) and incorporated into the above model. She states that by the time learners have successfully learned to exchange information (stage 3 in the above model), the numbers of learners "lurking, browsing or vicariously learning" is reduced (Salmon 2002, 28). She indicates that lurking or vicarious learning is an undesirable behaviour in online course discussions (Salmon 2002, 27).

In the UK online designers and educators often cite Salmon's five-stage model and argue that emphasis on online discussions promotes constructivist learning (Hughes and Daykin 2002, Timmins et al 2004, 16). However their view of constructivism is at odds with their objectivist tutor-defined learning processes (Rovai and Jordan 2004). This was evident in Anderson et al (2001) study of teacher presence during online discussions. Anderson et al (2001) found that tutors continue to be influenced by their traditional roles and feel the need to pre-define, monitor and control discussions. Tutors felt uncomfortable about not being able to display their pre-defined roles in an online environment (Anderson et al 2001). The study concluded that tutors and learners in an online environment may be holding on to their expectations and roles, developed in traditional learning environments (Anderson et al 2001). The traditional learning format is evidenced in online learning designs that continue to be pre-sequenced and monitored by tutors, with limited learner negotiation.

During my visits to the five UK and nine USA HEIs I found evidence to support the suggestion that online course designs including online discussion tools may be promoting an objectivist view, rather than endorsing constructivism and different ways of knowing. The conversations with online educators and inspection of course designs revealed the linear presentation of learning process was assumed for all learners. In a typical online course, an educator or course designer may identify topics, structure text and website links for learners to follow and download. In some cases, this 'information-giving' would take place through a series of face-to-face workshops, online asynchronous audio lectures and PowerPoint presentations. This linear learning sequence would follow completion of individual and group tasks, and requirements to participate in online discussions. The participation in asynchronous online discussions was intended to facilitate knowledge construction through social, dynamic and active learner engagement (Marjanovic 1999, 129).

The widespread adoption of online communication tools in online and blended courses is well documented (Garrison et al 2000). Figure 2.1 represents the popular sequencing of learning events in the popular online pedagogy. This figure does *not* represent Salmon's five-stage model but is a representation of how online learning technologies are being used in higher education to sequence learning materials and

events in a linear fashion. The figure was constructed after examination of literature, and practice strategies at the nine USA (Gulati 2004a) and five UK HEIs.

In this sequence of events (Figure 2.1), there are some online enthusiasts who argue that online discussion forums create social environments similar to the face-to-face classroom where learners can critically share, validate and construct knowledge (Corich et al 2004, Spatariu et al 2004). Others suggest online discussions offer opportunities for reflective interaction that may be lacking in face-to-face classrooms (Rovai and Jordan 2004). Some also suggest that addition of online enhances the quality of face-to-face courses (Dziuban and Moskal 2001).

The online educators using this sequencing commonly cite Salmon's five-stage model within the linear sequencing of learning events. Salmon's model appears simple to adapt in the popular mode of thinking in teaching and learning, which includes predominant use of planned lectures and tutor-defined seminar topics in face-to-face teaching. Although Salmon (2000) identifies the need for flexibility to accommodate the model stages as the learners' progress, yet the staged presentation of the model suggests that scaffolding learning is linear and similar for different learners. The application of Salmon's (2000) model in pre-defined and sequenced activities reiterates the emphasis on online discussion participation with limited attention to learner differences (see studies cited below).

In any formal course, learners may expect structure and tutor-guidance. However, the popular course structures may assume that pre-defined learning sequences, requirements for participation in discussions and course schedule are suitable for engaging different learners (Misanchuk and Schwier 1992, 356). There is also an assumption that online collaboration in teacher-defined tasks is learner-centred and flexible for different learners, because learners can choose the time and place to participate (Dillenbourg and Schneider 1995).

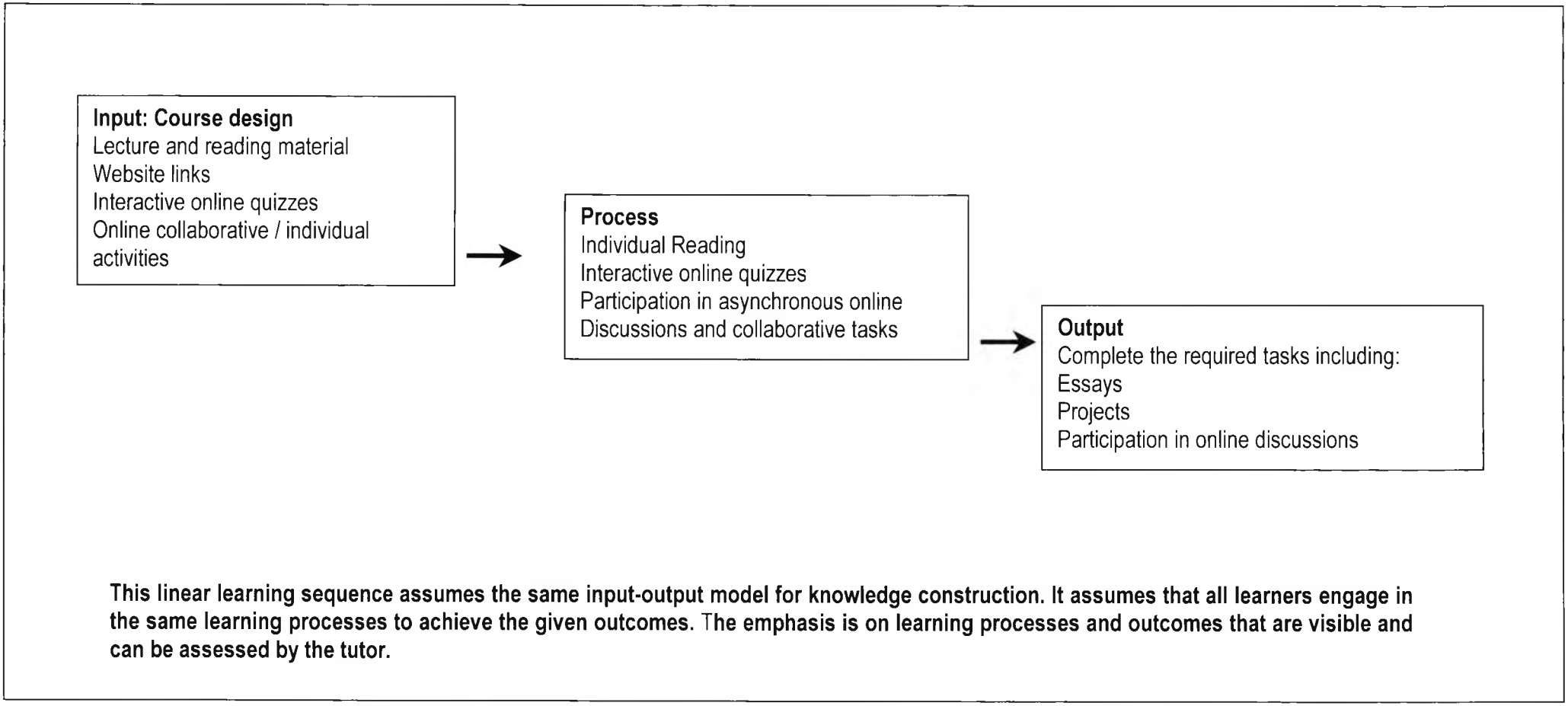


Figure 2-1: The linear sequence of learning events promoted in the contemporary popular online course design

In problematising online discussion participation the questions for critical pedagogues include

- Does this linear sequencing of learning events including online discussion reflect a constructivist view?
- Does the emphasis on participation in online discussions for different learners allow individuality and decentralisation of learning? Or does it require learners to conform to a tutor-defined process?
- Do online learning spaces facilitate openness and trust to ask questions and challenge others as advocated in the constructivist view?
- Does the emphasis on online participation cause power discourses in online learning spaces that may benefit some and not others?

The following research literature is used to critique and consider these questions.

Khine et al (2003, 113) report on a study of 42 adult trainee teachers on a pre-service Post-Graduate Diploma in Education, in Singapore. They conclude that trainee teachers' inability to actively participate in online discussions demonstrates their preference of information acquisition over constructivism. The researchers state that because the learners failed to sustain online interaction they "*were not critical thinkers*" and were surface learners (Khine et al 2003, 122). The researchers reach their conclusion with no reference to other means of engagement that may be preferred by the silent online learners. They simply disregard learners' experiences and meaning construction beyond online participation.

Likewise, in an evaluative study of an online nurse management module at the University of West of England, Hughes and Daykin (2002) found limited participation in tutor-defined topics. The nurses actively discussed topics identified by their peers, including 'the use of ICT in nurse education and practice' and 'stresses of online assignments and group work requirements'. Nonetheless Hughes and Daykin (2002, 222) concluded, "*knowledge construction debate was limited*". The researchers in this study regard the learner-initiated discussions on radical and critical issues as irrelevant to knowledge construction. They refer to Salmon's (2000) five-stage model to ascertain that constructivist learning would have been possible and demonstrated

through online discussion on learning materials and topics identified by the tutor (Hughes and Daykin 2002, 219).

Hughes and Daykin (2002, 222) also conclude that learners' were reluctant to criticise each other and to engage in discussions. Here, the researchers do not mention and explore issues of trust, rapport, confidence and power discourses that might affect a truly open discourse, particularly in a formal environment monitored by a tutor. The researchers' conclusions ignore the need to foster informal and open environments that enable learners to feel free to construct learning from their and other's experiences, as advocated in the constructivist view.

According to Phillips (2000 89) "*individuals learn by being a part of the socio-cultural nexus and socially constructed public bodies of knowledge and discipline*". Nurses in Hughes and Daykin (2002) study may have seen their social nexus in practice, and shared what they saw as common issues with peers. These learners may have also radicalised specific issues as important for discussion. Yet the popular assumption that online discussions are socially constructivist led the researchers Hughes and Daykin (2002) to conclude the lack of visible online participation in tutor-defined discussions was non-constructivist.

In a research study by Sims (2003) using open-ended questionnaires with 68 multimedia online undergraduates in Australia, learners identified a lack of control in tutor-defined compulsory online discussions. They desired more freedom to choose discussion topics and learning directions. Sims (2003, 101) is one the few researchers in the field who acknowledges the inconsistency of this finding with the current tutor-centred model, which considers set sequences or fixed online discussion threads as the best way to achieve discursive learning. He concludes that although learners may appear to go through the same set of materials or communications, but *"we cannot conclude that they have undergone the same learning experiences individually"* (Sims 2003, 100)

The experience of learners in the above studies suggests a lack of acknowledgement of the diverse learning processes due to the emphasis on online discussions. Therefore, although dialogue and interaction are espoused as important aspects of

learning that help to verbalise, articulate and gain feedback on understanding (Vygotsky 1978; Lipman 1991; Freire 1993; Mercer 2000; Ravenscroft and Matheson 2002), it is appropriate to challenge the above pre-sequenced online practices, their emphasis on tutor-directed online discussions, and their interpretation of constructivism.

The following section cites literature to question if the linear course structures that require online discussion participation are an attempt to normalise the learning processes.

2.4 Normalisation versus diversity in online discussions

Active learning is identified as an important aspect for constructivist education (Bredo 2000, 132). Online educators often cite the discourse of 'active' learning as a justification for compulsory participation in online discussions (Anderson et al 2001). This justification was evidenced in an open listserv, where online tutors' were giving reasons to make online participation compulsory. Ozden (2003), a professor at a Turkish University, noted that he allocated 25% of the final grade to his learners' online discussion performance. Ozden (2003) justified his strategy of requiring the reluctant participants to contribute through the quantified success from the larger number of posted online messages. In the same listserv discussion Miller (2003), a lecturer in the Open Polytechnic of New Zealand, concurred the need to *"strongly encourage"* participation in online discussions to engage learners. He stated

> *"...this is based on my belief that to learn well the learner has to become involved and also rewarding a behaviour (participation) will help ensure that behaviour is displayed" (Miller 2003).*

This reasoning signifies online participation as an acceptable and required learning behaviour. It also suggests discussion participation may be driven by the need for online tutors to monitor their learners, rather than to promote autonomous, flexible, meaningful, and socially constructivist experiences.

The construct of learning that justifies compulsory contribution assumes articulation of ideas to an external authority as a critical element of learning (Beaudoin 2002,

149). This was evident in another listserv discussion on compulsory discussion, where an online tutor, Thompson (2003) justified the emphasis for online discussions using a quote by W.H. Auden

"How do I know what I think until I hear what I say?"

In referring to this quote Thompson (2003) does not realise that for deep engagement the person who needs to understand and hear one-self speak is the individual, not some formal authority. While online discussion boards may be useful as sounding boards for knowledge construction, the advocates of compulsory online discussion participation may interpret this quote as the requirement for learners to show educators what they understand and to allow educators to monitor their performance.

The emphasis on online participation as active learning may be extending the need for learners to conform to the learning processes that tutors regard as necessary for learning. A tutor watching and reviewing learner progress is an influential audience for the *externalisation* of knowledge. Although online collaborations may form part of ones learning processes, the requirement to make these processes explicit and external is influenced by the behaviourist psychology of learning as a stimulus-response phenomenon. The emphasis on participation in online discussions, accounted-for by the postings and contributions, rewards the participatory behaviour. In the same context lurking or silent online behaviour is punished through deduction of the final mark. This view normalises learning driven by the dominant pedagogic discourse and an un-problematised interpretation of constructivism.

Brookfield (1986) warns that enforced or coerced participation may result in learners either being increasingly physically or mentally absent, *"...in the sense of not being engaged with ideas, skills and knowledge"* (p.12). Few studies have questioned and explored the impact of making online participations compulsory in formal education courses (Biesenbach-Lucas 2003, 25; Wenger et al 1999, 99). Oliver and Shaw (2003, 60) studied the impact of formalised participation in asynchronous discussions in a Biochemistry, Human Anatomy and Lower Extremity Anatomy course that was part of the Podiatry Medicine Degree in California (USA). They found that most online contributions were assignment focused and did not lead to constructive knowledge sharing events (Oliver and Shaw 2003, 65). Oliver and Shaw (2003) analysed the

types of contributions to find that online participants were simply *"playing the game"* (p.64) of assessment.

In a recent literature review of online learning, Williams (2002, 267) concluded that despite requirement of compulsory participation in online discussions, many learners choose not to conform to the normalised online participatory behaviour. In a study of seventeen educational professionals with Masters degrees, studying for an online administration and supervision course at City University of New York, Picciano (1998, 10) identified qualitative issues related to participation in online discussions. Despite the learners' high level of experience as senior teachers, the group reported feelings of hesitance, fear of exposure, and discomfort in speaking-up in an open online forum (Picciano 1998, 11). Although some participants applauded the flexibility of access and opportunities for reflection, one full-time teacher-learner who was also a mother identified the difficulties in finding the time every night to participate due to disturbances from family members (Picciano 1998, 11). The busy lifestyles of mature learners, who fitted the course around work and family life, also implied they had limited time to read, reflect and engage in discussions. These learners had to work harder to avoid falling behind and feeling left out (Picciano 1998, 12).

Other studies have shown diversity in online engagement and suggest normalisation through online participation requirements may be a denial of diversity and constructivism. Aviv (2000, 53), an Open University lecturer (in Israel), used the linear sequence approach demonstrated in Figure 2.1 to test the effectiveness of Asynchronous Learning Network (ALN, i.e. online discussions) technologies in enabling cooperative learning. His research included ten learners on an undergraduate course who were confident in IT use but had no previous experience of ALN use for formal learning. His first step was to provide learners with the background literature. This proceeded with a broadcast of tutor-defined questions for discussion in small online groups, which would last one week (Aviv 2000, 63). 30% of the total pass mark was allocated to participation in asynchronous discussions. The content analysis of discussions led Aviv (2000, 64) to identify four groups of learners. He described them as

- **Non-Performers**: This included two learners who actively participated in the discussions but demonstrated low levels of reasoning and involvement in the social processes
- **High-level educational performers with high participation**: This included five learners who were active participants and appeared to be "*assertive, socially-connected, responsive and communicated with a high level of reasoning*" (Aviv 2000, 64).
- **High-level educational performers with low participation**: This included two learners who participated less than those in the second group but demonstrated high-level reasoning.
- **Low-level participant with occasional but effective contribution**: This included one learner whose participation was very low and he "*did not contribute to the social strength of the ALN, but had high level of reasoning and performance*" (Aviv 2000, 64).

Aviv's (2000) small-scale study demonstrates the vast diversity among the learners' construction processes. It also suggests that online participation may not influence knowledge construction for all learners.

In another study, Picciano (2002, 26) researched a group of 23 educational professional in New York and found online learning diversity. Picciano (2002, 32) determined that individuals who were observed to be interacting the least, perceived themselves to have higher levels of postings. Whereas individuals who were classed in the high interaction groups had self-perceptions of fewer postings. Picciano (2002, 33) concluded that the relationship between the level of participation in discussions and its effect on learning outcomes might not be as straightforward as formally presumed.

Some tutors justify required online participation will enable learners to feel part of a learning community (Palloff and Pratt 1999). In a grounded theory research with purposeful sampling of 12 experienced and 6 new online learners, Brown (2001, 28) found feeling a sense of community was important for knowledge construction during online discussions. Brown (2001, 25) concluded that despite online discussions five learners felt no sense of community and four were inconclusive about their answers.

His learners gave the following reasons why they did not feel a part of an online community

- They did not want to be a part of a community. Therefore they only did the required collaborative work necessary to get the pass grade and nothing more (p. 26).
- Their personal and social circumstances such as health problems, family commitments, or work overload, resulted in reduced involvement in the community (p.26).
- Their understanding was that a community develops through face-to-face interaction; and is not made formally but should be voluntarily assembled (p.26)
- New learners found they needed more time to learn the technology, comprehend the content and take part in collaborative and self-directed learning (p.27).

For those who did experience depth of social engagement in the community and collaborative learning, it took a longer time to build friendship, community or camaraderie than it might for face-to-face relationships (Brown 2001, 32). Brown (2001, 31) concluded that the online community feeling might be present for learners and not for others, even if they are in the same class.

In an earlier ethnographic study with twenty-one online learners on a Teaching and Learning Online course run by the Open University UK, Wegerif (1998) similarly concluded that the *"low contributors"* felt social learning had not *"taken off"*. In this study the low-contributors preferred face-to-face communication, and felt daunted by others high level contributions, limited time to reflect and formality in online discussions (Wegerif 1998). They stated ALN was not truly asynchronous and flexible because they did not feel in synch with the rest of the group discussion. Lagging behind the discussion and prolonged reflection was not an option. Wegerif (1998) concluded that success for learners in a course using ALN was dependent on their feelings of being inside the social community.

Dewey (1966a, 189) reasons that *"to subject mind to an outside, ready-made material"*, and to impose rigid and normalised requirements on the process of

learning, *"is a denial of democracy and the principles of self-directing individuality"*. Enforcing online participation by defining what is to be discussed and by controlling the time-scale of discussion, formal educators are continuing to maintain control over the learning process. This approach limits opportunities for democratic and radical participation. It rejects processes that might take place outside the prescribed online discussions. It also hinders learners to be seen as complex beings. This approach ignores that learning is not neutral participation in tutor-defined activities but is a result of complex influences, including family, work, community, personal and financial commitments. The constructivist view is concerned with learning that originates from individual learners real life context, but the emerging online learning practices that emphasise discussion participation may be denying the real life individualities in learning.

The literature thus far suggests that the ALN courses requiring regular participation may not be flexible for all learners, and may not enable the alleged egalitarian communication opportunities. The above research findings highlight the need for further inquiry into how different learners use online discussions to engage and construct meaning. The assumption that participation in online discussions will result in formation of an online learning community for all learners needs to be challenged and explored.

2.5 Power discourses in online discussions

The online discussion spaces are accessible anytime and anyplace, nonetheless it is naïve to suppose that decisions to participate, share and challenge ideas are power neutral. The above evidence indicates that when teachers define discussion topics and require participation, power differences in learning processes are inevitable. The required exposition through defined participatory behaviour indicates the presence of power influences within online discussion spaces.

Firstly, the openness of the online discussion environment and opportunity for discursive exchange may be power-laden. This comment from a lurker in an online

listserv called Learning-Org illustrates the hidden power-driven issues of safety, fear and trust.

> *"Hello from a quiet lurker. The discussion regarding lurkers and contributors has finally prompted me to come out of the closet. This list is dynamic and conceptually powerful. I frequently save messages, and review them, when I need to shake up my thinking. But I am a "novice" in Learning Organization theory, and hesitate to add to discussions when I feel unable to contribute a different spin. Often the discussion is a different spin, and it takes me time to digest the different perspectives. So please do not jump on us "learners". After all this list purports to review how to shift the "world" towards recognising and promoting continuous learning and self "education". Some of us who are still toddling are really not ready to run the conceptual marathon yet ... but speaking for myself, I do like to watch it being run. Thank you" (Lisetta Chalupiak 1996)*

This quote demonstrates that despite absence of any obvious tutorial authority, this individual reasoned her low participation was not because she was not learning from the discussion, but because she did not yet feel confident in openly discussing her views in an online forum. She felt others seemed to know more than her yet she was comfortable reading and learning from them. The discussion about silent participants provoked her to take a stand and call for the need to acknowledge difference.

The power differences may be evident when online participation is affected due to feelings of safety and connectedness with others. In an in-depth study of ten online group members (outside the educational context), Nonnecke and Preece (2000b) found that *"lurking"* or silent participation was related to remaining anonymous and preserving privacy and safety. Some individuals did not participate due to the *"lack of connection with others"* and *"felt like an intruder"* in the discussion (Nonnecke and Preece 2000b).

The issue of safety is not only central to participation in online discussions but according to Maslow (1972, 43) it is also central to all learning. In an online discussion some learners may choose silence because they feel uncomfortable in putting their opinions out in the open, while some may feel unconfident in challenging others' views. They may opt for a safe learning zone through silent reading. However, in a formal course that requires compulsory participation, safety through silence may

not be an option. The formality of online practices that aim to promote openness and democratic learning appear to have ignored the need to feel, free, confident and secure to participate and construct meaning in a social context.

An online educator, who is monitoring discussions, may choose to grade learners according to the level of participation in discussions (Epling et al 2003, 415). Most online learner activity is 'open' to surveillance. The awareness of teacher presence is the awareness that one is being watched and judged (Land and Bayne 2002). Foucault (1979, 179) has written extensively on surveillance and its impact on situations where power differences exist. The hierarchical relationships where one is being watched by another, while the watched needs to comply with requirements of the watcher, gives rise to disciplinary power. The surveillance and disciplinary power of the teacher, who has normalised judgement for compulsory participation (Foucault 1979, 179), may lead the silent learner to feel pressured and powerless to continue silent learning. The fear of losing marks might further deter learner confidence in "*reaching out to the environment in wonder, interest, and express whatever skills she has*" (Maslow 1972, 50). In this unequal power distribution, the learner's need for safety may be displaced by fear, lack of choice and lack of control.

Individuals may also experience power differences among themselves, where one learner may appear to contribute more than others, or may display more knowledge than others. If such displays of knowledge are not constructively facilitated, some learners may be left feeling inadequate and dis-empowered. "*A process that is empowering for someone may then be disempowering for others and will be resisted by them*" (Leach et al 2001, 294).

Vygotsky (1962) proposed a lesser-known concept of *perezhivaine* that may be helpful in explaining the feelings that silent participants in the above studies may be relating to. *Perezhivaine* is the way in which participants hidden, complex, affective dimensions of their perceptions and experiences help them derive meaning (Mahn and John-Steiner 2002, 49). This meaning is enhanced through social support and emotional scaffolding, giving a *"gift of confidence, the sharing of risks in presentation of new ideas, constructive criticism and the creation of a safety zone"* (Mahn and John-Steiner 2002, 52). If there is fear and anxiety due to breach of

complementarity between the social support, participants' contexts and experiences, then learning diminishes (Mahn and John-Steiner 2002, 52). Such breach in complementarity may befall on an individual, who may feel confident in learning in silence but is forced to contribute to a monitored and graded discussion. The breach may also occur as a result of a learning paradigm that ignores learners life contexts and responsibilities, and assumes the learning processes are neutral (Brookfield (1986, 7).

Fearless learning is learning for the joy of learning, and not being worried about putting an alternative view forward (Brookfield 1986, 14). In the constructivist paradigm errors are viewed positively as an opportunity to gain insight into understanding the learner's constructs (Murphy 1997, 3). The grading of required online participation in the formal educational environment suggests mistakes are not allowed. This approach ignores the issues of safety, informality, confidence and trust for social learning.

The paradox is that as technologies develop in our increasingly risk conscious society, systems respond by requiring greater accountability from institutions and individuals. This accountability is leading to increased surveillance (Lupton 1995). Technologies such as online discussion boards may be employed to develop open and democratic systems, yet they are consequently transformed into surveillance systems. Increased surveillance removes individual choices, which is the initial intention of these technologies. This further reduces opportunities to build trust and relationships between individuals and monitoring authorities. This dilemma is evident in the so-called democratic online learning systems, where 'open' and 'safety' discourses are misinterpreted as increased teacher monitoring and tutor-control over online discussions.

From the discussion thus far, it is evident that formal online educational rhetoric aims to implement democratic and open learning, and is trying to demonstrate a paradigm shift in thinking away from teacher-controlled to learner-controlled practices. The above problematisation suggests that the emerging practices may not be as open and democratic for all learners. The power discourses in online practices place emphasis on visible participation and are contrary to constructivist thinking.

During conference presentations I was frequently asked, "so how do you know that silent learners or lurkers are learning?" This issue is considered in the following sections before moving on to the justification for this research.

2.6 Are silent learners "lurking" learning?

"Lurking" is interpreted differently in different contexts. The open invitation to join listserves and discussion lists on any topic over the Internet suggests that lurking is not perceived as negative or pejorative. Nonnecke and Preece (2000a, 75) have studied the prevalence of lurking in open health-support and software-support listserves to find that the act of lurking varied between zero percent to ninety percent. They concluded that lurking might be higher in groups with a larger membership (Nonnecke and Preece 2000a, 76). In another study to understand why lurkers lurk, Nonnecke and Preece (2001, 5) found individuals who participated in one online discussion but lurked in others. They suggest that at some point or another we are all lurkers, and that lurking is a common online group activity.

In another study of 10 open listserv members, Nonnecke and Preece (2000b, 130) found 117 possible reasons for lurking, five primary lurking activities, and a number of key lurking strategies. This lurking was not passive but involved active reading and applying organisational strategies to *"determine what to read, delete or save"* (Nonnecke and Preece 2000b, 122). The participation in lurking was also dependent on other priorities in the individuals' lives. Nonnecke and Preece (2000b, 126) conclude that

> *"Lurking is not free-riding but a form of participation that is both acceptable and beneficial to most online groups. Public posting is only one way in which an online group can benefit from its members. All members of a group are part of a large social milieu, and value derived from belonging to a group may have far-reaching consequences".*

Nonnecke and Preece (2000b, 127) also found that when others interactions engendered *"a sense trust and care"* lurkers also felt a sense of community.

During this literature review it was apparent that besides the various levels of lurking there are also varying academic constructions of the term. In conversations with the academics at networking events I met online educators who argued that lurkers are learning, and others who viewed lurking as an unwanted behaviour. The academics with limited experience of online learning regarded lurking as a neutral term similar to surfing. Some suggested that lurking in a discussion was the same as reading or it was like being a silent learner in a face-to-face classroom, and it need not be penalised. During a poster presentation at my institution (titled 'Lurking or Surfing' Gulati 2003a), a sociology researcher shared his view that lurking was a structured means of following a discussion. He suggested that it is different from surfing on the Internet, which can be haphazard and unstructured.

Beaudoin (2002, 148) is one of the first online learning researchers to note that lurkers in the formal online course discussions are learning. His findings challenge the assumption that online discussion participation is compulsory for learning to take place. He studied the primary factors influencing non-participation in online discussions for a course delivered online between University of Maryland (USA) and Oldenberg University (Germany) (Beaudoin 2002, 148). He found that 23 out of the 55 online master's degree learners did not participate in online discussions for one or two modules. In an online survey questionnaire sent via email to the 23 *"low visibility"* or *"no visibility"* learners, he found these learners spent most time reading assignments, reading others' comments, web searches, writing assignments, and spent lesser time on writing online messages (Beaudoin 2002, 149). Beaudoin (2002) also found that three-fourths of these learners' simply preferred to read what others' wrote, or did not feel any different from what was already shared. Forty percent said they weren't sure how to phrase their ideas. Thirty percent said they did not understand the topic well enough to comment. Thirty percent said they were not sure what to say because the discussion had drifted away from the topic. Twenty-five percent said they did not feel comfortable in presenting their ideas online (Beaudoin 2002, 150).

Beaudoin (2002, 153) also found that half the silent learners identified themselves as *autonomous* learner, who did not prefer social learning. All the silent learners said they were processing ideas gained from reading others discussions. Eight learners said they gained more from other course activities than online discussions (Beaudoin 2002,

151). The study concluded that for the silent learners most learning actually occurred in the *"unseen dimensions of online learning"* (Beaudoin 2002, 154), and that their low visibility did not imply less engagement in learning. Beaudoin (2002) argued that while active participants might participate at the expense of their reflection time, it is possible that silent learners are more engaged.

Some educators see lurkers as readers and beneficiaries of others' discussions, who do not share their own ideas (Salmon 2000). Kollock and Smith (1999, 180) describe lurkers as "free riders", non-contributing and resource-taking members. In June 1996, Rick a participant on the Learning-Org open discussion list identified that out of the 1800 subscribers to the list, only 500 ever contributed. He described contributors as change agents and silent participants as intrinsically unmotivated. His comments stirred the' "lurkers'. They argued his comments were judgmental, arrogant and presumptuous (Weiss 1996).

The following active lurker tried to justify his lurking in the open listserv and made a significant statement

> *"As a lurker for many months I want to thank you for your defence of those of us who have never posted to the list. I have a real job (or three depending upon how you count) in which I am a real change agent, two children, a wife in a residency program, and a few hobbies of my own. I have been fortunate to benefit from a few nuggets on this list (I've dropped most others as irrelevant) and not yet been moved to jump into a conversation. Quite candidly, many of the exchanges appear to be among people with well-established relationships and I feel a little like an intruder. So, if it's okay with everyone I'll just continue to lurk, benefit when I can, and wait until the spirit or topic moves me to stick my neck out and become a real participant."(Dr. Charles Taylor Grubb 1996)*

The above comment suggests that online participation is as much to do with personal engagement as to do with performance. An interesting perspective on silent engagement was evident in a drama (face-to-face) education research study. Warner (1997) studied her learners' depth of engagement in the drama roles. She concluded that different learners engaged at different depths and at different times of the performance. She classified her learners into four different categories

- **Talkers**: appeared to engage very quickly by talking and getting involved. On interview it was found that their engagement in the drama roles was superficial. They felt the need to demonstrate their ability through action.
- **Participant Observers**: appeared to take some time before engaging. The interviews revealed they had greater depth of engagement than the talkers. They strived to achieve best performance.
- **Processors**: were most difficult to identify because they rarely took part physically or verbally. The interviews revealed they were more engaged than others, had a deeper understanding of the story and said that they could *feel* the different roles. They were not concerned with performing, but enjoyed the involvement.
- **Listeners / Observers**: never engaged physically, verbally or emotionally.

Warner's (1997) results in drama cannot be directly applied to online learning, but show an interesting similarity to Aviv's (2000) study findings reported above. If online discussion performance is perceived to be anything like a drama performance where others are watching, judging and forming impressions about the performer/learner, then the findings of these studies highlight the need to consider the different levels of engagement through different learning processes. These differences exist due to the roles learners may chose or adopt for meaning construction.

The prevailing discourses prioritises participation and ignores the depth of learning due to informal learning activities that are not be visible to the tutor, such as lurking. The next section calls for the need to recognise informal learning and broader opportunities, for online learning to widen participation and represent the constructivist view.

2.7 Informal learning and lurking

Silent and unseen learning like informal learning is often ignored and neglected in the formal education practices. However as Beaudoin (2002) suggests participation in informal learning through silent lurking may be deeper than visible online participation. It may be just another way of knowing. It is possible that silent learners may be engaged in informal discourse outside the formal control of the tutors. There

are some studies that indicate informal and learner-initiated online interactions may be more empowering and engaging for different learners.

Crook and Webster (1997, 47) describe the findings from three email studies that show most student-student and student-tutor interactions outside the defined online course context were spontaneous, informal and perceived to be most beneficial for learning. Crook and Webster (1997, 51) concluded that the asynchronous online communication tools are poorly adapted to enable informal social practices during leaning. They state that while the formal educators continue to emphasise the need for online participation, the learners may not always benefit from online communication in tutors presence (Crook and Webster 1997, 50). They conclude that having access to shared constructions does not automatically promote informality, and that context is an important factor for informal and social learning (Crook and Webster 1997, 50).

Li (2003, 64) described a triangulation research with ten (six females and four males) in-service teacher-students in a Canadian university studying for an elective Mathematics for Elementary Schools graduate course. This course was delivered through classroom instruction with a pre-defined requirement to participate in online discussions. The students were required to read weekly textbook assignments, contribute one message per week to the online discussion board, and reply to others' messages (Li 2003, 64). As in Hughes and Daykin (2003) study, Li (2003, 74) found that despite the pre-definition of discussion themes learners only discussed two themes not suggested by the tutor. These two themes were sensitive topics that emerged from the learners' interactions, which Li (2003, 69) admits would have been difficult for him to introduce. The themes were issues around *"disability and normalisation"*, and *"gender differences in understanding geometry"* (Li 2003, 71).

Li (2003, 75) also reflected on the influence of his and his colleagues power position. The learners' discussion contributions reduced when they observed tutors contributing in the online forum. In this study Li (2003) did not explore issues of silent participation or community building, but concluded limited overall participation in tutor-controlled discussions. His study demonstrated that allowing the learners to choose discussion topics could result in more radical and critical social construction.

The increased online participation in learner-initiated discussions in the absence of tutors in Li's (2003) and Crook and Webster's (1997) study also suggests that formality may reduce access to the online communication space for knowledge construction. The analysis and conclusions of studies by Hughes and Daykin (2003), Sims (2003), Li (2002) and Crook and Webster (1997) demonstrate that learners want to be able to take risks during social learning but may feel inhibited due to the formal course requirements to participate in tutor-controlled online spaces. While some learners may gain the confidence to take risks and learn through participation in informal discussion on topics of their own choice, others may find this confidence through lurking and reading others exchanges. Silent or lurking roles may be empowering and engaging for some, while other learners may prefer active participatory roles. As noted in Chapter One 'active' and 'silent' roles are not simply learning behaviours, but may be the learners' personal constructs enacted to understand the world (Kelly 1970, 25).

The popular pedagogy that acknowledges formalised and measurable roles over informal and silent roles, without a deeper understanding of issues that affect knowledge construction, is denying diversity in learning and may not be constructivist (Gulati 2004b). This denial of the diverse roles and learning processes may also be marginalizing some learners and excluding them from the flexible and accessible learning opportunities. The following section justifies the need to understand the reasons why different learners choose the different roles and how these roles support their knowledge construction.

2.8 Justification for the research question

This literature review indicates that there may be more to silence in online discussion than first presumed. The silent online and blended learners may choose other learning processes and ways of knowing that are not visible to the tutor. If we are to realise a lifelong learning society and constructivism in education then we need to challenge the limiting influences of the dominant educational discourses that reward one way of knowing over another. We need to understand how the learners who do or do not participate in online discussions make meaning.

Cervero and Wilson (2001) call for adult educators to empower their learners through re-distribution of power. This re-distribution of power can take place when one begins to recognise the suppressive power of the dominant discourses that marginalize and socially exclude individuals who do not 'fit' or adapt to the requirements of the hegemonic practices. The recognition of power differences and surfacing of hegemonic practices can help adult educators to develop strategies for learners to benefit from the previously unacknowledged yet abundant informal learning experiences (Gulati 2003b; Gulati 2003c). We can face this challenge by opening up learning and understanding the different roles and learning processes for knowledge construction. An examination of the active and silent roles in online discussions is warranted to understand the significance of immeasurable and untold aspects of learning.

Some research studies explored in this literature review did question why silent participants might not contribute to online discussions. This exploration was largely from the perspective that gave precedence to online discussion participation over other learning processes. To date, most research reveals the technology or education experts' perspective on the online learning processes rather than the learners' worldview in the online context (Timmins et al 2004, 3). There is limited research that takes a bottom-up approach to understand how learners are experiencing and engaging in online and blended learning (Conole 2004). There is also limited empirical evidence that provides a more holistic view of active and silent learners voices, and an in-depth study of their social and individual experiences to construct meaning in courses that use online discussion technologies. The limited research in the area was recently identified by JISC, who have since funded research into understanding learners' engagement in e-learning (Beetham 2005).

The research questions stated in Chapter One were designed to examine the different ways of knowing for active, moderate and silent participants. The aim was to question if the differences in knowledge construction lead to different levels of online discussion participation. This research aimed to study different learners' experiences and constructs including and beyond the visible and measurable online discussion participation. The research also aimed to question if the silent learners were learning.

It was proposed that in drawing from the diversity of learning experiences online pedagogy might move towards the constructivist worldview. These aims were justified because they help to contribute a different perspective on the emerging theoretical underpinnings in this new field of learning.

I also had a personal interest in the research aims. During my practice and development as an online tutor for student nurses. I found that in order to design learning activities, to enable different learners to engage, and to effectively use online technologies for learning, it was necessary to examine different learners' ways of knowing. This research provided an opportunity to directly involve learners in the reconstruction of their learning experiences, and to develop myself as a critical tutor.

2.9 Conclusion

This chapter has reviewed literature in the online learning field. It has problematised the popular emphasis on online discussion participation and its interpretation of the constructivist worldview. This problematisation has helped to locate and justify the research problem in the policy and formal education contexts. It has challenged the assumption that inclusion of information technology in adult learning will inevitably widen participation and make learning more flexible and accessible. The discussion has shown that despite good intentions of the widening participation agenda and the purported constructivist view in education, information technology use may be benefiting some learners and excluding others. It has questioned the emphasis on online discussion participation for socially constructivist learning. The review suggests that formal education requirements for online discussion participation, which allow monitoring and judgement of the visible learning processes, may be normalising learning and marginalizing those who do not conform to these requirements.

The empirical and anecdotal evidence cited indicates that the silent learners or lurkers who are not seen in online discussions may also be learning. Some silent learners may prefer informal social learning that is not seen or controlled by the tutor. The review concludes that in order to locate online learning in the constructivist paradigm and to use IT to make learning more accessible for different learner groups, there is a need to

examine and acknowledge different ways of knowing. The research problem is justified. The research aim is to examine different learners knowledge construction, and to understand the reasons behind differences in discussion participation in online and blended courses. The following chapter revisits the constructivist paradigm and demonstrates how the chosen research methodology was driven by the research question.

Chapter 3

Tools to Understand Knowledge Construction

This chapter describes the combination of qualitative and quantitative research methods used to empirically examine how active, moderate and silent learners engaged in online learning. The discussion begins with the identification of constructivism as the guiding paradigm for the research questions and the research methodology. This follows a brief discussion of the research methods considered for this study. This leads to the justification for using the Repertory Grid Method based on Kelly's (1970) Personal Construct Theory. The Personal Construct Theory, its basic postulate and eleven corollaries are briefly described. This follows an explanation of the Repertory Grid Method and how it was used to examine learning experiences and knowledge construction for different learners.

The methodological issues including sampling, method description, research ethics, validity, strengths and limitations are considered. The method section illustrates the different stages of data collection, which included two interviews. The first interview is described in stages where the main purpose was to identify the different learning activities that learners engaged in during online and blended courses. The Repertory Grid interview method helped to reveal how the individual learners used these learning activities to construct meaning. The discussion shows how the learning activities or elements and personal constructs for learning were elicited. [Personal constructs are the theories or models that individuals hold about the world (Kelly 1991)].

The first interview generated qualitative data and a quantitative grid showing numerical relations between learners' elements (activities) and their personal constructs. The grid was quantitatively analysed for multiple correlations and to extract principal component factors for elements and personal constructs. The principal factors were used to develop visual graphical representations of participants learning dimensions. The feedback interview asked the learners to examine and label

these representations to explain how they processed them to make meaning. This facilitated further deconstruction of the learners' knowledge construction processes.

The latter part of the chapter explains the qualitative data analysis method using the multiple data formats and ATLAS.ti, a qualitative software package. This follows a consideration of the ethical issues affecting the research participants and the research process. The discussions on research validity, objectivity, strengths, and limitations offer a further insight into the research methods and issues considered during data collection.

3.1 The constructivist paradigm

Our preference for what we want to know is influenced by our view of the world. Our worldview also determines how we choose to understand the world around us (Cohen et al 2001, 3; Strauss & Corbin 1998, 28). A paradigm or worldview is the hypothesis we develop to understand our social reality. Our experiences are central to how we see the world, how we settle on that view and how we define and address the problems we see. Kuhn (1977) states that scientific theories and views about social reality are constructed around a dominant paradigm. This paradigm may not answer all questions but may be open enough to have issues addressed by future scientists.

In scientific research, a paradigm provides epistemological foundations for the research question and influences the choices of research methods (Guba 1990). It is important to surface these foundations, to justify the choice of research methods. In this research the main question was to explore how active, moderate and silent online discussion participants engaged and constructed meaning in online and blended formal education courses. So, what was the epistemological basis for this question?

When a research question is posed, it is acknowledging one paradigm and challenging another (Guba 1990). The discussions in Chapter Two illustrated the contention between the objectivist and constructivist paradigms affecting the online learning pedagogy. The analysis in the previous chapter highlighted the dominance of the objectivist worldview in formal education that has led to political and pedagogical

assumptions about what contemporary use of technology might do for different learners' ways of knowing. This worldview of contemporary online learning practice expects all learners to conform to the defined learning processes and overlooks individual differences. It emphasises visible learning processes and outcomes as evidence for engagement and knowledge construction. In contrast, the research questions acknowledged and assumed the possibility of learning beyond visible participation in online discussions. Silence was hypothesised as a role that learners might adopt for constructing meaning, and possibly as an alternative process for learning engagement. These questions aimed to challenge the objectivist assumptions that silence in online discussions implied no learning.

In the objectivist paradigm the research methodologies take a mechanistic view of learning and look for measurable and observable discussion participation data (Cohen et al 2001, 17). The research studies situated in this paradigm may be valuable to understand some learning differences, but they may ignore the unseen individual differences in learning. They may leave the notion of silence in online discussions unexamined. The questions posed in this research called for an alternative paradigm and methodology to examine the unexamined (Eisner 1990, 89) silence in online discussions. Such a paradigm needed to allow open-mindedness to examine engagement for active, moderate and silent learners.

The methodology for this research was therefore situated in the constructivist worldview. As stated in Chapter Two, constructivism accepts multiple realities (Phillips 2000). The paradigm suggests these realities are understood with reference to the theories or mental frameworks that individuals hold about the world (Guba 1990, 25). According to Guba (1990, 26) if reality is subjective and individual, then subjective interaction is the main way to understand the multiple realities and individual mental frameworks. Therefore the chosen research methods needed to involve interactivity between the researcher and the participant (Schwandt 1990, 272). The research techniques also needed to allow participants the space to re-conceptualise and reconstruct learning experiences during online and blended courses (Giddens 1997). Within this paradigm the research results could not be assumed as absolute truths. Instead they were interpretations subject to change as the participants tested old constructions in light of the new learning experiences and learning designs

(Kelly 1970, 11). The following section describes how the constructivist paradigm guided the choice of research methodology.

3.2 Choosing a Research Methodology

If the research methods focused on discussion postings and omitted other learning processes, the results would give an incomplete understanding of 'how' and 'why' different learners engaged and constructed meaning. This research did not aim to examine online discourse as the main social phenomenon. The main research query focused on 'how' and 'why' learners in courses with online discussions constructed meaning. The chosen research methodology needed to account for different learning processes that learners engaged in, including online discussions. The constructivist paradigm and the need to focus on diverse learning processes disregarded online discussion observation or discourse analysis of discussion postings as the main research methods.

The discussion of the proposed research questions with peers at networking events suggested the learning style questionnaires may help to study differences and similarities between active, moderate and silent individuals. The popular learning style questionnaires include Honey and Mumford's questionnaire (1992), Myres-Briggs type indicators (1985), Kolb's inventory (1999), and Entwistle's surface and deep approaches (2001). These were rejected on philosophical and methodological grounds. To date there was limited research on their effectiveness in different social and cultural contexts. Contrary to the constructivist paradigm that advocates subjective interactivity, the standardisation of questions in learning style questionnaires suggested that the pre-set scores were an accurate representation of how individuals preferred to learn (May 2001, 91). The questions with pre-defined scores would give participants' limited freedom, input, and opportunity to change or expand constructions.

The learning styles questionnaires were also irrelevant on methodological grounds because the resulting learning style labels would result from pre-prepared questions. They would lead to learner categorisation and would pigeonhole learners into boxes,

without a deeper understanding of the individual contexts (Coffield et al 2004, 61). The research aim was not to create learning categories but to understand differences and similarities in the learners' engagement processes. The questionnaire method would also limit conversational interactivity between the researcher and the participant. This would also exclude discursive opportunities to explore differences. A recent study by Coffield et al (2004, 52) has further amplified the learning style questionnaire controversy. The study found that out of thirteen popular learning style models only one, Allinson and Hayes (1996) met the four criteria for internal consistency, test-retest reliability, construct validity and predictive validity (Coffield et al 2004, 63).

The research interview was a possible method that could allow conversational interactivity. It may help to gain insights into the individual processes, contexts and identify reasons for differences or similarities. However an interview could be approached in different ways. A positivist approach would seek to reveal as exactly as possible a reflection of reality (Miller and Glassner 2004, 123). Such an interview would have standardised questions, i.e. all participants would be asked exactly the same questions with little room to deviate from the schedule (May 2001, 122). The researcher would assume a neutral role and not ask any additional questions or provide prompts. This approach would require the participants to fit into the researcher's pre-prepared questions. This interview approach was rejected because it offered limited interactivity to engage in a deeper discussion about participants learning processes.

In contrast, an interview method based in the constructivist paradigm would help to reveal the social world as reconstructed and conceptualised between the participant and the researcher. In this approach, the final analysis would not reject the possibility of a social world beyond that portrayed in an interview (Miller and Glassner 2004, 126). Such an interview would use a qualitative approach and include a flexible, iterative and open discussion where the researcher would have an aim in mind and the participant would be free to discuss issues at depth. According to Miller and Glassner (2004, 127) this approach is more suitable for a research that aims to *"generate data to gain an authentic insight into people's experiences"*. The problem with an open-

ended and unstructured interview approach is that the participant might talk about issues unrelated to the research questions (May 2001, 124).

Miller and Glassner (2004) call for a balanced approach where the researcher may have some influence over directing the interview. They suggest that in a shared construction the researcher and the participant interact to develop an inter-subjective depth and mutual understanding of the participants' social worlds. The challenge with this approach was that if I were to even slightly direct the interview it would introduce researcher bias. I would then influence what the participant talks about and in what depth (May 2001, 127). So, how could I use the interviews to understand the learning processes of others but ensure my presence and subjectivity had as little as possible influence on the data collected?

This research espoused an interview approach where I could engage with the participants and give some direction. The chosen approach was guided by a technique that enabled participants to play a central role. The interview technique is called the Repertory Grid Method, designed by George Kelly (1970). Kelly was a psychologist and mathematician in the 1950s in the USA. He based his practice in the constructivist paradigm. His technique accentuated the central role of his clients to deconstruct how they processed experiences and made meaning (Bannister and Fransella 1989, 27). He based this method on the theory of personality called the Personal Construct Theory (PCT). The PCT philosophy is related to the constructivist paradigm because it focuses *"upon the way individuals perceive their environment, the way they interpret what they perceive in terms of their existing mental structure, and the way in which, as a consequence, they behave towards it"* (Cohen et al 2001, 337). The Repertory Grid Method based on this theory was chosen to understand what learning activities the active, moderate and silent participants chose, how they used them to construct meaning and what mental structure or personal constructs influenced their choices. The Repertory Grid Method would help to understand the learners' construction processes, their differences in learning engagement and the choices affecting online discussion participation.

This method allowed me to give slight direction to the discussion while enabling the participants to feel free to re-construct their online and blended learning experiences.

The method allowed various opportunities to have checkpoints in the research design. This enabled ongoing analysis and reflection on the emerging concepts during data collection (Miller et al 2004, 330). It also helped guided questions and comparative analysis during data collection with future research participants. The process of data collection facilitated the testing of *"the scope of generalisation derived from one part of the research setting by considering whether it holds under different circumstances"* (Miller et al 2004, 330; Strauss and Corbin 1998, 89). This interview and ongoing analysis approach supported the development of concepts and themes grounded in the qualitative data (Strauss and Corbin 1998, 88) and unearthed a grounded theory of online learning described in chapter seven.

My presence in the interview process meant that some researcher bias was inevitable during an interview that involved reconstruction of participants' experiences (Strauss and Corbin 1998, 97). This called for greater objectivity and sensitivity during data collection and analysis on my behalf, as described in a latter section. The following sections introduce and explain the Personal Construct Theory and the Repertory Grid Method.

3.2.1 The Personal Construct Theory

In the Personal Construct Theory (PCT), Kelly (1970, 7) suggests that every person is a scientist, who *"observes, construes relationships, articulates theories, generates hypotheses, ventures predictions, experiments"* and tests those theories. Just like a scientist, every person contemplates events, while seeking to predict and control the future experiences (Kelly 1970, 4). The PCT encapsulates this view in the basic postulate, *"a person's processes are psychologically channelised by the ways in which he anticipates events"* (Kelly 1970, 9). This statement is the essence of the conceptual framework and the method that can assist in comparing processes for individuals who may participate in similar or different experiences to make meaning.

According to Kelly (1991, 85), the theories and hypothesis that individuals hold are not permanent. They are metaphoric intersects of several personal construct dimensions, which can be validated or changed as one has new experiences. As a scientist, an individual is not in search of neat conclusions but is developing strategies

for a long-term quest for understanding (Kelly 1991, 8). As one encounters new experiences, previous constructions help to decide how to respond or behave. The new experiences also help either to confirm previous constructions or deconstruct old constructions and reconstruct newer ones. This ongoing deconstruction and reconstruction is what Kelly (1991, 2) calls learning. He identifies the underlying philosophy of his theory as *'constructive alternativism'*. This alternativism is the way in which an individual tests out constructions in similar and new experiences, thus accepting or discarding constructions to help process and anticipate any future events.

It is useful to point out that Kelly is not alone in supporting this changing view of reality. Kuhn (1977) in his discussions of paradigms and paradigm shifts, and Popper's (1966, 260) view of knowledge as a series of 'conjectures and refutations' and trial and error, also echo this view that human mind is relentlessly active in its attempts to understand the world.

The PCT acknowledges social and individual ways of understanding the world. The different ways of knowing are understood as interdependent on each other as well as independent of each other depending on individuals and their contexts. These perspectives are summarised in the PCT's eleven corollaries that are extensions of the basic postulate (Kelly 1970, 11). These corollaries guided the research methodology to elicit how active, moderate and silent learners constructed meaning during online and blended courses.

Construction Corollary: *"A person anticipates events by construing their replications"* (Kelly 1970, 11). No two events in any individual's life are the same. When faced with new events or experiences, one devises theories or hypotheses from past experiences and uses those theories to anticipate new experiences. The different viewpoints and behaviours correspond to different theories of one's social world created from past encounters. These theories are called *personal constructs* abstracted by differentiating experiences into two homogeneous groups (Kelly 1970).

According to the PCT no one person's construction is better than another, but all are open to question, reconsideration and transformation (Kelly 1970, 1). The constructive alternativism philosophy views behaviour *"not as a reaction, but as a*

proposition, not as an answer but as a question" (Bannister and Fransella 1989, 31). This suggests active, moderate or silent online behaviours may be seen as experiments in trying out something, or as different roles indicative of the meaning making processes. Thus construing active participation as learning, and lurking as lack of learning engagement, is a judgmental exercise that would result in discriminatory treatment of learners. The recognition that every person is different is stated in the **Individuality Corollary**: *"Persons differ from each other in their constructions of events"* (Kelly 1970, 12).

Organisation Corollary: *"Each person evolves, for his convenience in anticipating events, a construction system embracing ordinal relationships between constructs"* (Kelly 1970, 12). This corollary recognises that each person is faced with multiple events and will organise her [sic] constructions dependent on priorities and implications. This corollary provides an opportunity to question, for example, if a learner with personal and professional commitments might place lesser priority over participation in online discussions.

Dichotomy Corollary: *"A person's construction system is composed of a finite number of dichotomous constructs"* (Kelly 1970, 12). Kelly (1970, 13) suggests past and anticipated experiences can be located on a geometrical axis. The theory suggests that the geometrical axes are metaphoric representations of our bipolar constructs. Each axes represents a construct dimension in our psychological space. We hang or position our experiences along these axes. In doing so, we call on these construct dimensions when we are trying to understand past events or are anticipating future events (Kelly 1970, 13). It should be noted that construct dimensions are not Cartesian axes, but are abstract metaphoric dimensions that result from distinction between events.

According to Kelly (1970, 13) these distinctions between events are dichotomous because individuals make sense and construct meaning by comparing and contrasting experiences or events. For example, a learner experiencing online learning might compare online discussions and face-to-face discussions, and use the personal constructs 'at a distance from others' versus 'close to others' to distinguish between the two. If these two constructs are positioned at two ends of a geometrical axis, the

learner may position other learning activities along that axis. This positioning of learning activities may help to understand the learner's personal construct system and how might they use different activities to make meaning.

Choice Corollary: *"A person chooses for himself that alternative in a dichotomised construct through which he anticipates the greater possibility for the elaboration of his systems"* (Kelly 1970, 15). This choice is not between objects or outcomes, but between what a person decides to do (Kelly 1970, 16). This corollary offers an opportunity to explore what might affect the choices for different and similar learning engagement processes that lead to differences in online discussion participation.

Range Corollary: *"A construct is convenient for the anticipation of a finite range of events only"* (Kelly 1970, 16). This corollary suggests that it would not be possible to understand all the psychological processes and gain a complete outlook of a person, thus highlighting the limitations of the research process. Many events lie beyond the *range of convenience* of the described constructs and would not be made explicit until other related constructs and experiences were elicited.

Experience Corollary: *"A person's construction system varies as he successfully construes the replication of events"* (Kelly 1970, 17). This corollary is about learning from experience. Kelly (1970, 18) states that learning is a cycle with five phases: anticipation; investment, encounter, confirmation or disconfirmation; and constructive revision. This corollary offered the opportunity to discover how past and present learning experiences might influence individual learner engagement.

Modulation Corollary: *"The variation in a person's construction system is limited by the permeability of the constructs within whose ranges of conveniences the variants lie"* (Kelly 1970, 19). An individual can take advantage from events if her [sic] construction system is sufficiently permeable and open to novel events within the range of convenience (Kelly 1970, 19). This corollary suggested learners may adapt, but their level of adaptability might be influenced by how they construed the online learning situation and their personal abilities.

Fragmentation Corollary: *"A person may successively employ a variety of construction subsystems which are inferentially incompatible with each other"* (Kelly 1970, 20). An individual's construct systems are not rational or logically intact. Kelly (1970, 20) explains this with an example that a person may move from an act of love to an act of jealousy to an act of hate. Although love and hate are quiet the opposite (p.20), it is this form of fragmented construction that allows one to learn and re-construct from complex experiences. This corollary may help to analyse why a silent online learner might have many negative feelings about online discussion participation, yet might appreciate and gain from reading others discussions.

Commonality Corollary: *"To the extent that one person employs a construction of experience which is similar to that employed by another, his processes are psychologically similar to those of the other person"* (Kelly 1970, 20). This corollary does not imply that all silent learners learning experiences and constructs are the same. Instead the emphasis is on the similarity of the construction processes or contextual influences. For example, similarity between circumstances, cultural influences and power discourses encountered by different learners in different or similar contexts might help to identify common reasons for non-participation in discussions.

Sociality Corollary: *"To the extent that one person construes the construction processes of another, he may play a role in a social process involving the other person"* (Kelly 1970, 22). This corollary identifies the difference between construing another person's construction and construing their behaviour (Kelly 1970, 23). Kelly (1970, 24) argued that, as a scientist every personal tries to anticipate another person's constructions and is actively involved in re-conceptualisation of others experiences. When a learner engages in social learning she[sic] may chose a role for example listening or two-way interaction to understand the view point of the other person. It is possible that in an online distance context, reliance on textual exchange may limit the roles individual might play to construct and understand another person's processes.

A study of Kelly's eleven corollaries suggests that unlike the extreme two versions of constructivism, the PCT acknowledges the cognitive (individual) and the social in knowledge construction. The theory gives a good basis for exploring knowledge

construction for active, moderate and silent learners who may prefer individual and/or social ways of knowing. The corollaries also relate to the research questions posed. The following section demonstrates the application of the theory and how it was used to meet the research aims.

3.2.2 Introducing the Repertory Grid Method

So, how could the PCT be used practically to understand active, moderate and silent learners different ways of knowing? Bannister and Fransella (1989, 31) state that a person's behaviour will make little sense unless we understand the meanings they assume in those behaviours and the questions they are asking when they participate in these behaviours. Kelly's Repertory Grid Method based on the PCT provided a systematic and rigorous interview method to capture the learning dimensions, processes and personal meanings learners constructed to chose active, moderate and silent roles.

Kelly (1991) initially designed the Repertory Grid Method for his psychotherapy clients. Since then the PCT and the Repertory Grid Method have been applied by many professional groups to understand how people think and construct meaning. The Repertory Grid Technique applications have extended psychotherapy applications, for example in family therapy (Vetere 1991, 557). There are now applications in business and marketing (Stewart et al 1981), geographic information science, spatial inequalities, environmental change (Coshall 1991, 354) and educational research (Phillips 1981, 95; Pope and Shaw 1981, 105). Shaw (1981), Beail (1985) and Bannister and Fransella (1989, 74-85) cite numerous pieces of educational research using the PCT and the Repertory Grid Method to understand teachers and learners ways of knowing and constructing meaning.

In particular, Micklem's (1978) study that used the Repertory Grid Method to study the meaning of silence for children who did not contribute in classroom settings resonates the aims of the present research. Micklem's (1978) approach was to interview talking and silent children to construct Repertory Grids and understand how these children saw themselves and each other. He found that although children used similar construct for social relationships and self-perception, the talkative children did not sit near the silent members. In contrast, the silent children did not see themselves

apart from the talkative group (Micklem 1978). The research evidenced the application of the Repertory Grid Method to examine silence in a classroom setting for children.

3.2.2 a Why the Repertory Grid Method?

The Repertory Grid Method was chosen for this research because firstly it was based on a theory situated in the constructivist paradigm that acknowledges different ways of knowing. Thus, it allowed the application of a structured interview technique to understand knowledge construction for active, moderate and silent adult learners. It provided an opportunity to examine the unexamined silence in the online learning context.

Secondly, the method allowed learners to play a central role in reconstructing how they constructed meaning in online and blended courses. Thirdly, it included qualitative and quantitative approaches that helped to surface the learners' personal constructs and to discuss the questions individuals ask themselves when they chose certain learning activities over others. The method helped to make explicit the deep-seated constructs, reasons or mental theories the learners used to explain their choices. It also helped to uncover how their construal of different learning activities formed part of their learning engagement processes and helped them to make meaning. Fourthly, the method helped to collect data in audio, textual, numerical, graphical and visual forms that could be compared to examine differences and similarities between the learners' constructions.

The following subsections introduce the processes involved in the Repertory Grid Method. The research stages section then examines how the method was used in this research study. Figure 3.1 also charts the different stages of the Repertory Grid Method as applied in this research.

3.2.2 b Eliciting elements

The Repertory Grid Method begins by developing a list of elements that can be nouns or verbs related to what is being investigated. The usual method is to ask the participant to list the elements in relation to the questions being asked. For example if the purpose of the interview is to explore how an individual perceives her [sic]

relationships with others, then elements may be a list of nouns, listing the different people she [sic] has relationships with. The nature of the inquiry will determine who is listed. If the concern of the inquiry is related to some form of action then the element list will be verbs describing the activities. Thus if the research is concerned with exploring how individual engages in learning, the element list will include a set of activities that she [sic] undertakes to learn.

The elements must be described in discrete terms (Kelly 1970). For example when describing activities the participants need to be encouraged to pin-down the activity as closely as possible in time and space (Stewart et al 1981, 30). The elements also need to be homogenous and relate to the context that the participant understands and knows about. The elements, particularly activities can be elicited through interview by asking participants to recall specific incidents and locate what happened, or what they did. There is no fixed standard on the number of elements to be elicited. The experienced Gird researchers (Pope and Keen 1981, 41) recommend eight to fifteen elements.

3.2.2 c Eliciting constructs

After the elements have been elicited, the participant examines them to reveal the personal constructs. Kelly (1970) describes constructs as if they were a pair of spectacles through which a person views the different sections of their world. As stated previously they are theories, mental models or hypothesis that a person forms of the world, from past experiences. The person uses these theories or models to discriminate between future experiences and to anticipate future possibilities.

In order to elicit constructs using the elements, the participant is required to consider three elements at random at a time to identify similarities between any two and difference with the third (Figure 3.1). Kelly (1991) calls this the triad method. These differences and similarities help to describe the personal constructs that individual may associate with their elements. According to Kelly (1991) these construct are bipolar therefore should be represented as pairs. He argues that we cannot understand what an individual means by 'good', if we cannot understand what the individual means by 'bad' (Stewart et al 1981). However the personal constructs pairs do not always contain opposites of each other, but more often they are contrasts between elements. For example, a participant might state two elements are exciting versus the

third element is boring. Here the personal construct pair is 'exciting' and 'boring'. The construct pair could be 'critical versus accepting' or 'critical versus uncritical', depending on how the learner perceived the differences and similarities in the elements.

The main role of the interviewer at this point is to listen to the participant and never to impose any explanations or constructs. This does not imply the interviewer is a non-participant in the process. There may be times that the participant finds it difficult to verbalise the differences and similarities between the elements. The interviewer questions and probes while being non-directional (Fransella and Bannister 1977, 108). The probing and questioning can surface additional reasons for similarities and differences between the triad elements, until the participants cannot deduce any more construct pairs. The questions put to the participant include:

- *Are there any other reasons why these elements are the same and the third is different?*
- *What makes the third element so different?*
- *Is there any other way you could compare and contrast the elements in this triad?*
- *You said this is exciting, what is more exciting about this, and is the same thing not present in third experience where you said it is boring?*

The triad method and probing questioning to surface deep-seated constructs is repeated until all elements in the participants list have been considered in at least one triad. The interactive questioning while being non-directional encourages the participants to verbalise their thinking and helps to reveal deep-seated constructs.

Figure 3.1 A flowchart for the Repertory Grid Method

The First Interview

1. Eliciting Elements: Elements should represent the area of study. In this study, elements were learning activities that the learners participated in during online and blended courses. The learners used these activities to discuss and describe their learning processes.

1a. Social and individual learning activities were listed. Each element was written on a blank card and labelled E1, E2, E3, and so on. Participants varied in the number of elements elicited. (Appendix VI for elicited elements)

2. Eliciting Constructs: Three elements are chosen at random at a time to ask the participants which of the two elements are similar as compared to the third. This results in contrasting description of elements. These descriptions are the personal constructs. Probing and questioning 'why and why not' can reveal more data and construct pairs for the different element triads (Appendix VII for elicited constructs)

e.g.

E3 E10 E14

E3 and E10 are same because I learn more here

Personal Construct a
I learn more here

E14 is different because I don't learn much here

Personal Construct b
I don't learn much here

3. Developing the Repertory Grid: Participants use a scale of one to five to rate each element against each construct pair. This helps to show numerical relationships between the elements and the constructs, and extracts qualitative data as participants verbalise their reasons and choices for rating.

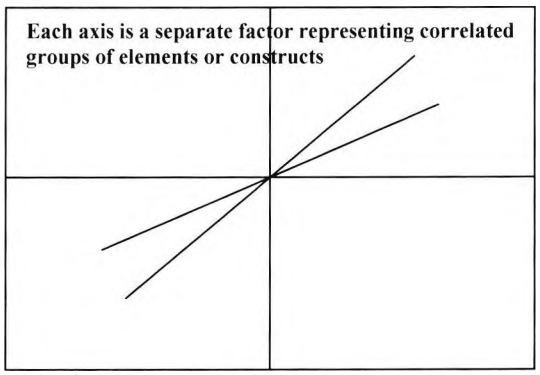
e.g.

One construct to represent each row	One element to represent each column								Contrasting construct to represent each row
	5	1	5	4	3	2	1	4	
	1	5	1	3	3	2	5	3	
	5	1	2	1	3	5	1	5	

A complete numerical grid has a complete set of constructs rated for all the elicited elements.

4. Factor Analysis: is a mathematical analysis that is used to understand the numerical relationships between the constructs and elements indicated in the Grid. The analysis identifies the main factors that show high correlation between groups of elements and the groups of constructs. The resultant main factors for elements and constructs are represented on geometrical axis of graphs, with each axis representing a factor or a psychological dimension

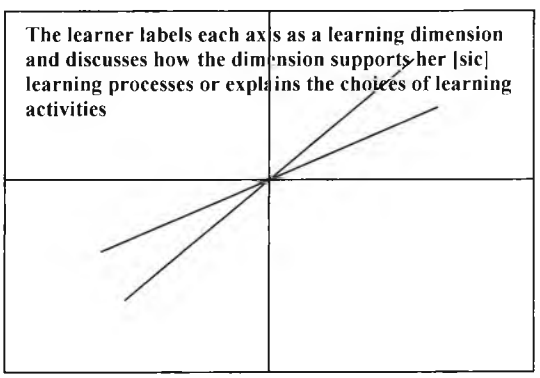
e.g.



The Feedback Interview

5. Feedback Interview: Participants are asked to consider the factor analysis results as visualised on the graphs. They label each axis as a psychological dimension and discuss how these dimensions interact to construct meaning and to choose what to do next. The labelled graphs are metaphoric representations of the psychological processes involved in making meaning.

e.g.



The individuals (both researcher and participant) may interpret words, statements and discussions differently, often based on their past experiences. This interview approach of successive approximations can provide opportunities to clarify the terms used by the participants and to understand their outlook when they use different words or descriptions. However, the possibilities of misinterpretations of how words are used as constructs, their meanings and applications still remain (Yorke 1985, 388). For example, did the participant use the word 'informal' only when talking about learning in absence of a formal authority or person? Did she [sic] apply 'formal' to represent the processes that help to confirm her [sic] informal knowledge using formal sources? If the participant described some experiences as 'formal' then can other experiences assumed to be 'informal'? If these hidden issues are left out during the interview, the verbal descriptions of the constructs, which are the theories people have to understand the world, may be based on the researcher's assumptions. Thus every effort is needed to gain open and clear explanations and reasoning from the participant.

The Repertory Grid Method supported by the PCT can help to look beyond verbal descriptions and assumptions of meanings. Kelly (1991, 189) designed the Grid Method to understand the relationships between one's personal constructs and how one applies different constructs to the different experiences. The Grid also helps to identify the range of convenience for each construct pair, e.g. *formal vs. informal* in relation to the different experiences (Kelly 1991, 49), as explained below.

3.2.2 d Constructing the Repertory Grid

The third part of the method aims to reveal how participants relate each element to all the personal constructs elicited through the above process. Kelly (1991, 100) recommends the participants rate how each element relates to each construct. This grid construction method developed by Kelly (1991) helps to extend the interview reconstruction beyond the verbal assumptions of meanings.

Originally, Kelly used a dichotomous scale, 1 and 0 or ✓and ×. He asked the participants to place each element alongside either one of the construct pairs (Kelly 1991, 100). Pope and Keen (1981, 45) identified limitations of this method because it would limit and force the participant to fit their elements at one or the other construct

pole. In contrast, the ranking method asks the participant to rank each element individually between the two construct poles. For example, if there were twelve elements then the number of ranks between the two construct poles would also be twelve. Although ranking allows for greater discrimination between the elements than Kelly's dichotomous scale, Pope and Keen (1981, 46) noted it was more tedious, time consuming and difficult to understand for all participants.

A popular method is the rating method that uses a rating scale of one to five or one to seven. The personal constructs from each pair are placed at each end of the chosen scale (commonly, one to five) (Stewart et al 1981, 70). The participants are asked to rate each element against each construct pair. This process can be illuminating as the participants often think aloud and verbalise their reasoning about where and why they might locate each element on the scale. This process allows the recording of participant thoughts about their elements and constructs in quantitative and qualitative formats. The rating method results in a numerical grid that represents the numerical relationships between the participant's elements and constructs (Figure 3.1). These relationships can become more meaningful if the grid numbers are interpreted in qualitative terms.

3.2.2 e Factor analysis of the Grid

Factor analysis is a commonly applied data reduction method used to identify and classify numerous variables to make sense and order out of the complex interrelations between variables (Child 1990, 1). Kelly (1991, 203) recommends this method to study the interrelations between elements and between constructs from the Repertory Grid Matrix.

Since the development of the Repertory Grid Method various computer programs are available for the factor analysis of the grid matrix, and to reveal relationships between an individual's constructs and elements (Cohen et al 2001, 344; Beail 1985, 14). The factor analysis can also be completed using the popular statistics package, SPSS (Statistics Package for Social Sciences). The calculations involve input of the numerical grid into SPSS and to run the Factor Analysis program. The results identify correlation and factors for the elements and the constructs in the grid. The SPSS program plots two resultant construct factors or principal components on different

axis and shows the elements as plots in relation to the principal component axes. The visual plots help to illuminate how the participant may have grouped the different elements and constructs in her [sic] mind, when she [sic] was rating them. It is not possible to go inside someone's mind to know what he or she is really thinking, but the rating process followed by factor analysis can help to get closer to the participants thought processes (Kelly 1991).

In a constructivist methodology that places the participant at the centre of data collection, it is misleading to solely use quantitative analysis to interpret the results. The factor analysis results and resultant principal components are merely quantitative representations of the participant's personal construct system. These results still leave many questions unanswered about why certain elements or constructs are highly correlated. What is going on in the person's head that makes them chose certain types of experiences over others? How do these elements and construct work together to help the person learn and make meaning? To answer these questions it is important to involve the participant in the preliminary analysis of the factor analysis results.

Kelly (1991) recommends the use of visual plots with principal components (or resultant factors) as axes on a graph, with plots of elements and constructs, to discuss with the participant (Figure 3.1). Kelly (1991) and the research studies since his work have used two axes to represent two principal components or factors in one graph at a time. These are used in discussions at the feedback interview.

3.2.2 f The feedback interview

The feedback interview is important to ensure the interpretations of the results are not the interviewer's reconstructions but are reconstructions of the participant. The interview uses the graphical plots to ask the participant to explain why certain elements and constructs were highly correlated, and to label each axis. The participant is encouraged to relate each axis to the other axis and explain how do they fit into her [sic] meaning making processes. The process also allows the participant an opportunity to add elements, and to construct them in light of the findings (Stewart et al 1981, 68). The participant can disagree with the factor analysis results. The graphical plots are useful for discussion of why and how might the participant use the elements and constructs to construct meaning and understand the world.

The above stages in the Repertory Grid Method provide a structured interview technique, including quantitative and qualitative representations of the individual's psychological world. In this research, the method was piloted and used to reconstruct how the active, moderate and silent learners used similar and different learning activities (elements) during online and blended learning to make meaning. The illuminating nature of the Repertory Grid Method and the processes involved during this research are explained in the method sections with examples of the tools used and the outcomes achieved. The application of the method is also exemplified in the next chapter that describes the Repertory Grid Analysis for two learners in this research.

3.2.3 Grounded Theory

As stated above the Repertory Grid Method allowed for various check points that also supported a grounded theory approach. This approach involved ongoing comparative analysis during data collection, theoretical sampling, inductive coding and analysis of interviews and other numerical and visual evidence gathered and developed during each interview.

The grounded theory approach was appropriate for this research as it involved investigation into an area of learning that has limited theoretical base. According to Darkenwald (1987, 69) doing grounded theory research in an applied field like online learning would help to "improve professional practice through a better understanding of it". This research aimed to examine knowledge construction processes of learners in online and blended contexts in depth. The grounded theory approach would be useful in generating a theory to integrate diverse elements of online learning practice. The practitioners could use the resulting theory and themes as conceptual tools to guide future practice (Merriam and Simpson 1989, 100). The use of grounded theory approach and the Repertory Grid Method did enable development of themes that offered conceptual insight into online learning. The resulting theory and its implications for online practice are described in chapter seven.

3.3 The pilot study

The advocates of the Repertory Grid Method recommend practice in using the technique to draw out the explicit and deep-seated constructions from another person (Bannister and Fransella 1989; Stewart et al 1981, 67). In order to learn and practice the technique and to test if the process would help answer the research questions, I carried out pilot interviews with two postgraduate learners.

One learner in the pilot study had completed blended version of a Masters course in geographic information science. She identified herself as an active online discussion participant. The second learner had initially dropped out of her postgraduate online course in online tutoring due to compulsory online participation, and had since restarted the course with a different cohort. The second learner identified herself as a silent discussion participant in the first online course, and as a moderate participant in the second course.

The pilot study concluded that the methodology revealed knowledge construction processes for the active and silent-moderate participants. Combined with the grounded theory approach for qualitative analysis of data, the method also surfaced similarities and differences in the participants' learning. The pilot showed the methodology was appropriate for the research questions. It demonstrated the time consuming nature of the method. In order to save time during the interviews, I decided to manage administration issues such as pre-preparing element and personal construct cards, and prepare a ready to fill Repertory Grid before the first interviews. Additional time saving strategies included giving the learners the schedule of the interview in advance, and asking them to think about the learning activities they took part in during their online and blended learning before the interview.

The pilot study also concluded the need to gather additional information about the learners to place their online or blended learning experiences in context. This information would be gathered at the start of each interview using a structured questionnaire completed at the beginning of the interviews with each learner (Appendix II). The questionnaire included the following information:

- Learners online or blended course titles, year of study, department of study

- Learners past learning experiences (online and offline)
- Learners access to IT
- Learners IT skills to use the VLE and other software required during the course
- Learner employment status
- Employer support for learning
- Funding status
- Domestic or personal responsibilities outside the course
- Learners age

The pilot study also led to the design of graphical multi-dimensional representations and metaphoric representations. There were used to deconstruct and confirm with the participants their individual learning processes, as explained in the feedback interview subsection below.

3.4 The Research Study

The following sections describe the different stages of sampling, data collection and data analysis including the application of the Repertory Grid Method and the grounded theory approach in this research.

3.4.1 Sampling criteria

The sampling criteria were based on the assumption that learners are individuals and may engage in different ways. The aim was not to have a large sample to generalise the findings, but to gain a deeper understanding of the diverse construction processes among a small group of learners. A constant, systematic and rigorous comparative analysis would enable the development of theoretical themes. These themes would provide theoretical explanations for how and why individuals from the identified sample population engaged in different activities including online discussions. How these theoretical explanations and research result are applied to other learners would depend on their contexts and personal learning constructs. The future studies could draw on these themes and test them with different or similar population groups (Strauss and Corbin 1998, 267).

The research invited learners from one Higher Education Institute (HEI) in the UK, from nine different online and blended courses based in five different professional disciplines. These courses were chosen because they advocated online discussions as in the popular online learning design (as represented in Figure 2.1 in Chapter Two). The courses also allowed variation and heterogeneity in sample, which was important for the broader explanatory power and precision of the resulting research themes (Cohen et al 2001, 95; Strauss and Corbin 1998, 267). The final sample represented a heterogeneous group of twenty-nine postgraduate and post-registration learners studying on professional online or blended courses at the HEI (Table 4.1, Chapter Four). The following sampling criteria helped to identify a systemised and heterogeneous sample.

Criteria 1 (Who and why): The postgraduate and post-registration learners at one HEI, who had studied online or blended learning courses and used online discussions as part of the learning strategy, were invited to volunteer for the research. The sampling criteria excluded learners from undergraduate online and blended courses, for the reasons explained below.

The recent trends in educational participation reported by the Higher Education Policy Institute (HEPI) supported the criteria for targeting professional postgraduate online and blended learners. The HEPI report commissioned by The Times Higher Education Supplement Newspaper identified a 21% rise in the entrance for postgraduate study in the UK over the past seven years (Sastry 2004). The report listed the chosen HEI among the top three UK universities that have taught the most postgraduate professional students between the years 2002-2003 (Sastry 2004).

The HEPI report (Sastry 2004) identified various reasons for the rise in postgraduate study:

- Availability of part-time study options such as online learning while still at work, particularly for home students.
- The availability of new subjects at postgraduate certificate, diploma and Masters level. (The current research included the new subjects, i.e. the graduate-entry 'blended' learning programme for nurses, the post-graduate

course in online tutoring, the online course in digital entrepreneurship, the Masters in management (future of management module), the Masters in information science, and the Masters in geographical information science).

- Increase in the full-time overseas and European Union (EU) learners at postgraduate level. (The final sample described in Chapter Four, Table 4.1 included home, overseas and EU learners).

This research chose applied subjects that were profession-based and excluded learners from art, humanities and pure science subjects. The reason for this choice was my own desire as a nurse educator to learn about the role of online technologies in enabling theory-practice link. Another reason was the recent policy emphasis that online learning is a flexible option for working professionals with limited time to attend an institution for formal study (DfES 2003, 68). Online learning is repeatedly justified as an important way to enable continuing professional development and lifelong learning among the professional learner groups. This sampling choice could limit the use of research results by the arts, humanities and pure science subjects as discussed in the chapter seven.

The government policy calls for educational technology to be linked to the institutions' development plans for *"a more flexible education system that is responsive to the needs of learners, parents, employers, and the community"* (DfES 2004, 1). Like all other higher education institutions in the UK, the chosen institution had responded to the government agenda. The chosen HEI's investment in a commercially developed Virtual Learning Environment (VLE) provided a password protected online infrastructure to design and tutor formal learning. The specially employed personnel at an E-learning Unit supported this infrastructure.

The research choice for postgraduate learners was justified in the HEPI report findings that identified a percentage increase in the intake of professional subjects. The HEPI report listed the subjects in the left-hand column of Table 3.1, for both part-time and full-time postgraduate learners between 2002-2003 (Sastry 2004). The middle columns in the Table 3.1 indicate the percentage increase per subject in the UK, as identified in the HEPI report (Sastry 2004). The target population for the present research identified corresponding professional courses. The extreme right-

hand (shaded) column in the Table 3.1 lists the actual professional courses in the HEI from which the research sample was drawn.

Table 3.1: Percentage change in numbers of first-year postgraduates between 2002 and 2003 in the subjects identified in the HEPI study (Sastry 2004).
The right-hand column lists the corresponding subjects selected for the current research study

Subject listed in the HEPI report	Total increase %	Full-time increase	Part-time increase	Subjects from one HEI chosen for the current research study
Subjects allied to medicine	96%	41%	122%	Nursing (PG Diploma & post-registration certificate level)
Computer Sciences	81%	103%	36%	Geographic Information Sciences (M level)
Librarianship & Information Sciences	53%	49%	63%	Information Sciences (M level)
Education	38%	21%	59%	E-learning (M level) & Online tutoring (PG Certificate level)
Business & Administrative Studies	36%	68%	17%	Management (M level) & Digital Entrepreneurship (PG Certificate level)

The courses selected for the research were identified through the HEI's E-learning Unit and agreed during individual meetings with the course leaders. These meetings helped to learn about the online and offline strategies employed in the courses, and how online discussions were used to facilitate learning. It was acknowledged that the course design and online discussion board use might vary for online and blended courses. The reason for including blended courses in this research was to increase the sample heterogeneity. It enabled extension of the research enquiry to engagement in blended and online courses. The meetings with the course leaders also helped to negotiate anonymous access to the learners.

Criteria 2 (Where): All research participants (Table 4.1, chapter four) studied at the Higher Education Institution (HEI) in London (UK) between the years 2001 and 2005. The choice of one HEI helped to easily access the participants when they were attending face-to-face workshops. The research ethics approval from one institution also proved to be more time efficient, than having to gain ethical approval and permission to invite learners from additional institutions. However, this may have reduced the heterogeneity of the sample that may be possible by involving participants from different HEIs. The choice of only one institution was pragmatic. It

is acknowledged this may limit the explanation of research results to the structural context of one type of institution.

Criteria 3 (How): The chosen research method required the participants to contribute a total of three to four hours of their time for the two research interviews. It required the participants to play a central role in considering the questions and the emerging data during the interviews. These methodological issues necessitated voluntary participation. The Data Protection Act (1998) guided access to the research participants. The initial call for voluntary participation was sent out to all learners on the selected courses via the course tutors. I did not have access to the participants details until the individuals identified themselves and expressed a wish to participate.

The voluntary participation also meant that the sample selection was dependent on the participants interest in online learning, and was left to chance. The initial request resulted the active discussion participants and tutor-learners studying for online tutoring courses. Additional recruitment techniques were adopted to include learners with external responsibilities, or those less enthusiastic about online discussions. One technique was to send postal invites (Appendix III) via the course administrators. This resulted in identification of one silent participant. The second technique involved face-to-face meetings with learners at course workshops to make a case for wider participation in the research. At these workshops learners were requested if they were interested in the research they could give their contact details and identify whether they regarded themselves as silent, moderate or active online discussion participants. This method proved to be most effective for recruiting participants with different levels of online discussion participation. This method alongside ongoing comparative analysis supported theoretical sampling and allowed to look for participants to reveal similarities and variations in the evolving theoretical concepts (Strauss and Corbin 1998, 202).

Many silent and moderate participants did not regularly access the course discussion boards and may not have volunteered for the research if the invitation was limited to online announcements. This brought forth the realities of sampling for online learning research studies that might employ exclusively online recruitment methods. The reliance on online recruitment may omit large sections of learners.

After the participants volunteered, they were sent further details explaining the purpose of the study, what to expect in the two interviews, and the time required for each interview (Appendix IV). Following further confirmation of their interest, the interviews were conducted at locations suitable to the participants. All participants were offered refreshments during the interview to help them feel comfortable and open to discuss their learning experiences.

3.4.2 The Research Stages

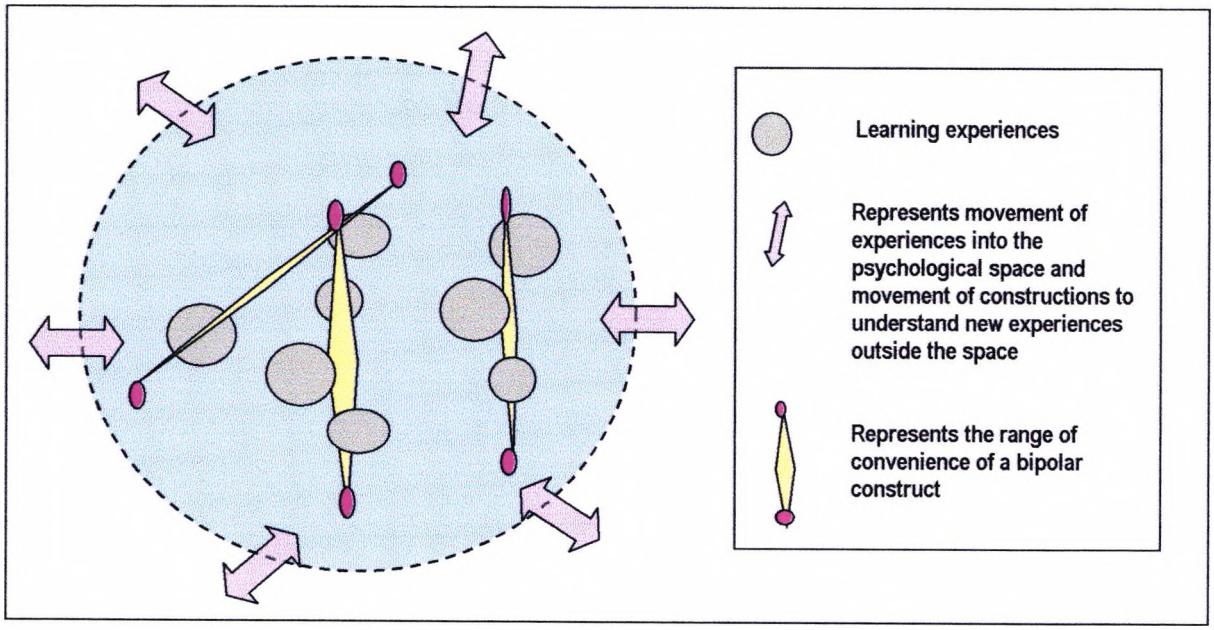
This section refers to the processes before, during and after the Repertory Grid interviews.

3.4.2a The first Interview

Stage 1 Gaining informed consent: At the first interview I explained the research process and gained participant's consent (Appendix V). The Personal Construct Theory (PCT) and the Repertory Grid Method were explained using the Figure 3.2 and the explanation in Box 3.1.

I developed Figure 3.2 during the literature review of the Personal Construct Theory. This Figure alongside the explanation in Box 3.1 helped me to deconstruct the theory, to understand it and explain it in a simplified manner to the research participants. It was important for the participants to have some understanding of the theory and have the opportunity to disagree with the methodology that aimed to explore how they constructed meaning from their online and blended learning activities. The explanation (Box 3.1) and the Figure (3.2) were recalled as the interviews progressed, to help participants get a better understanding of how the theory guided the interview process.

Figure 3.2: Figure used to explain personal construct theory during the first interview with each participant



Box 3.1: Quote of the explanation for the research process (given during the first interview)

"The purpose of this interview is to understand how you engaged in different experiences to help you learn during your online or blended learning course. I am using a theory called Personal Construct Theory by George Kelly to help build this understanding with you.

I will use a diagram to explain the theory (Figure 3.2). Consider a circle represents an imaginary psychological space of a person. The dotted circumference of this circle represents openings that allow experiences to enter one's psychological space, throughout one's lifetime. Arrows pointing inwards into the circle represent entry of these experiences. Smaller circles inside the larger circle represent experiences one has encountered. Circles that are close together represent experiences that are similar as compared to those further apart.

According to Kelly (1970, 35) one makes sense of these experiences by construing them. "A construct is a way in which some things are construed as being alike and yet different from others" (Kelly 1991, 74). The comparison and contrasts between experiences result in bipolar descriptions, which represent one's personal constructs of those experiences. Pink circles in the figure represent the personal constructs. For example, if one has experienced eating ice cream, eating a curry and drinking orange juice, one's personal construct of eating ice cream and drinking juice may be 'felt cool' while eating a curry may be 'felt hot'. The personal constructs like these are interpretation of experiences and help us to develop a structure of how we make sense of the world. In this example, this structure is not produced by the curry or the ice cream, but by the individual encountering them as experiences. Likewise, one's personal experiences of participating in discussions may be differentiated and construed in comparison with other experiences.

Each pair of constructs has a range of convenience (between the two polar descriptions, e.g. 'felt hot' vs. 'felt cool'), represented by yellow lines connecting two poles of a bipolar construct (Figure 3.2). A finite number of new and old experiences may lie at different parts of this range of convenience.

The purpose of this interview is to identify the different experiences (called elements) you as an online (or a blended) course learner may have had. You will then be required to look at three elements at a time to compare and contrast and elicit bipolar personal constructs. The next stage will be require you to rate each element against each pair of personal constructs using a scale of 1-5. This will result in a repertory grid that will be quantitatively analysed to look for similarities and differences between elements and constructs. The highly correlated elements and constructs will be represented as graph axes for the second interview, where you will be asked to discuss why some elements and constructs are similar as compared to others, do they represent a dimension of your learning, what would you call this dimension?"

Stage 2 Understanding the learners' contexts: As stated previously, the questionnaire in Appendix II was used to guide discussion of the participants' background experiences and contexts. I was conscious that my experiences, background knowledge, and broad conceptualisations about online learning might affect my understanding of others' constructions (Kelly 1991, 136). The structured questionnaire at this stage was an opportunity to acknowledge the learners' contexts and enter their learning worlds.

For example, questions about their course details helped to ensure the participants fitted with the sampling criteria. The questions related to IT and previous learning experiences helped to begin identifying issues related to IT access and IT skills in relation to the course requirements. The questions about finance, employment and domestic priorities helped to get an introductory picture of the factors that might affect the time for engagement in learning activities. At this point the participants were encouraged to discuss their level of participation in online discussions and to identify whether they perceived themselves as silent, moderate or active participants in online discussions. The silent, moderate and active labels were subjective, contextualised and based on participants' own perceptions of online participation. They were not determined using an objective scale, as explained in chapter four.

Stage 3 Developing the Repertory Grid

Eliciting elements: The participants were asked to describe and state their learning activities during the online or blended learning courses. The elements or learning activities in this context were more than the observable behaviours. Kelly (1991, 20) argues that if construction processes were mere behaviours then like the behaviourists we would focus on the logical positivist position that *"anything that cannot be identified as behaviour is un-testable and therefore a scientific distraction"*. On the contrary, this research aimed to explore engagement processes beyond the visible participatory behaviours. Thus, the elements could include the different processes of reconstruction and engagement.

Most participants elicited twelve to fifteen elements. This resulted in a range of social and individual learning elements for each participant (Appendix VI). Each element was written as a statement on separate cards labelled E1, E2, E3, and so on.

As the participants listed the elements, they also began to discuss positive and negative feelings related to these elements. Although this was part of the construct elicitation stage, these volunteered conceptualisations were valuable in a methodology that regarded participants not as passive respondents unquestioningly submitting to the researcher's manipulations (Kelly 1991, 129), rather as active construers and meaning makers. The audio-recorded discussions during the element elicitation process added to the qualitative data for further analysis that helped to unravel how the participants used these activities as part of their learning processes to make meaning.

Individuals make meaning from their experiences regardless of whether an interviewer asks the questions or not (Miller and Glassner 2004, 129). Thus the interview process did not regard participants as holders of information to be drawn out, as and when I asked the questions. Alternatively, each interview was an active and interactive social encounter between the participant and myself. It was a site for active construction as the participant re-conceptualised learning experiences, while I was present performing a researcher's role (Holstein and Gubrium 2004, 141).

Eliciting personal constructs: One makes sense of one's experiences by construing them. "*A construct is a way in which some things are construed as being alike and yet different from others*" (Kelly 1991, 74). As described above, the triad method was used to extract personal constructs from the participant's experiences. Three random elements noted on separate cards were placed together, such as E1, E4, and E7 (Figure 3.1). The participant was asked 'out of the three elements are any two alike but different from the third?' All participants promptly indicated the similarities and differences and went on to give reasons for these. Further open and specific questions were used to get additional reasons for similarities and differences.

As the participant described how and why two experiences were similar, a construct was elicited. This was written on the cards labelled PC1a, 2a, 3a... (PC=Personal Construct). This was the emergent pole of the bipolar construct (Kelly 1991, 190). The difference indicated for the third experience was written on another set of cards labelled PC1b, 2b, 3b..., called the implicit construct pole (Kelly 1991, 190). For

example, two (out of three) experiences were alike because they were 'good', in contrast with the third experience that was 'bad'. Then personal construct identified for the emergent construct pole PC1a was 'good' and implicit construct pole PC1b was 'bad'.

Further questions included: are there additional similarities between the experiences seen as alike? Why is 'good' important in learning? Is a 'bad' experience useful? Why and how? This process of questioning elicited further construct pairs that were written on the successive cards labelled PC2a - PC2b, PC3a – PC3b, and so on. I was aware that too many 'why' questions could be frustrating and reminded the participants to chose when they did not want to answer. On the contrary, the participants found the gradual and deeper questioning helpful to reflect on why they acted in certain ways rather than others.

> *"I think I can say that this methodology is fantastic. You are asking me to think about things in a way that I haven't thought about before. That is good." (Dan Int 1)*

When the participant's constructs from the first triad were exhausted, the participant was asked to consider another combination of three elements. Again they were asked to look for similarities between any two elements and a contrast with the third. This process was repeated until every element was included in at least one triad, and until the participant felt she had discussed most personal constructs affecting her learning in the online context. The participants elicited between twelve to nineteen personal construct pairs (Appendix VII lists the personal construct pairs elicited by each participant). The proceeding chapters report on the analysis results for the elements and personal constructs elicited by active, moderate and silent participants.

During the interview I was open to whatever the participants shared. I listened attentively and interacted with what they said about their experiences. The initial constructs were taken at face value. As the interview moved along and raised additional, interrelated and independent learning issues, it allowed for me to engage in further questioning to confirm or disregard a series of successive approximate explanations about the participant's learning experiences and the related constructs. A conversational approach was used to encourage discussions about the constructs and

the learning experiences not considered in the triad. This led to the elicitation of additional constructs that could be applicable to a wider range of experiences (Pope and Keen 1981, 44). This non-linear thinking approach also allowed the participant and myself to go back and forth between issues and helped to move towards a deeper construction. The Repertory Grid process also added personal constructs to the learners' frame of reference (Kelly 1991, 133). The social process for construction of the participants' constructs, and how I conceptualised these constructs through active dialogue with the participants, were important ways to get the complete interview data (Holstein and Gubrium 2004, 142).

The above interview approach of successive approximations provided repeated opportunities to clarify the terms used by the participants, and to understand their outlook when they used different words and descriptions. However, possibilities of misinterpretations of how words were being used as constructs and their meanings and applications still remained (Kelly 1991, 189). The rating method helped to overcome some of the limitations of verbalising constructs, assuming meanings and misinterpreting ideas.

The Rating Method: This research chose the more popular rating method that uses a numerical scale of one to five. Five cards labelled one to five were placed in sequence between the elicited personal construct pair. The participant was then asked to use the 1-5 scale to position the elicited elements in relation to the emergent and implicit construct poles. The rating method had advantages over the aforementioned ranking method. It was easy to explain and gave the participant freedom to choose any of the five positions between the construct poles for any number of elements (Beail 1985, 8). It also allowed greater discrimination between elements as compared to Kelly's dichotomous method.

The one-to-five scale discrimination encouraged the participant to think about where on the scale to best locate each element in relation to each construct pair. As the participant identified the position of each element in relation to the construct pair using the given scale, they were encouraged to discuss the position (Pope and Keen 1981, 47). The process allowed the participant to verbalise what they were thinking during the rating process. Additional questions helped to clarify the participant's

reasons for placing the elements at certain positions and also surfaced my assumptions about their learning experiences. As stated before this process helped to reveal how the participants rationalised and made choices. It helped to record their justification for rating and construction of each element.

The method also had some limitations. For example, using a 1 to 5 scale the participant might rate two very different elements as 4, for the same construct pair. Thus active questioning during grid elicitation was important to surface whether the participant construed these experiences similarly and why (Pope and Keen 1981, 106). Pope and Keen (1981, 46) state that some respondents may think of the Repertory Grid scaling as a test of what they should think. The participants were reminded that this was not a test and there were no correct answers. They were free to change the ratings they assigned at any point.

During the rating process, my role was to listen, watch and record the position of each element in relation to each construct pair in a grid, shown in Table 3.2. In this table, the columns represented the participant's elements and the rows represented their personal construct pairs. The Grid helped to express the relationships between the participant's personal constructs and elements in numerical terms. The final Grid reflected the participant's conceptual structure where a numerical rating scale helped to define links between her [sic] personal construct pairs and learning experience (Cohen et al 2001, 342).

The first interview was fully transcribed and used to identify for gaps and assumptions about the participants' constructions. It was used to prepare questions for the feedback interview. The factor analysis of the completed grid explained below was also used in the feedback interview.

3.4.2 b Factor Analysis

The factor analysis of the Repertory Grid helped to identify correlations between elements and constructs. The results gave correlation values and resultant factors. The resultant factors grouped the elements and constructs that were rated similarly, and were construed similarly by the participant.

Table 3.2 Grid used to record the scaled relationships between personal constructs pairs and the experiences (elements) listed by the learner

Emergent Pole Construct	E 1	E 2	E 3	E 4	E 5	E 6	E 7	E 8	E 9	E 10	E 11	E 12	E 13	Implicit Pole Construct
PC1a														PC1b
PC2a														PC2b
PC3a														PC3b
PC4a														PC4b
PC5a														PC5b
PC6a														PC6b
PC7a														PC7b
PC8a														PC8b
PC9a														PC9b
PC10a														PC10b
PC11a														PC11b
PC12a														PC12b

It became apparent that full program versions developed specifically for grid factor analysis were not easily available during the year of the research analysis. Some programs were too expensive, while others were being upgraded at the time of data collection (Shaw and Gaines 2004). The final decision was to use the SPSS (Statistical Package for Social Sciences) for Windows version 11.0 package, easily accessible at my University.

The Repertory Grid for each participant was entered into SPSS to calculate correlations coefficients and to reveal high correlations between elements and between personal constructs. An example of the correlation results is shown in Table 3.3.

Table 3.3 Example of the correlation coefficients between each element (i.e. for data in every column) extracted after entering Repertory Grid Matrix into SPSS and using the factor analysis function.

Correlation Matrix[a]

		VAR00001	VAR00002	VAR00003	VAR00004	VAR00005	VAR00006	VAR00007	VAR00008	VAR00009	VAR00010
Correlation	VAR00001	1.000	-.803	1.000	-.919	1.000	-.855	-.869	-.931	.767	.078
	VAR00002	-.803	1.000	-.803	.882	-.803	.612	.634	.748	-.584	.025
	VAR00003	1.000	-.803	1.000	-.919	1.000	-.855	-.869	-.931	.767	.078
	VAR00004	-.919	.882	-.919	1.000	-.919	.694	.712	.828	-.691	.027
	VAR00005	1.000	-.803	1.000	-.919	1.000	-.855	-.869	-.931	.767	.078
	VAR00006	-.855	.612	-.855	.694	-.855	1.000	.991	.798	-.906	-.314
	VAR00007	-.869	.634	-.869	.712	-.869	.991	1.000	.819	-.908	-.303
	VAR00008	-.931	.748	-.931	.828	-.931	.798	.819	1.000	-.654	.058
	VAR00009	.767	-.584	.767	-.691	.767	-.906	-.908	-.654	1.000	.330
	VAR00010	.078	.025	.078	.027	.078	-.314	-.303	.058	.330	1.000

[a] This matrix is not positive definite.

SPSS was also used to conduct a Principal Component Analysis (PCA). PCA is a type of factor analysis that calculates the principal common factors between more than two variables (i.e. the elements or constructs in this research). Table 3.4 is an example of the PCA results with rotated variables.

Table 3.4 Example of the total percentage of variances extracted from the correlation coefficient values of 10 elements in SPSS using the Principle Component Analysis function in the Factor Analysis program.

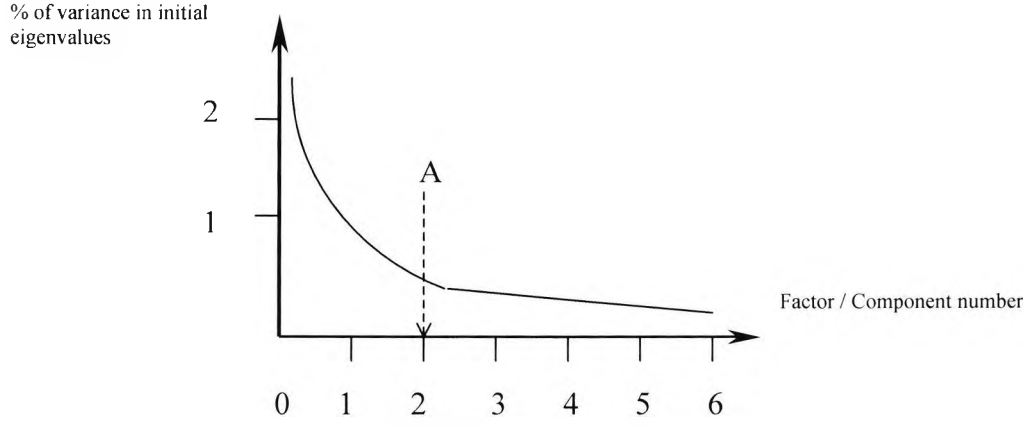
Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.687	76.871	76.871	7.687	76.871	76.871	7.267	72.670	72.670
2	1.321	13.213	90.084	1.321	13.213	90.084	1.741	17.414	90.084
3	.470	4.700	94.784						
4	.278	2.782	97.567						
5	.150	1.497	99.064						
6	.054	.542	99.606						
7	.032	.319	99.925						
8	.008	.075	100.000						
9	.000	.000	100.000						
10	.000	.000	100.000						

Extraction Method: Principal Component Analysis.

The 'Scree test' (Child 1990, 38) was used to determine the number of factors or principal components to be used in further analysis. The scree plot function in SPSS plotted a graph of percentage of variance (eigenvalues) against the number of factors or components, in the order of extraction (Child 1990, 38). For each participant, the plot showed a curve followed by a straight line (Figure 3.3). Using Cattell's method the point (A in Figure 3.3) at which the curve straightened into a line was taken as the maximum number of factors or components to be extracted and used for further analysis in the feedback interview (Child 1990, 38).

Figure 3.3 The Scree Plot for 10 factors
The example shows the first two factors with highest loading to be considered for further analysis



The highest loading factors are commonly referred to as the principal components. Table 3.5 shows an example of coefficients values for each variable for the two principal components identified in a scree plot.

Table 3.5 Example of the coefficient values of the variables assigned to the principle components (obtained through factor analysis where rotated variances were calculated and a scree plot was carried out to extract factors with highest loadings)

Rotated Component Matrix[a]

	Component	
	1	2
VAR00001	-.975	.157
VAR00002	.867	.060
VAR00003	-.975	.157
VAR00004	.944	.015
VAR00005	-.975	.157
VAR00006	.809	-.521
VAR00007	.827	-.503
VAR00008	.943	-.033
VAR00009	-.734	.549
VAR00010	.091	.915

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

In the above example, there were ten variables. It followed (10-1=9) degrees of freedom for each of the variable. The degrees of freedom are the *"...freedom with which the researcher is able to assign values to each cell"* (Cohen et al 2001, 367). Using the significance levels in Pearson Product Moment Table (Child 1990, 109), nine degrees of freedom meant that the variables to be considered for further analysis from Table 3.5 would be the ones with the correlation coefficient value equal to or more than 0.755. The correlation coefficient values are included irrespective of whether they are positive or negative. Therefore in Table 3.5 variables 1, 2, 3, 4, 5, 6, 7, and 8 have correlation coefficients greater than 0.755, and define the 1st principal component. In the 2nd component only one variable, i.e. 10 has correlation coefficient greater than 0.755. In qualitative terms this was taken to mean that there could be some relationship between the variables 1 to 8, while the variable 10 may have a different significance for the participant's knowledge construction.

Factor analysis is a quantitative test that extracts statistical relationships. The results of the analysis only relate to the numerical ratings in the grid. There are obvious limitations in using numbers and statistics to understand complex human concepts (Child 1990, 8). The correlation coefficients and factors for elements and constructs

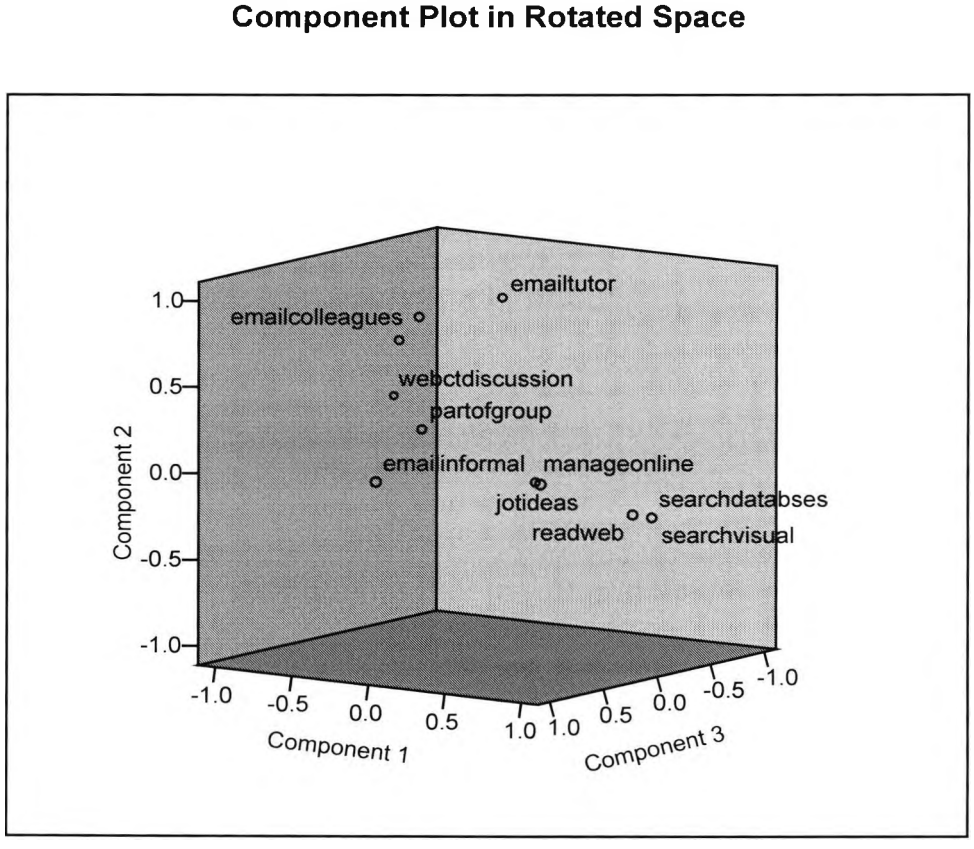
alone give an incomplete analysis of how the participants view the world. Therefore, the qualitative data during the feedback interview was crucial to understand and to involve learners in interpreting the factor analysis and correlation results. The variation in the possible interpretations of the rating scale by different participants also made it crucial not to take the grid factor analysis results at face value. Thus, the feedback interviews were essential to interpret the quantitative data with the participants and build a lucid account of their learning worlds.

3.4.2 c The feedback interview

In order to successfully interpret the factor analysis results the participants needed to feel a sense of ownership of the data. The complex statistical calculations can be bewildering for individuals with limited statistical know-how. According to Kelly (1991) the resultant factors represent the participant's metaphoric psychological dimensions in their psychological space. As explained previously, it is common for the Repertory Grid researchers to use the principal component plot from the factor analysis calculations. In the old SPSS packages this graph output included two main components as the *x* and *y* axis that represented the main construct dimensions, with the other constructs and elements plotted around these axis (Stewart et al 1981, 62). These plots would only reveal two principal components at a time, even though some participants' factor analyses might reveal three, four or even five components. This would sacrifice the *"detail of unknown importance for the sake of easy visual inspection"* (Stewart et al 1981, 64).

The recent SPSS packages produce a similar plot but with more than two components. They are three-dimensional representations of principal components or main factors, as shown in Figure 3.4. This principal component output plot (Figure 3.4) may be confusing and difficult to interpret. It is also limited to representing not more than three principal components at a time. There was a need for a much clearer visual representation where learners could easily get hold of the analysis results, without loosing the detail for visual inspection.

Figure 3.4 An example of the Principal Component Plot Output from the factor analysis results in SPSS



In this research I developed a more accessible way of interpreting factor analysis results through visualisation of data in multi-dimensional graphs. These graphical representations used data from the principal component analysis solution and showed each principal component or factor as a separate axis. The different colours and thickness for each axis enhanced graphical visualisation.

The first graph for every participant represented the element factors. The second graph represented the constructs factors. The third graph was same as second graph but also included approximate plots of the participant's elements using ratings directly from the Repertory Grid. Chapter four shows graphical representations for two research participants (Graphs 4.1a, 4.2a, 4.3, chapter four). It must be emphasised these graphs were not statistically accurate Cartesian axes. The axes were representations of the principal components elicited from the factor analysis calculations, from the participant's Repertory Grid. They were used for preliminary

qualitative analysis of the principal components involving each participant, where they labelled the described each axes as a learning dimension.

The *x*-axis of every graph represented the first principal component. It was assigned with the elements or constructs showing the highest loadings for that factor (as calculated and reported in Table 3.5 for each participant). The *y*-axis represented the second factor assigned with the elements or constructs showing the highest loadings for that factor. Further factors (from the principal component solution) were represented in the same way, thus developing multidimensional graphical representations for the elements and constructs, respectively. In the graphs, the negative loadings were shown at the opposite end of the axis for the respective factor.

The feedback interviews included explanations of how the Repertory Grid ratings and their factor analyses led to the development of the graphical representations. These graphical visual representations were a new addition to the Repertory Grid Method developed during this research. Their effectiveness was evident when the participants successfully used them to interpret the factor analysis results and to demonstrate their knowledge construction processes.

All participants found it easy to comprehend the graphical representations, as they visually tracked the correlated elements or constructs noted alongside each axis (El Saddik 2001, 12). This visualisation technique was not limited to the participant just seeing the information and agreeing or disagreeing with it. It also supported interactivity with the data and was an important tool for the participants to feel actively involved in discussion. The participants were free to disagree with the graphical representations and discuss their reasons for disagreement.

The graphs supported active conversational analysis as the participant examined each axis and considered why some elements (and constructs) were closely correlated. They considered the question: Was there anything common about the correlated elements (and constructs) in the way they might influence their knowledge construction processes? If so, how? They were asked to consider if the correlations between the elements (and constructs) represented a key dimension for their learning? If so, what name or label would they use to describe this dimension?

As the participants set out to conceptualise and label the graphical dimensions, they used the graph for element factors (in the first graph) to describe how they used the different learning activities to construct meaning. They also explained why the different sets of elements were closely correlated and how each axis/dimension explained how they made meaning. The second graph (the multi-dimensional visualisation of the construct factors) helped to extend the explanation why the participants engaged more in some activities than others. They also explained how the different element and construct factors could be linked and explained together to reveal how they prefer to learn. The third graph was used to sum up which learning activities were more effective for their knowledge construction and why.

This re-conceptualisation of elements and personal constructs helped to clarify, confirm and challenge correlation results. It helped to deduce qualitative relationships between them. It was interesting to note that at this point the participants related and extended the emerging concepts to their daily life outside the formal learning space, and suggested that this was how they thought or construed meaning in general.

I used another visual method that may be added to the Repertory Grid Methodology. These were the metaphorical visual representations of learning developed near the end of the feedback interview (Figures 4.1 and 4.2, chapter four). The learners were supported in constructing these in diagrammatic forms to confirm what I understood about their learning was an accurate or a near accurate representation of what they did and how they used the elements to make meaning. The metaphorical representations of the participants' psychological spaces included the main processes and construct influences during knowledge construction. These were close to what Kelly calls a representational model of the world each person erects to chart a course of behaviour (Pope and Keen 1981, 26). During the feedback interview, the participants regularly noted that the Repertory Grid Method did really reveal how they thought and made sense of things. These instances of confirmation added to the validity of the emerging data.

3.4.3 Data Analysis

The two audio taped interviews were transcribed in full for further qualitative analysis. The Repertory Grids and factor analysis SPSS output data were also used to identify links between the emerging results. The graphical and metaphorical representations were used to analyse and compare how individual participants constructed meaning, and how they used and construed online discussions in the process.

The qualitative analysis computer software ATLAS.ti, version 5.0 was used to code and analyse qualitative data including the interview transcriptions, data from the opening questionnaires, the lists of elements and constructs, and the labels or descriptions for learning dimensions in the graphical representations. The coding was based on the Grounded Theory principles (Strauss and Corbin 1998, 103). A code given to a sentence or a section or a phrase described a learning phenomenon. The process helped to classify and compare similar events, constructs and descriptions. Strauss and Corbin (1998, 103) call this qualitative analysis process conceptualising or open coding. The qualitative analysis software made it easy to revisit and link the contextual data. Revisiting the data helped to check that reconstruction and final synthesis represented the participants' voices and contexts.

The qualitative analysis software was also used to record memos and develop conceptual and visible links between the textual data, graphical data, codes and memos. The visible links and re-examination of the memos in light of the code-related outputs helped to rigorously question the data through different perspectives. When I found I was arriving at the same results with different data and analysis formats, I was more confident of the validity of the emerging findings. The triangulation of multiple data formats helped to demonstrate individual variations that might be missed if only one data format was considered (Strauss and Corbin 1998, 44).

3.5 Objectivity and Sensitivity: Validity

The research wanted to ensure the participants' subjectivity. This required objectivity and impartiality during interpretations of participants' experiences (Strauss and Corbin 1998, 42). This awareness did not automatically exclude my subjectivity and influence on the emerging data. The steps to minimise my subjectivity included a conscious effort not to make assumptions about the implicit constructs. I consciously used my assumptions to guide further questioning and deconstruction, during the interview and analysis. This approach helped to examine subtle differences between the participants' engagement processes. It also encouraged me to remain alert and open-minded during the interview and analysis sessions. The ongoing analysis to identify differences between the participants' perspectives during similar learning events also helped to challenge my assumptions and helped to gain a level of objectivity (Strauss and Corbin 1998, 44).

There was an issue with validity in using the one to five rating scale and assuming all participants would use it in the same way. There is limited research on how individuals respond to and use rating scales (Yorke 1985, 392). Also the validity of the elements may be questioned if the participants were orientated towards particular properties of the elements when rating them against different the construct pairs (Yorke 1985, 393). For example, a participant may rate two elements as engaging but for very different reasons. This would mean the scale is used differently when rating different elements. It was acknowledged that the rating scale was not quasi-physical tool, like those used in psychological tests. In this research the emphasis was on the qualitative data that these tools helped to collect. The participants were encouraged to verbalise their reasoning and thought processes during the rating process. The rating scale was used despite the unsure validity because the rating process and the resulting grid analysis helped to yield valuable qualitative data. This qualitative data was a reconstruction of the thought processes the participants used to make choices and decisions during online and blended learning.

For the data and results to be valid in qualitative research, it is also important for the researcher to be sensitive to what may be emerging in the data. To be sensitive is to be aware of the subtle differences and to identify connections between concepts (Strauss

and Corbin 1998, 42). The feedback interview helped with this. In addition listening to the interview tapes during coding, reading and re-reading interview transcripts, interpreting data, and representing connections in different ways in ATLAS.ti, also helped to look for different meanings in the data. This added sensitivity and enabled a better understanding of the emerging concepts.

The Repertory Grid Matrix and the factor analysis were objective methods that gave concrete values as outputs. However, the constructivist paradigm driving this research did not assume that these methods lead to absolute objective truths. If the numerical outputs were used as definite ways of pigeonholing the participants into neat categories, then the results would be invalid on statistical and philosophical grounds (Pope and Keen 1981, 55). Yet the factor analysis results were valuable for the feedback interview and helped to examine the participants' constructs in depth. The graphical representations were also useful to hypothesis potential learning situations with the participants, hence involving them in the initial qualitative analysis. The final metaphorical representations developed to confirm with the participants what I was interpreting was indeed how they viewed their knowledge construction processes, aided the sensitivity and validity of the results (Strauss and Corbin 1998, 45).

3.6 Ethical considerations

The methodology described above is only viable if the involved researcher respects the participants and their surroundings. The formal permission procedure at the learning institution was an important opportunity to consider the moral issues for participant access. The process helped to demonstrate that the methodology was participant-centred and would provide learners with an opportunity to reflect and reconstruct how they constructed meaning. Thus it would be a useful process for the participants.

In a methodology that required participants to share their personal ways of knowing, ethical principles of their right to freedom and self-determination were central. This was established through voluntarism and informed consent (Cohen et al 2001, 51). The participants were informed they were free to discontinue or stop the interview at

any moment without prejudice. They were assured that all discussions would be kept safe, confidential and anonymous. They were informed that their discussions and quotes might be used to report results in the academic publications and conference presentations. The participants' confidentiality was maintained and pseudonyms were used to refer to the participants in further reporting.

Throughout data collection I presented myself not as an authority or superior to the participants but as an equal. I strived to maintain a non-judgmental attitude. The purpose was not to define a standard of learning or accept some forms of engagement over others. This mind-set was important if the active, silent or moderate participants were to feel free to express their different learning preferences. My personal experiences both as a silent and active participant in online course discussions, helped to present a genuine sense of openness toward the different perspectives in online participation.

The interview transcripts, and the graphical and metaphorical representations were emailed to the respective participants to confirm if these were actual representations of what they had shared during the interviews. They were also asked to indicate if they wanted to exclude any quotes from the final research reports and conferences. None of the participants expressed any concerns about the data. All stated they found the methodology interesting and revealing. Some also found it a useful reflective process, while others stated that the methods used confirmed what they already knew about their learning.

3.7 Strengths, assumptions and limitations

The Personal Construct Theory and the Repertory Grid Method are well-tested methods used for educational research exploring the learners' and teachers' constructs. In this research the combined use of qualitative and quantitative approaches encouraged me to think reflexively about the research aims and the underlying philosophical paradigm. Using the two approaches helped me to learn about two very different perspectives and how they can be combined to strengthen empirical research.

This qualitative-to-quantitative-to-qualitative switch of methodologies guided by the Repertory Grid Method had important strengths. Firstly, it actively involved participants throughout the data collection, and in the initial analysis of results. Secondly, it enabled ongoing interaction with the participants to confirm their learning constructions and to ensure a higher degree of empirical rigour. Thirdly, the different representations of the data enabled me to remain as true as possible to the chosen paradigm, the subject matter, and the participants.

The strength of the Repertory Grid Method was that it provided a framework that embraces diverse perspectives (Pope and Keen 1981, 118). According to constructivism alternativism philosophy, the personal constructs are not permanent representations and may change over time as one encounters new experiences (Kelly 1991). Those looking for absolute answers about how individuals construct meaning in online and blended courses may find flaws with this outlook. This research methodology challenged the absolutist learning designs that assume all learners engage in a defined and logical manner. It also helped to challenge the popular online pedagogy that regards participation in online discussion as the main evidence for learning engagement.

The Method assumption that the complex personal constructs and contextual experiences can be represented numerically may be a limitation of the method. The numerical representation only produces a simplified picture of what exists in reality. This simplified grid may be just what a researcher needs to further explore the complex workings of an individual's mind. It must be noted that in this research the Grids did not represent the truth but was one representation of what might exist. The Grid and the factor analysis results were merely a means of communication for further conversational analysis (Pope and Keen 1981, 103).

Another limitation of the Grid Method was the time it took to complete each interview and the requirement for the participants to attend two interviews. The time commitment may have limited who volunteered for the research. Pope and Keen (1981, 102) suggest computerised Repertory Grid elicitation might be a time saving strategy. This was dismissed for two reasons. Firstly, it would require all participants

to have computer access and skills to download the required program. They would also need to have an understanding of the terms 'element', 'construct', and 'Repertory Grid'. Secondly, the absence of conversation would limit the opportunities to explore assumptions and confirm conceptual understanding of personal constructs.

The graphical representations used in the feedback interview could also be limiting due to the very contention that the researcher and the participant might comprehend them according to their personal models of the world. In this study the metaphorical representations developed during the feedback interviews helped to address this limitation.

3.8 Summary

This chapter has described in detail the paradigm, the theory and the method used to understand how learners construct meaning during online or blended learning courses. It has shown why constructivism was favoured over the objectivist paradigm to understand differences between knowledge construction for active, moderate and silent learners. The discussion has justified why Kelly's (1991) Personal Construct Theory and the Repertory Grid Method were appropriate for the proposed questions and the chosen research paradigm. A discussion of the Repertory Grid Method has helped to demonstrate how the different stages in the method were used to involve the participants in the data collection and the initial analysis stages. The discussion has also identified the processes and the tools chosen for data analysis and their strengths and limitations.

The discussion explained the use of the visual aids that helped to enhance the Repertory Grid Method. This included the multi-dimensional graphical representations of element and construct factors that were used to interpret the factor analysis results. These multidimensional graphs helped the participants to gain control of the data and to view the factors as if they were learning dimensions in their psychological space, as described by Kelly (1991). The second visual addition to the Repertory Grid Method was the metaphorical diagrammatic representation developed at the feedback interviews. As identified in this chapter these representations helped

to confirm my constructions of the participants' learning. The metaphorical representations added to the objectivity of the data and helped to check its validity with each participant. These visual additions are new to the Repertory Grid Method and may be exploited by future researchers using the technique.

The next chapter builds on the understanding of the research methodology. It introduces the learners who took part in the study, and gives the Repertory Grid Analysis results for two learners (one silent and one active), who represented differences and similarities in knowledge construction.

Chapter 4

Research Participants & Repertory Grid Analysis

The aim of this chapter is to report on two aspects of the research results. The first part of the chapter introduces the diverse group of learners who took part in the research. The second part describes the Repertory Grid analysis for one active and one silent participant, and examines the differences and similarities in their knowledge construction processes.

The discussion begins with an introduction of the twenty-nine research participants. The initial analysis of the questionnaires (Appendix II) results showed these professional learners' desire to control their learning processes. The discussion also reveals the participants' perceptions of whether they saw themselves as silent, moderate or active in online discussions. It explains how and why these labels were used during the research analysis.

A Repertory Grid was elicited and quantitatively analysed for each of the twenty-nine participants. The qualitative analysis of the elicitation processes and the feedback interviews using ATLAS.ti gave an insight into each participant's learning processes during their online or blended courses. It is to be noted that twenty-eight out of the twenty-nine participants participated in the feedback interview[1].

The second part of the discussion uses the Repertory Grid analysis to unravel how two research participants' engaged and construed meaning. Each Repertory Grid analysis begins with an introduction to the participants' contexts, an demonstration of the data developed during the first interview, a description of the factor analysis for each participant, followed by a descriptive analysis of the labels given to describe the factors during the feedback interview.

[1] One of the twenty-nine participants did not respond to the numerous messages requesting participation in the feedback interview. She did not participate in the second stage that involved labelling of element and construct components.

The final part of the chapter analyses the similarities and differences in the ways of knowing and knowledge construction processes for one active and one silent. This result of this analysis cannot be generalised to all active and silent participants. Nevertheless, they represent individual differences and similarities between the two participants. Chapter five considers analysis results for the learning activities (elements), the personal constructs and knowledge construction processes reconstructed for all the twenty-nine participants. It reports on the differences and similarities between the twenty-nine active, moderate and silent learners, and resurfaces the importance of personal control in different ways of knowing.

4.1 The research participants and characteristics

According to the criteria identified in the previous chapter, the initial aim was to invite 30 participants from a variety of professional postgraduate and post-registration online and blended courses at one HEI. After numerous invitations the final sample included twenty-nine learners from eight online or blended courses that used online discussions. The heterogeneous characteristics of the participants are summarised in Table 4.1. The final sample was representative of the current postgraduate learner population indicated in the recent HEPI report (Sastry 2004). The final participants were males (10), females (19), part-time students (15), full-time students (14), those studying online (16) or blended (13) postgraduate courses, in full-time employment (10), part-time employment (5), self-employment (4) or full-time students (10). The sample also included home (20) and overseas (9) learners, with varying fee status. The ages of learners ranged from mid-20's to mid-50's (25 to 59 years), with the majority in 30's and 40's.

Table 4.1: Heterogeneous characteristics of the final participant group

Course Subjects	Online/ Blended Mode	No. of Males/ Females	Overseas & Home students*	In PT/ FT Study	Who pays the fees? Learner (L) Employer (E) Bursary (B)	Employment during course PT/ FT/ Self-employed/ Unemployed/ Student
Nursing (PG Diploma)	Blended	M=0 F=4	Overseas=0 Home=4	PT=0 FT=4	B=4	Student=4
Nursing (Post-registration Certificate level)	Online (*with* 3-day workshops)	M=0 F=3	Overseas=1 Home=2**	FT=1 PT=2	L=1 E=2[I]	PT paid clinical placement=1 FT employed=2
Geographic Information Sciences (M level)	Blended Online (*without* workshops)	M=4 F=2	Overseas=3*** Home=3	FT=4 PT=2	L=6[II]	Student=2 FT employed=2 PT employed=2
Information Sciences (M level)	Blended	M=0 F=2	Overseas=0 Home=2	PT=0 FT=2	L=2	PT employed=2
E-learning module (M level)	Online (*with* workshops)	M=0 F=3	Overseas=0 Home=3	FT=0 PT=3	L=2 E=1	FT employed=1 Self-employed=2
Online tutoring (PG Certificate level)	Online (*with* workshops)	M=3 F=2	Overseas=2** Home=3	PT=5 FT=0	L=2 E=3[I]	FT employed=4 Self-employed=1
Business Management (M level)	Blended	M=1 F=2	Overseas=3 Home=0	PT=0 FT=3	L=3[II]	Student=3
Digital Entrepreneurship (PG Certificate level)	Online (*with* workshops)	M=2 F=1	Overseas=0 Home=3	PT=3 FT=0	L=3	FT employed=1 Student=1 Self-employed=1
Total number of course subjects represented in the study = 8	Total number of: Online courses (*with* workshops) = 4 Online courses (*without* workshops) = 1 Blended courses = 4	Total number of Males = 10 Females = 19	Total number of Overseas = 9 Home = 20	Total number of PT learners =15 FT learners =14	Total number of Home paying=13 Overseas paying=6 On bursary =4 Employer support=6	Total number in FT employment = 10 PT employment = 5 Self employed = 4 Student = 10

M = Masters level; PG = Post-graduate; PT = Part Time; FT = Full Time

*See Glossary for definitions of Overseas and Home students

**These learners trained overseas. At the time of the study they were working full time in the UK

***One of these learners is an overseas student and is based in Europe studying at a distance. Other overseas students in this course are based in UK during the time of study

[I] Overseas learner fees was paid by the NHS employer

[II] Three overseas learners paid more than double fees in contrast with their UK counterparts

Three of the participants were mature single mothers. The two of these learners had been in full-time employment and had taken part in ongoing professional development. The third single mother had completed her bachelors in the recent past, since her children had left home for higher education. The two other female participants had family responsibilities for dependent adults and also held full-time jobs during their online courses. One male participant described himself a full-time student and had parental responsibilities for his school-going son, while his wife held a full-time job. One participant was employed full-time and an expectant father. Only one participant reported that her studies interfered with her domestic responsibilities.

All other participants were either single or were in relationships but with no additional responsibilities on the domestic front. It is possible that the requirement for two lengthy interviews the learners who volunteered for this research did not have domestic commitments, which may takes precedence over other personal and professional goals.

Apart from the limited studies reviewed in the literature review that suggest traditional learners may be benefiting more from online learning as compared to non-traditional learners, there is limited national or regional data thus far to indicate who is attracted to online and blended courses in higher education. If the above sample represents the reality then it is questionable if the current online and blended professional, postgraduate courses attract learners who can give greater commitment of time to the course and do not have external responsibilities. The research sample was voluntary and too small to make any such generalisations about who participates in online and blended courses, but it may be useful for future research studies to consider this as an area for potential enquiry.

It was also interesting to note that twenty-eight of the twenty-nine participants had completed bachelors' degrees, one or two masters' degrees or doctorate programmes before joining the present online or blended courses. All participants except one had held professional positions at work. The uniformity in the higher level of learning and professional experience in this small-scale study raises further questions about who is attracted to the postgraduate online and blended courses. If this uniformity exists in other professional online and blended courses, is e-learning failing to open and widen

access to the non-traditional learners? This question is not explored in the current analysis because it lies beyond the scope of the current study, but is recommended for future research.

The research sample included full-time learners from the blended courses, including the postgraduate (PG) diploma in nursing (graduate entry programme), Masters in geographic information sciences (GIS), and Masters in business management. These blended courses had regular (two to three times per week) face-to-face meetings, seminars and lectures. The full-time learners were expected to use the online discussion boards for some pre-defined tasks and as a communication tool for social learning. The PG diploma in nursing learners also shared the discussion board with the PG medical students from a neighboring medical school. The aim was to encourage discourse and better understanding of the interdisciplinary issues in healthcare. The GIS full-time learners shared access to the same online discussion boards as their part-time online counterparts who were in full-time employment. Unlike the blended group, the online GIS learners did not attend the regular face-to-face meetings and were enrolled on the online version of the course. This shared access to the discussion facility aimed to provide opportunities for the full-time blended learners and part-time online learners to benefit from each other's learning and work experiences. The business management learners were full-time blended learners and used the online discussion board for required tasks and as an additional communication facility when not in class. The online learners on other online courses in Table 4.1 were studying part-time and used the online discussions for required and voluntary discussions and collaborative tasks.

All except two of the learners on part-time online courses listed in Table 4.1 were in full-time employment. One mature digital entrepreneurship participant described himself as a full-time student on a part-time course. One overseas post-registration nursing course participants was enrolled on the full-time version of the course, and was also required to participate in regular and organised clinical practice as part of the course.

The part-time learners on online courses were required and expected to check the discussion board regularly, to share their professional experiences and to take part in

collaborative and individual tasks pre-defined in the course design. According to the course information shared by the participants, online discussion participation was emphasised more for the part-time online learners as compared to full-time blended learners, for the same course.

> *"So if you were a purely online student, you would be required to give online feedback week by week on the lecture material. Lecturer would then give you feedback on your feedback. So it wasn't always assessed but you were expected to do it."(Jon Int 1)*

The sampling criteria, the research, my context, and the course requirements undoubtedly affected how participants reconstructed their engagement in learning. The following section examines one aspect of the research sample, the maturity of the professional postgraduate learners that surfaced as an important influence for their control over the learning process.

4.2 Learning for mature postgraduate learners

The analysis extracted the learners' personal information, contexts and motivations in learning. The participants at both ends of the 20's and 50's age group asserted their personal desire and professional interests as adult learners to join the respective courses. All the participants identified their reason for postgraduate learning was different from their first degrees. Their personal aspiration was more important to learning now, than during their undergraduate courses that they completed because it was expected of them.

The participants stated that as postgraduate experienced adults they now had a greater awareness and confidence in self-selecting whether and when to participate in individual or social learning activities, such as online discussions. As mature adult learners on online and blended courses, these postgraduate participants were also in the process of construing new ways of knowing and redefining their learning styles. They expressed a greater desire for control over their learning processes. They wanted to construct their personal learning goals more than they did as undergraduates. However many felt out of control while they tried to fit in with the online learning requirements. The following exemplars from the data confirm their desire to feel in

control as adult learners. The reader may refer to Table 4.2 in the next section to become more familiar with the participants pseudonyms and the active, moderate and silent labels used in these exemplars.

The two of the experienced part-time learners in full-time employment were nearing 60 years in age and had had successful professional careers in teaching. Like the younger participants, they identified personal aspirations to explore new directions for future careers. They described extending career choices as increasing control over their personal situations in the future, i.e. through new job opportunities, self-employment opportunities, and more control over their current positions.

For other adult learners, participation in post-graduate learning also led to loss of control. This was particularly true for the participants who had chosen to give up full-time employment and had reduced their financial independence to take part in full-time study.

> *"I am nearly 30...I am at the moment financially dependent on my boyfriend, and even though that's fine and I don't want that really, I (would) rather be equal financially. It is about having control over my life. But a year ago I got rid of my control when I started to doing this (full-time nursing) course." (Jane Int 2)*

Jane and other full-time participants were able re-establish some financial control through part-time jobs. Two part-time learners, who had completed PhDs and were in full-time employment during their online courses, also recognized loss of control due to participation in formal learning. One learner identified a sense of helplessness when he first went back to being a learner on the online course. Another learner described it as a process of coming back into academia, losing control and reacclimatizing to what the tutors want.

Additionally, the increased emphasis on discursive learning was a shock to the participants whose past formal learning experiences emphasised fact-based learning and memorising. Eight participants stated that in the past they experienced structured, factual, and tutor-led lecture-based formal education and with minimal social interaction. These participants found interactivity uncomfortable. It involved making *"value judgments about people" (Helen Int 1)*. Two participant found the move

towards a social emphasis and sensitivity in learning challenging but necessary for their nursing course. For two overseas learners the shift was from learning through absorption towards critical thinking. These changes in ways of knowing challenged the adult learners participation in online discussions, as Karan summed up,

> *"My experience in India was mostly about memory and cramming in material as well. Question paper and purpose was to describe few chunks of the books. I found main difference was to take the books in the exam. I went through and worked hard. I did well, I got reasonably good marks, but I was expecting 70's and got in 60's. Like that way. So I talk to my tutor about that, so I realise that's the way they want different kind of answer. I realise there is different kind of study here. They pretty much pressurise on the sort of question they ask like analyse or describe. So your question should be formatted in that way. That was also the difference I found." (Karan Int1)*

While the above shifts in thinking and new ways of knowing were challenging, most participants rationalised the necessity for the change. However, similar rationalisation did not always extend to the use of online discussions as means of social construction.

The maturity in learning was epitomised in different ways. In the analysis it was evident that the participants had a heightened appreciation of why and how they made meaning, and demonstrated a metacognitive awareness. As the participants described their processes and activities during knowledge construction, they also highlighted their changed attitude towards postgraduate learning as compared to their undergraduate experiences. For example, Nina compared her blended postgraduate course experiences with her undergraduate course as a change in attitude towards her learning,

> *"Probably the biggest thing is that all through school and my first degree, I was very much a last minute girl. You know staying up all night, getting things in and rushing around in the last minute. Whereas now I can't even imagine doing that now. Now I get everything in advance, go and see tutors. I just put a lot more planning into my work. It is probably because I am more experienced. I am actually here, because I want to be here. It is actually hard for me to be here. Where university you went straight after school and it was kind of expected and its just what you do...I feel more responsible for my learning now." (Nina Int 1)*

All postgraduate participants stated they made a conscious choice to study for their respective courses. Ten out of twenty-nine learners explained that now they were more questioning of what the tutors said and how they learned. They compared their younger years of formal learning when they accepted whatever was given by the tutor, to now when they spent more time on self-reflection, questioning why they were learning something and what it meant for their work and future career prospects. This attitude led the participants to be more selective in their learning processes. They choose to spend time on learning activities that were more relevant for their work and personal context.

> *"I mean when you are younger you are like a sponge trying to absorb everything. As you get older you do a quick assessment, yes this is relevant and this is not. I don't need to bother with that, but I will do that. Because it all comes down to time, and its just like what is going to be best for me and what am I going to get out of it." (Cassie Int 2)*

Self-reflection and questioning also led these participants to be critical of the course design and the tutor's viewpoints. Carl expressed this strongly,

> *"Again I have now gone past the stage when I looked at the lecturer and thought wow I want to know as much as you know. Now my attitude is give me the evidence of your knowledge, give me the justification of your knowledge and I will examine that. So its no longer personality driven. It is not the learning don standing there giving you his worldly insights. I am beyond that. I don't see him as the authority when I was younger... I won't allow you to control that interaction and that transferability of knowledge. So I see it as being much more like democratic, no not more democratic, but being much more open and much more transparent." (Carl Int 1)*

The evidence suggested such a mature attitude to learning led the participants to aspire for greater control over their learning processes. The part-time and full-time postgraduate participants identified the importance of control over learning more than in their undergraduate years. At postgraduate level the participants also desired depth of engagement during the learning process.

Two participants identified their experience in formal education as a tool to regain control over their decisions and choices for individual or social learning processes. For example, Kay and Cassie concluded that during their undergraduate learning they were in a social mode. They felt then they needed more social interaction for support and as a de-stressor. But now with their work and life responsibilities it was important to prioritise. Their perceptions changed from social support to self-reliance.

> *"I think I am older now and I know what I want. Definitely, when I did my first degree I was 19 or whatever, it was more of a group, fun thing, the social element was much more important I think...I think certainly you build up your life experiences and I do tend to think I can do it on my own. If you are younger you are more in a social mode. But after a few years, after being let down, or not tending to perhaps rely on other people, or some friends drifting off a bit and being more selective in what they want makes you that way and a more isolated person, as you get older. Even with some of my contemporaries it is similar. Also you haven't got that much time either. You kind of become more self-reliant. Few times I have mentioned feeling isolated in a bubble. That sort of happened when I was doing this course has happened in my life. I wonder I may have been more sociable if was younger. I have seen that difference between old and young in the course. Older people like to just get on their own. They see it as learning and not as social." (Kay Int 2)*

Two participants concluded that social and individual learning through personal instigation was crucial to feel control over their post-graduate learning. For them online learning enabled greater freedom for self-pacing learning. For Carl, this freedom also meant greater control and confidence as an adult learner to know when to disengage from social learning.

> *"When you are older you know when to disengage and trust your own thinking" (Carl Int 2)*

The above findings suggested that the adult participants desired control over their individual and social learning. They wanted to be able to decide when and how the different activities including online discussions were appropriate for their learning. The participants also identified significance of life experiences and current learning goals that influenced their choice of learning activities. These findings raise the issue

whether and when online discussion participation should be a requirement for adult postgraduate learners, who may desire greater control and freedom in their learning. These considerations may be different from what the undergraduate participants may need. The implications of control and the related personal constructs were unraveled throughout the analysis. The present and the two next chapters evidence the importance of these constructs for adult learners, to consider implications on future practice in the latter chapters.

4.3 Silent, moderate and active labels

During the first interview the participants were asked to identify if they considered themselves silent, moderate, or active online discussion participants. This categorisation is listed in Table 4.2 (uses pseudonyms for the participants). In the analysis these 'labels' of silent, moderate and active participants were used to indicate participants perceptions of their participation levels in online discussions. These labels were individually identified. They were not developed or measured using any special scale for participation. They were simply participants' constructions of how they saw themselves in online discussions during their online or blended courses.

These constructions may also represent the participants' preferences and validation or invalidation of the online discussion tool for their learning. This became apparent as the individuals who identified themselves as active in discussions felt they participated more and gained more through online engagement. Yet active participants also discussed negative experiences during online discussions. These negative experiences were similar to the online discussion experiences of moderate and silent participants.

Table 4.2 Silent, moderate active labels identified by study participants (at the beginning of each interview, represent their perception of their involvement in online discussions)

Participants Pseudonym (Male ♂) (Female ♀)	Course studied (online (O) ; blended (B) course)	Full-time or Part-time study	Employment* FT/PT/Self-employed/student	Participants perceived level of participation
Jon ♂	Geographic Information Sciences (M level) (B)	Full time	Student	Active
Sam ♀	Geographic Information Sciences (M level) (B)	Full time	Student	Active
Lucy ♀	Business Management (M level) (B)	Full time	Student	Active
Fiona ♀	Business Management (M level) (B)	Full time	Student	Active
Carl ♂	Online tutoring (PG Certificate level) (O)	Part time	FT	Active
Joan ♀	E-learning module (M level) (O)	Part time	Self-employed	Active
Anne ♀	Information Sciences & Online tutoring (M level) (O)	Part time	FT	Active
Betty ♀	Nursing (PG Diploma) (B)	Full time	Student	Active
Jane ♀	Nursing (PG Diploma) (B)	Full time	PT	Active
Shelly ♀	Online tutoring (PG Certificate level) (O)	Part time	FT	Moderate
Rob ♂	Online tutoring (PG Certificate level) (O)	Part time	Self-employed	Moderate
Corrie ♀	Online tutoring (PG Certificate level) (O)	Part time	FT	Moderate
Dan ♂	Online tutoring (PG Certificate level) (O)	Part time	FT	Moderate
Claire ♀	E-learning module (M level) (O)	Part time	FT	Moderate
Helen ♀	Digital Entrepreneurship (PG Certificate level) (O)	Part time	FT	Moderate
Ross ♂	Digital Entrepreneurship (PG Certificate level) (O)	Part-time	Student	Moderate
Kay ♀	Information Sciences (M level) (B)	Full time	PT	Silent
Lara ♀	Geographic Information Sciences (M level) (O)	Part time	FT	Silent
Max ♂	Geographic Information Sciences (M level) (O)	Part time	FT	Silent
Karan ♂	Geographic Information Sciences (M level) (B)	Full time	PT	Silent
Jose' ♂	Geographic Information Sciences (M level) (B)	Full time	PT	Silent
Mat ♂	Business Management (M level) (B)	Full time	PT	Silent
Ernie ♂	Digital Entrepreneurship (PG Certificate level) (O)	Part time	Self-employed	Silent
Fran ♀	E-learning module (M level) (O)	Part time	Self-employed	Silent
Ellen ♀	Nursing (PG Diploma) (B)	Full time	Student	Silent
Nina ♀	Nursing (PG Diploma) (B)	Full time	Student	Silent
Jaya ♀	Nursing (Post-registration) (O)	Part time	FT	Silent
Carmel ♀	Nursing (Post-registration) (O)	Full time	PT	Silent
Cassie ♀	Nursing (Post-registration) (O)	Part time	FT	Silent

*FT = Full time employment

*PT=Part time employment

All the silent and moderate participants had participated in online discussions. The silent participants felt their online discussions experiences led them to invalidate online discussions as a communication tool to support social construction, at least for that particular online or blended learning course. However, these silent participants did not completely reject online discussions because they benefited from reading the

discussions. They did not feel they gained much from active participation. The moderate participants mostly participated in response to the required online discussions. Like active and silent participants, they identified various reasons how online discussions were useful for their learning in some instances and not in others. The differences and similarities between active, moderate and silent participants constructs for knowledge construction are reported in the next two chapters.

The reader may refer to Table 4.2 during the readings of the proceeding chapters, to understand the reasons attributed to the different levels of online participation. Nevertheless, it is very important to state that such categorisation is not recommended to distinguish and label learners in online or blended courses, at least not without a better understanding of alternative ways of knowing. This is also supported by the research results that revealed the participants were in continuous flux between active, moderate and silent participation roles during online and offline social learning.

The Repertory Grid analysis of the two participants, who identified themselves as active and silent online discussion participants respectively, shows the difficulty and fundamental flaw in categorising learners as active, moderate or silent in a constructivist paradigm. The two participants self-categorisation gave incomplete information about their alternative social learning approaches.

4.4 The Repertory Grid analysis for two participants

This section demonstrates how the Repertory Grid and qualitative analyses revealed the differences and similarities in knowledge construction for two learners who identified themselves as active (Betty) and silent (Karan) online participants.

4.4.1 Connecting with Betty's learning world

Betty was a full-time student enrolled on a two-year postgraduate diploma programme in nursing. She studied for a first degree in Biology soon after completing her 'A' (Advance) levels studies. Since graduation she wanted to work as a nurse. Before joining the full-time nursing course she chose to pay-off her university debt and

worked for two years in a pharmaceutical company. She was in receipt of a bursary during the nursing studies.

During the nursing diploma Betty lived at home with her husband and had no additional caring responsibilities. The Internet had always played an important part throughout Betty's life when she was growing up. Her parents worked abroad and relied on easy online access to contact their family and friends in the UK. She continued to rely on the broadband Internet access at home for her nursing studies and for daily transactions including online banking, paying bills, online shopping and keeping in touch with friends.

> *"S: So when the Internet wasn't around and information was not so accessible, how...?*
>
> *B: Gosh! I have always used it. At home my parents have always had a computer. So I don't really remember the time before the Internet really (Laughs)" (Betty Int 2)*

Betty's course required regular weekly class attendance for all modules. The course used the VLE online discussion board for an interdisciplinary module, which involved medical students from another university. She was part of an interdisciplinary learner group and was required to collaborate in problem based learning (PBL) tasks throughout the two-year full-time programme. The group was expected to use the online discussion facility to communicate for class presentations while in individual clinical placements. Betty envisaged the benefits of this discussion facility because she lived further away from the university. The discussion board was useful to keep in touch with her peers and the course tutors. She described herself as an active online discussion participant. However, she eventually switched from using the university VLE discussion board to other online communication technologies including email, text messaging and telephone, not seen by the tutor.

Did Betty's personal reliance on IT affect how she engaged in learning during this blended learning course? Why did she stop using the online discussion board? How might the use or disuse of the online discussion board relate to the way she constructed meaning for her learning? How important were others in her learning processes and meaning construction? These questions were unravelled as the

researcher tried to understand how Betty engaged in learning using the Repertory Grid Method.

4.4.1 a Betty's learning activities and constructions

During the first interview Betty produced eleven elements and gave sixteen personal constructs, listed in Tables 4.3 and 4.4 respectively. Betty's elements were the activities she chose to help her learn. Some of these activities were self-motivated and others were course requirements. These elements suggested Betty took part in individual and social learning.

Table 4.3 Betty's Elements

E1 Email Colleagues (to share docs and ppt.: formal & informal are happening together)
E2 Search on the internet for visual resources & flowcharts
E3 Search databases & search engines on specific subjects
E4 Read web pages, articles on or off the computer
E5 Jot down ideas from what I have read
E6 Email peers for Informal discussion and to maintain contact when in placement
E7 Email tutors my essay for feedback
E8 Manage and organise my time and knowledge online
E9 Initially used VLE for online discussions
E10 Being part of a group
E11 Read other peoples' emails (re. Shared documents)

These elements may appear to be activities any learner may choose. Nonetheless a closer look at the interview data showed that some activities were more specific to Betty. For example, E3 "search databases & search engines on specific subjects" for Betty was different from many other learners interviewed for this study. Betty allowed the search results to guide her decisions for the final topic of study. Other learners in this study commonly used pre-defined learning outcomes to guide their searches.

Betty's IT reliance for individual and social learning was also indicated in other learning activities (Table 4.3). The online communication links with peers and tutors helped to manage and organise her learning from home, without travelling long distances to the University. As suggested in the e-learning policy (DfES 2003), IT

access made learning more convenient for Betty. The construct elicitation process (Table 4.4) and the feedback interviews analysis helped to surface if and how the online access and the online communication activities affected her knowledge construction.

Table 4.4 Betty's Constructs

Emergent Pole	Implicit Pole
PC1a Me acquiring the knowledge	PC1b Sharing knowledge that I have found
PC2a Here I am finding the information	PC2b Here I am processing the information
PC3a Broader knowledge	PC3b More focused knowledge
PC4a I am open to look at learning resources I find	PC4b I am pin-pointing what I want to know and write
PC5a This is more organic and fluid process	PC5b Not as fluid but limited
PC6a Here I learn from different views	PC6b Here I build my point of view of learning
PC7a This is working as a group for learning	PC7b This is solitary learning
PC8a Here I am learning from other people's perspective	PC8b Here it is purely my perspective
PC9a Other people are influencing my thought process	PC9b This is my independent thought process
PC10a This helps me question what I have learned	PC10b Here I am not questioning myself
PC11a Here my ideas are dependent on or influenced by others	PC11b Here my ideas are independent of others
PC12a Here I have responsibility to others	PC12b Here responsibility is not an issue
PC13a This facilitated my learning	PC13b This did not facilitate my learning
PC14a Helps to create relationships with others	PC14b Does not facilitate relationships creation
PC15a I choose when the facilitators see the work	PC15b Observed by tutor/facilitators all the time
PC16a I trust this for growing my ideas	PC16b I don't trust this for growing my ideas

During personal construct elicitation the triad E1, E2 and E3 was deconstructed as E2 and E3 were similar because they involved searching resources. She equated this with acquiring knowledge. She had an open attitude to all new information and allowed it to influence her thinking. She described searching as an "*organic and fluid"(Betty Int 1)* process, where one piece of information led to questions and consequently to newer information. This helped her to develop a broad base knowledge before she decided

what resources she was going to use for her learning. She felt the searching process was not passive but an active process, where

> *"I am using a lot more of my brain in searching because I am sort of trying to think of where I can find information and how I can find that information. Finding the right websites that will tell me what I want to know." (Betty Int 1)*

The variety of information gave her different viewpoints to develop her own personal perspective.

Element E1 was emailing colleagues. This was about sharing her perspective and learning comprehension with colleagues. She found it useful to give written explanation to others because the process of writing required her to be clear about her own ideas. The process of writing an email helped her to make sense of the information she had read. In contrast with searching information, preparing an email document for sharing helped her to summarise and focus on areas important for her studies.

Reading others emails and documents (E11) also helped her to learn from others by deconstructing how they might have reached that perspective and what references and information they might have used. She felt others perspectives were very important to help her look beyond what she was thinking. Learning from others perspectives helped to question what she had found and understood.

> *"Really working by myself I will only gain so much. Where as I think you will always benefit from sharing with other people. Even if people do not necessarily agree with what you are saying, you get a different perspective, which you don't always get if you are working alone...(Others help to) sort of reinforcing and questioning what I have found in my research. But you don't get that if you work by yourself because if you are writing you don't tend to question it. Because you are writing what you think is right." (Betty Int1)*

Others involvement through online communication appeared to be central to Betty's knowledge construction. Firstly, processing her personal knowledge when writing emails to others helped her to clarify her own constructions about the information she had found. Secondly, reading others messages helped her to look at the same information but from a different perspective, and to reconstruct personal perspective.

She actively involved others in her psychological space to construct, deconstruct and reconstruct personal meaning.

If written communication was an important process to 'make sense' how did this influence her choice for participation in the VLE online discussions? Betty noted responsibility to others when sharing knowledge was an important construct. Technical difficulties with the VLE meant her personal emails facilitated this process more than the VLE discussion. Further deconstruction of differences between personal email and the VLE discussion board identified trust and relationships as personal constructs that influenced Betty's social learning. She felt if she had a trusting relationship with someone she was more likely to ask their opinion on her work. She found the emails were less formal and included social information that helped to create relationships and build trust. In contrast, the VLE discussions were construed to be more formal and not appropriate to build trusting relationships. Thus, learning with others using the tools to develop trusting relationships and learning on her own with easy online access were important for Betty's knowledge construction.

4.4.1 b Betty's Repertory Grid and Factor Analysis

Betty used a scale of 1 to 5 to rate each element against each pair of construct using the rating method described in Chapter Three. Her Repertory Grid is shown in Table 4.5.

The visual examination of the Grid gave some clues about the relationships between her constructs and elements. The results of grid correlation analysis were used in the feedback interview to shed further light on the relationships between her learning activities (i.e. elements) and personal constructs.

Table 4.5 Betty's Repertory Grid

PCa	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	PCb
1a	4	1	1	1	1	3	5	2	3	3	2	1b
2a	4	1	1	3	5	5	3	3	4	3	4	2b
3a	4	1	1	1	2	2	5	3	5	3	4	3b
4a	4	1	1	1	3	3	5	3	5	3	4	4b
5a	3	1	1	1	2	1	5	3	4	3	4	5b
6a	3	1	1	1	1	2	4	3	3	1	2	6b
7a	3	5	5	5	5	3	4	4	2	3	2	7b
8a	2	5	5	5	4	3	3	4	2	4	1	8b
9a	3	2	2	2	5	3	4	3	3	3	2	9b
10a	2	1	1	1	3	3	3	2	2	3	2	10b
11a	1	2	2	2	4	3	1	3	3	3	2	11b
12a	1	5	5	5	4	1	4	2	1	1	1	12b
13a	1	2	2	2	1	3	2	3	4	1	1	13b
14a	1	5	5	5	4	1	2	3	2	1	1	14b
15a	2	1	1	1	1	1	3	3	5	4	2	15b
16a	2	1	1	1	2	3	3	3	2	3	2	16b

The factor analysis function in SPSS was set to use the Varimax rotation method and the Scree plot method to extract the principal components from Betty's Repertory Grid. The final elements and constructs principal component results are given in Tables 4.6 and 4.7 respectively.

Table 4.6 Betty's Elements Principal Component Results (Rotation Method: Varimax)

Rotated Component Matrix[a]

	Component			
	1	2	3	4
e1 Email Colleagues (to share docs and ppt.: formal & informal happening together	-.263	.873	.268	.161
e2 Search on the internet for visual resources & flowcharts	.947	-.232	-.182	.056
e3 Search databases & search engines on specific subjects	.947	-.232	-.182	.056
e4 Read webpages, articles on or off the computer	.951	-.188	.003	.076
e5 Jot down ideas from what I have read	.721	.041	.535	.134
e6 email for Informal discussion and to maintain contact when in placement	-.083	.030	.927	.116
e7 email tutors my essay for feedback	-.064	.935	-.226	-.100
e8 Manage my time and knowledge online	.325	-.062	.017	.870
e9 Initially used WebCT for online discussions	-.686	.320	-.103	.456
e10 Being part of a group	-.198	.238	.333	.600
e11 Read othe peoples' emails (re. Shared documents)	-.433	.713	.210	.263

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Table 4.7 Betty's Constructs Principal Component Results (Rotation Method: Varimax)

Rotated Component Matrix[a]

	Component			
	1	2	3	4
pc1a Me acquiring the knowledge	.834	-.303	.242	-.053
pc2a Here I am finding the information	.006	-.579	.660	-.056
pc3a Broader knowledge	.822	-.471	.192	.138
pc4a I am open to look at learning resources I find	.726	-.503	.395	.116
pc5a This is more organic and fluid process	.832	-.327	.193	.073
pc6a Here I learn from different views	.883	-.170	.120	.216
pc7a This is working as a group for learning	-.333	.919	-.006	-.179
pc8a Here I am learning from other people's perspective	-.478	.799	-.071	.083
pc9a Other people are influencing my thought process	.240	.155	.920	-.054
pc10a This helps me question what I have learned	.260	-.311	.875	-.081
pc11a Here my ideas are dependent/influenced by others	-.613	-.114	.597	.444
pc12a Here I have responsibility to others	-.186	.914	-.208	-.158
pc13a This facilitated my learning	.092	.017	-.084	.904
pc14a Helps to create relationships with others	-.427	.816	-.289	.081
pc15a I choose when the facilitators see the work	.543	-.353	.127	.562
pc16a I trust this for growing my ideas	.402	-.358	.660	.159

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

In these Tables the loadings over 0.576 were determined to be significant for eleven elements (degrees of freedom=10) using the Burt-Banks (1952) formula recommended by Child (1990, 110). Similarly loadings of 0.483 were significant for 16 constructs (degrees of freedom=15). Betty's Grid calculations resulted in four principal components with significant levels of element correlations and four principal components for construct correlations. The elements with high loadings in each principal component were represented on separate axes of a multi-dimensional graph

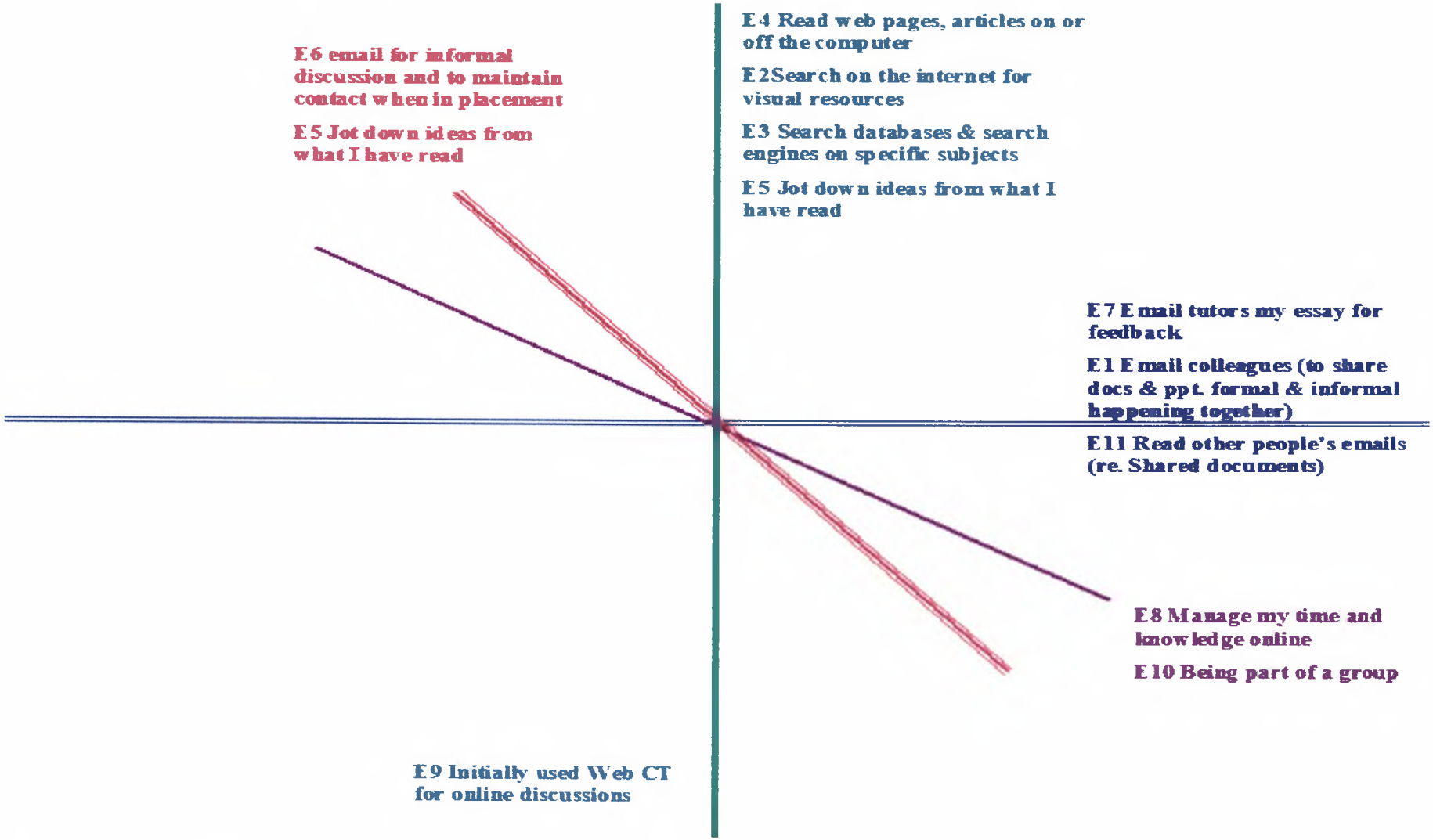
(Graph 4.1a). Similarly the high loadings for construct principal component in Table 4.7 were used to represent the principal components of constructs in Graph 4.2a.

4.4.1 c Labelling the key learning dimensions

Betty was informed how these graphs were developed using factor analysis calculations. She was familiar with statistics terminology and understood how the grid was used to obtain principal component results. This understanding was useful for her to feel greater ownership of the data. Beginning with the Graph 4.1a she was asked to look at each axis and the corresponding elements to consider why these elements were closely correlated. Does the correlation suggest something significant about the way she learned? If she were to label this as a dimension of her learning, what would she call it? This was repeated for construct dimensions in the Graph 4.2a. The final labelled graphs were Graph 4.1b and 4.2b

Labelling elements (Graph 4.1a): The green axis represents the first principal component with highest loadings for the elements E2 (Search on the internet for visual resources & flowcharts), E3 (Search databases & search engines on specific subjects, E4 (Read web pages, articles on or off the computer), E5 (Jot down ideas from what I have read) and E9 (Initially used VLE for online discussions). E9 is placed at the negative end of the axis because it had a negative correlation value. Betty labelled this axis "*my internet learning" (Betty Int 2).*

> *"This is what I would call my internet learning. Finding the information, making my own ideas based on what I would have read. This is what I would do anyway. And this (E9) would be too, but because we don't use VLE I think that's why it is poling it. That was probably shown in the numbers that I did in the Grid. I was negative about my VLE experience. But the online learning on my own was a positive experience. I did the latter because I use this regularly anyway." (Betty Int2)*



h 4.1 a Graphical representation of the four principal components of Betty's elements with high loadings

These online elements made her learning convenient because she could access the learning material easily and organise herself. The searching online elements also gave her a foundation and helped to build her ideas. Her faith and reliance on the Internet and the information accessed made her feel more in control over her online learning. In contrast, the technical problems with the VLE discussion board meant it was less reliable and reduced her control over the learning processes.

> *"I suppose I just have a lot of faith in the Internet and its probably a control thing. I mean I know if I see things online I know they are done, they are there. Where as with outside sources like the post you have less control... It gives me control over my learning... I guess because I have always had the computer and then we got the Internet."* ...(When using the VLE)*"I think I was worrying that things (messages and documents) weren't getting across you know, that's why the control slipped through." (Betty Int 2)*

For Betty, the actual online aspect of rapid sharing of information was more than social learning. It was also related to her need to feel organised and in control. She felt in control using any online communication tool when she knew information transfer was successful and she could expect a response in the near future.

> *"You have more control because when you get the reply you know something is going on, you know the progress is continuing." (Betty Int2)*

Her ultimate label for the first component was *"my Internet learning gives me control over my learning" (Betty Int 2).* In describing this label Betty acknowledged reliance on IT as closely linked to her main construct of control over her individual and social learning processes.

The blue axis (Graph 4.1a) represented the second component from element principal component analysis. The highly loaded elements on this component were E7 (Email tutors my essay for feedback), E1 (Email colleagues to share documents and PowerPoint; formal and informal happening together) and E11 (Read other people's emails re. shared documents). These elements represented the end products that she felt confident to share openly with the tutor and with all others in her group. Other people's perspectives on her personal knowledge and reading others' final work helped her to reflect and surface gaps in her knowledge. Betty labelled this axis *"reflective learning by listening to other people's perspectives" (Betty Int 2).*

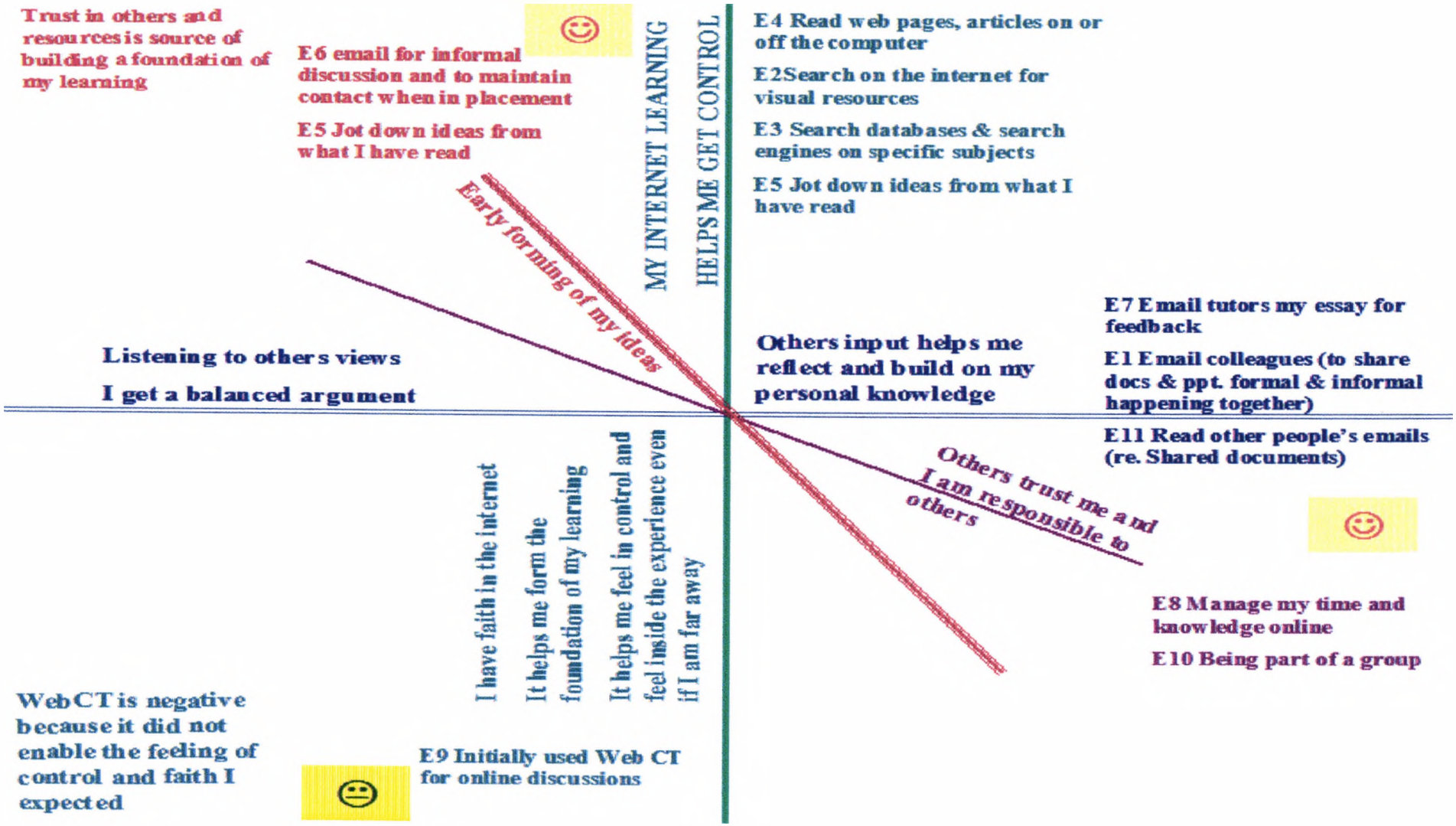
However, learning with others in this way made sense for Betty only if she had the opportunity to go back to her solo efforts described in the first component.

> *"... if you find what other people have done, I would probably go back to doing the solo based on what I have read into that. And say ok lets put that into the search engine and see what comes out. So I probably wouldn't pick totally what they have said in their document. But will use that as source to pinpoint and look at other areas." (Betty Int 2)*

Betty maintained control over what she accepted as personal knowledge, until she was sure that the new knowledge was trustworthy.

The third component represented by the red axis (Graph 4.1a) had high loadings for two elements E5 (jot down ideas of what I have read) and E6 (email for informal discussion and to maintain contact when in placement). During her Internet learning Betty was in control when using the Internet but she was less sure of the validity of her developing ideas. The third component was about building confidence in her initial ideas, before she accepted them as personal knowledge. E6 represented her control over learning through sharing informally with others she knew and trusted. E5 represented self-processing of initial ideas, before trusting these ideas, to develop personal knowledge. These two elements helped Betty to process and validate her initial ideas. She labelled this as the "*early forming of my ideas" (Betty Int 2).*

The fourth component (purple axis in Graph 4.1a) included elements E8 (Manage my time and knowledge online) and E10 (Being part of a group) with the highest loadings. Betty labelled this *"Others trust me and I am responsible to others" (Betty Int 2).* Betty established that to benefit from her peers, it was important she was also a trustworthy, reliable and an active member of the group. In order to be trustworthy she had to be organised and manage her time more effectively. Graph 4.1b represents Betty's labelled learning dimensions as explained by the learning activities she chose during her blended learning course.



Graph 4.1 b Betty's elements dimension labels

Labelling Constructs (Graph 4.2a): The first component (green axis) in Graph 4.2a showed high loadings for the constructs PC6 (here I learn from different views/here I build my own point of view of learning), PC1 (me acquiring knowledge/sharing knowledge that I have found), PC5 (this is more organic & fluid process/not fluid and limited), PC3 (broader knowledge/more focused knowledge), PC4 (I am open to look at learning resources I find/I am pinpointing what I want to know and write), and PC11 (here my ideas are independent of others/here my ideas are dependent or influenced by others).

Betty labelled the top end of this construct axis as *"informal, broad, social and open learning" (Betty Int 2)*. She explained that this group included the construct pole PC11b (here my ideas are independent of others), because she always also used her own ideas while she was open to others ideas. She explained

> *"So although my ideas are independent in terms of my fundamentals, they are not independent in terms of my learning. So my learning is a lot more open and dependent on people's opinions and dependent on my own opinions or my research and listening to other people. I think being independent is about just having my own ideas alongside others." (Betty Int 2)*

Betty described the bottom half of this construct component as *"formal, outcome-focused, final representation of my knowledge" (Betty Int 2)*. In essence this part of the component represented Betty's analysis and synthesis processes of her knowledge construction. By sharing her personally developed knowledge she could reconstruct what she had understood and present it in a written format. Her individual and social learning processes moved along the first axis and were broad as well as focused. The axis did not represent a linear or one-way movement for Betty's learning. She described it as *"a continuous backward and forward" (Betty Int 2)* process.

Graph 4.2a Graphical representation of the four principal components of Betty's constructs with high loadings

I asked Betty if the VLE discussions as an element would sit near the broad or focused end of this construct component. She identified these discussions as part of the formal and focused learning process because they were visible to all the group members and the tutor. The tutor monitoring of the VLE discussions meant she had limited freedom and independence to thrash out ideas openly.

She further confirmed this in another component (red axis on Graph 4.2a) that included high loadings for PC13 (this facilitated my learning/this did not facilitate my learning), PC15 (I choose when facilitators see the work/observed by the tutor all the time). She labelled this as the *"control axis" (Betty Int 2)*. She was more in control of the learning process if she could chose when the tutor saw her work and this facilitated her learning. She felt lesser control if the tutor could observe her work at all times. The latter was more formal and less effective for her learning process. The VLE discussions did not give her control over who was watching and if she could trust them for a reliable feedback. As a consequence, she did not use the VLE discussion board for her knowledge construction process (even after the technical issues had been resolved). She only used it to share the end products of her knowledge. In the VLE discussions that were seen by the tutor at all times, Betty regained some control by curtailing her responses to impress the tutor.

The construct component (blue axis in Graph 4.2a) had high loadings for the constructs PC7 (this is working as a group for learning/this is solitary learning), PC12 (here I have responsibility to others/here responsibility is not an issue), PC14 (helps to create relationships with others/doesn't facilitate relationship creation, PC8 (here I am learning from other people's perspectives/here it is purely my perspectives), PC2 (here I am processing the information/here I am finding the information). Betty labelled these two poles *"social"* and *"solo" (Betty Int 2)* learning.

It was interesting to note that although others were central in Betty's knowledge construction process, she felt social learning only approximated to 20% of her learning. 80% of her learning was individual and involved developing ideas, putting things down on paper and deciding areas of study. At this stage she did not trust her ideas and would take them to the…

"...social side of the whole. Here I will get the groups' perspectives, so I am working with the group listening to their ideas." (Betty Int 2)

Betty had already identified trust as a central construct of her social learning. She labelled the fourth component (purple axis in Graph 4.2a) *"trust in my knowledge" (Betty Int 2)*. At the top end of this axis, she had less trust in what she initially found. She needed to process the information on her own before she could trust it. She would process the information and then question it with others (bottom end of the axis). Sharing the information with others was her way of testing out the validity of the information. She might not agree or even trust others perspectives, but used them to build a balanced insight into the newly acquired personal knowledge.

Graph 4.2b shows the final labels for Betty's personal construct dimensions. This labelling exercise gave deeper insights into Betty's main constructs that influenced her knowledge construction during social and individual learning.

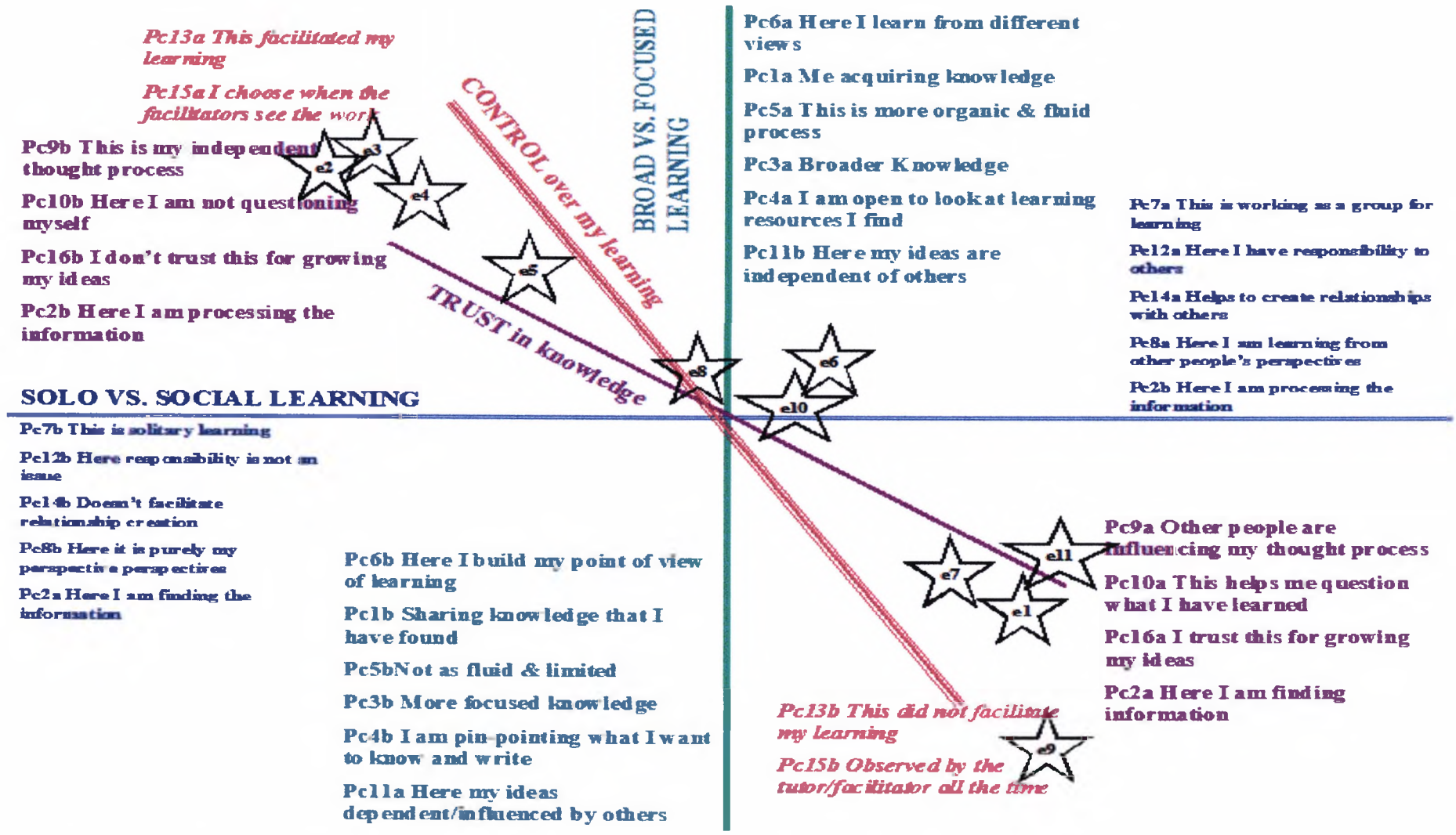
4.4.1 d Confirmation of Betty's outlook

Two further visual representations were used during the feedback interview to ensure I understood Betty's knowledge construction processes as she construed them. Graph 4.3 was an approximate plot of Betty's elements (using her Repertory Grid ratings), on the labelled construct components in the Graph 4.2b. This Graph 4.3 aimed to deconstruct how Betty's elements visually related to each other and to her personal constructs dimensions while she construed meaning during her blended learning course.

Betty was taken through the grid rating of each element and asked if she agreed with the element positioning in the Graph 4.3. Betty agreed that in the top-left quadrant the elements E2, E3, E4 and E5 were her individual learning activities. She added that E5 was closer to forming her ideas but she would not trust these ideas. She established,

"I am not ready for the facilitator yet" (Betty Int 1)

Graph 4.2 b Betty's construct dimension labels



Graph 4.3 Plot of Betty's elements around her construct dimensions

She also agreed with the positioning of the elements E8, E10 and E6 in the mid-top half of the Graph 4.3. She identified these activities required trust and relationships and facilitated informal social learning. She used these elements to develop trusted relationships with peers, to share her ideas and to gain others' perspectives. She felt in control during these social activities because they allowed her flexibility to take back additional ideas and to re-assess them in her individual learning space (in the top-left quadrant). This two-way process helped her to build trust in her personal knowledge and present a more-rounded argument.

Once she was sure of her personal ideas, she was ready to present them formally as the end products of her personal knowledge. She stated this was represented in the cluster of elements at the bottom-right quadrant (Graph 4.3), E1, E7 and E11. These elements were about sharing end products with colleagues and tutors. Here she felt more confident about her argument and felt in control to share her ideas more openly. The formal comments made by the tutors on her learning products were fed back into her individual learning space to re-construct personal ideas and meaning.

Betty also confirmed E9 (initially used VLE for online discussions) was correctly positioned distant from the other element clusters because it did not facilitate her learning during the blended course. The VLE technical difficulties and the lack of choice over when the tutor saw her learning product, made her feel less in control over her formal social learning process.

Betty summarised,

> *"(The middle elements are a) sort of a bouncing stage. I am going from learning on my own, to sharing with other people, and then to do the formal sharing or use the VLE. So it is a natural progress down the chart really. Gosh its amazing." (Betty Int 2)*

This learning process was represented in a metaphoric representation (Figure 4.1) developed with Betty near the end of the feedback interview.

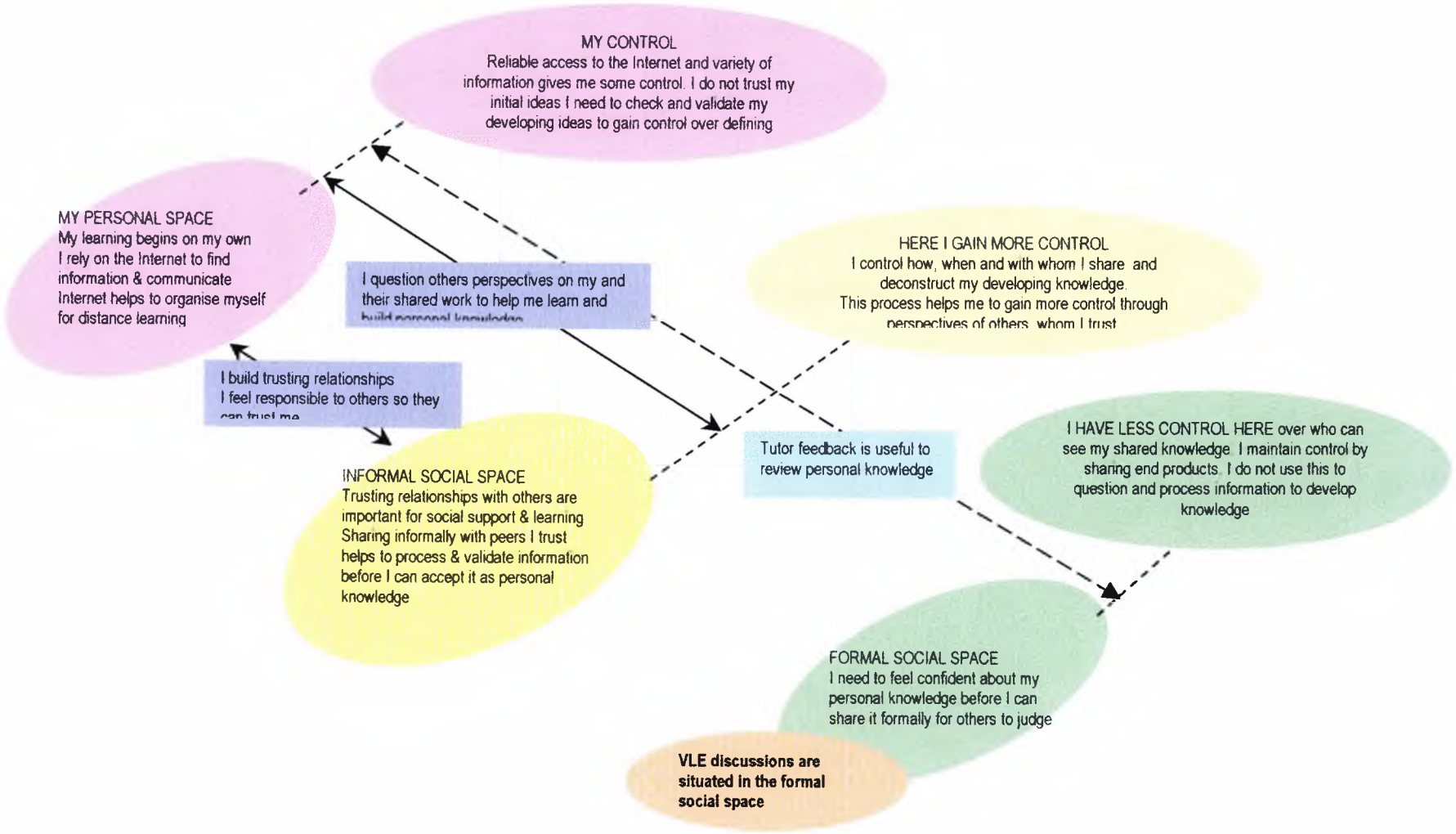


Figure 4.1 Metaphoric representation for Betty's Knowledge Construction

4.4.1 e Trust and Control in Betty's knowledge construction

The Repertory Grid analysis revealed 'trust' and 'control' as the two central constructs interlinked with all the other constructs and elements in Betty's knowledge construction. In Kelly's terms these can be called Betty's super-ordinate constructs. She applied the 'trust' construct in many ways. She trusted the Internet to access reliable information and to effectively communicate with her peers. Her trust in the Internet was deep-seated and innate because she grew up using IT. When faced with technical difficulties in the VLE discussion board, she responded by switching to using other online communication tools. Her trust and reliance on the Internet was not affected by this negative experience. The experience did bring into question her reliance on the VLE discussion board as a learning tool. Nevertheless, she confirmed that she would use the VLE discussion board more in the future if it worked as expected.

Trust also featured throughout Betty's knowledge construction during her individual and social learning processes. She questioned the information she found on the Internet. She built and used informal trusting relationships with others to share her initial ideas. The process of sharing helped her to build trust in these ideas and use them to construct personal knowledge. She identified that trust in others was more easily established through personal contact than via online communication. Her blended learning course provided her with this opportunity and she identified peers she could trust to informally share her emerging ideas, online and offline.

The control construct was also evident throughout Betty's knowledge construction processes. She controlled what she accepted as personal knowledge by ensuring she had access to multiple perspectives on a subject, through the Internet and entrusted peers. The Internet helped her to feel in control over her learning because she could easily access learning resources and communicate with tutors and peers at a distance from her own home. She also exercised control by questioning, checking, and validating ideas on her own and with others. She maintained control over what she accepted and defined as personal knowledge during learning.

The tutor's power and authority over access to all shared information on the VLE discussion board affected Betty's control over her knowledge construction. She felt

less free to question and thrash out ideas in the online presence of the tutor. She regained control by limiting sharing her finished products on the VLE discussion board, while sharing other construction processes via personal emails with entrusted peers.

Thus Betty's Repertory Grid analysis revealed her learning processes and knowledge construction were strongly influenced due to her feelings of personal control and trust. Her desire to be in control meant she chose self-led and informal online communication, before involving tutors and others in the VLE space to share her new ideas and emerging knowledge. Trust was an important construct because it helped to maintain her control by identifying what and who to trust before sharing information, and before accepting information as personal knowledge.

4.4.2 Karan's learning world

Karan was a full-time overseas student enrolled on one-year Masters programme in Geographic Information Science (MGI). He completed his first degree in Information Technology in his home country, India. He also worked as a teacher in his university in India before deciding to study Geographic Information Sciences in the UK. He used his savings and financial support from his parents in India to pay for this course.

During the MGI course Karan lived in a rented accommodation, which was an hour tube ride from the HEI. He worked part-time for 16 hours a week as an auditor for a private organization. His auditing job was not related to his area of study, but it provided him with financial assistance towards his daily expenses, rent and food.

As previously mentioned, the MGI course used the same online interface for part-time online learners and full-time blended learners like Karan. As a full-time student he studied four modules every semester. Every week new lecture materials were posted online for each module. The online and blended learners were required to complete weekly quizzes, individual tasks and participate in online discussions and collaborative learning activities. As a blended learner Karan also attended weekly class discussions with peers and subject experts in the field. He emphasised he had to

be familiar with the weekly online learning materials in order to benefit from the class discussions.

Karan was a competent IT user and programmer. He also had extensive experience of using emails and informal chats with friends and family abroad. He missed the VLE induction workshop and had to use the online guidelines to access the learning material. The concept of using a discussion board for formal learning was new for him, but once he understood how it worked he could identify its importance in learning. Karan did not have any form of Internet access in his rented accommodation. He travelled to the University library regularly to use the Internet, to search, download and print online learning resources. Some modules in his course required the learners to be online to take part in interactive learning activities. This posed some limitation on where and when Karan could complete these activities. He had to prioritise his learning time around his ability to access the Internet at the University library, weekly reading, course assessments and his part-time job. He identified time and limited online access as one reason for being silent in online discussions.

The Repertory Grid analysis showed how Karan constructed meaning during his blended learning course. It helped to address the questions, if others were important for his learning processes? Would he have participated in the online discussions if he had easier access to the Internet? Or were there other issues related to his ways of knowing and using the online discussion board?

4.4.2 a Karan's learning activities and constructions

Karan identified thirteen elements and fourteen constructs listed in Tables 4.8 and 4.9 respectively. The thirteen elements were activities that he chose or was required to complete during his blended course.

Table 4.8 Karan's elements

E1 Read Lecture Material
E2 Participate in class discussions
E3 Complete weekly reports
E4 Read online discussions
E5 Read during travel
E6 Access and download reference material
E7 Term exams
E8 Submit coursework
E9 Active participation in group study (face to face)
E10 Informal interaction with lecturers (during fieldtrip)
E11 Fieldwork (practical aspects of learning & not assessed)
E12 Learning from classmates
E13 Coping with lack of email replies and online feedback from my teachers

For Karan downloading and reading mostly included the online learning and reference material provided by the tutor. He did not actively search for additional sources online unless they were part of the lecture material references or web links. He reasoned that online materials were sufficient and covered substantial areas of the subject. He also felt the structured provision of online learning material was a positive aspect of learning in the UK, in comparison to what he was used to in India. He described,

> *"In India there was no online study, here there is online study. In India there is no lecture material being provided by the teachers. You know there are particular course books but they only outline the main points in the lectures. In the syllabus you have headings of the different points and I had to search different books and references and find whatever. Its quite an open space. But it is very clear studies over here (in UK). Very well structured. The lecture material is given before. We can read the lecture material and participate in discussions in lectures. You can study in lectures and then learning objectives are very clear of what exactly they want from the study."*

It is possible that the structured MGI course design may be more transmissive as compared to the discovery learning that Karan was used to. It may have affected how Karan construed meaning from the learning activities.

Karan did not feel participating in online discussion was a priority. He preferred to read the key points from the ongoing online discussions. However, he stated that he was an active participant in weekly class discussions and class group work. He benefited from informal interactions with his lecturers and peers. How did these interactions help him engage and make sense of what he was learning? Why did he not give priority to online discussion participation?

During construct elicitation of the first three elements, Karan stated he enjoyed learning where he could apply theory to practical situations. The element E3 (complete online reports) was more effective for his learning because it gave him opportunity to chose his area of interest, define the task, and maintain focus. The practical aspect of the task that involved critical thinking helped him to keep engaged.

Table 4.9 Karan's Constructs

Emergent Pole	Implicit Pole
PC1a Online	PC1b Face-to-face
PC2a Self learning	PC2b Group discussions
PC3a Pre-defined by lecturers	PC3b Led by me
PC4a Learn lesser	PC4b Learn more
PC5a More theory	PC5b More practical
PC6a Boring	PC6b More engaging
PC7a Views from one lecturer	PC7bViews from different aspects
PC8a More time consuming	PC8b More focused
PC9a First in my priority	PC9b Last in my priority
PC10a More useful for my learning skills & future career	PC10b Not useful for me
PC11a More motivating	PC11b Not so motivating
PC12a Following course routine	PC12b Learning to apply to the real world
PC13a Not so updated	PC13b More updated
PC14a Theory work (routine)	PC14b More understanding & practical

On the other hand, (E2) participating in class discussions and (E1) lecture materials were pre-defined and led by the lecturers. For Karan the class discussion focus varied because too many areas were being covered in a short period of time. The discussions and lecture materials were theory driven. Too much theory was *"boring" (Karan Int 1)* and lost his interest. Nevertheless E1 and E2 were important to construct a

theoretical understanding, which felt largely incomplete unless he had the opportunity to apply it in practice. He also felt that the lecture materials and class discussions gave him only one person's perspective. In contrast, when he was completing a weekly reports on chosen tasks he was able to make sense from multiple perspectives drawn from the reference lists and the web links.

Karan also described that he gained more from the class discussions than he would from online participation. He recalled compulsory online participation in one module that involved regular feedback from the tutor, which was a positive learning experience. In the other modules when he attempted online postings or emailed the tutors directly, he did not get a reply or feedback. The online discussion postings felt time consuming and irrelevant. He also stated that the distance learners who led the online discussions either did not have same concerns as him or discussed the issues that he had already considered in class.

> *"Online discussions that I have read I don't think this is (these are) useful for me. But face-to-face discussion gives me much more thing. Because we have got expert lecturer, we have much more from them. Also E4 (online discussions) is not led by the lecturer but led by mostly distance students and their aspects are a bit different. Because they have not gone through face-to-face questions (that) arise because of the lecture material, which we might have already discussed in our lecture classes. So I don't think this is so useful for me. The 9 (active participation in group study face to face) and 10 (informal interaction with lecturers during fieldtrip) are useful for motivation, learning skills and my future career. 4 (online discussions) is not motivating."(Karan Int 1)*

Karan stated he had good social relationships with his classmates. They would get together and discuss topics that they may have read in the online discussions but most of them did not participate actively. He felt more motivated to participate in collaborative face-to-face group work that involved planning, splitting tasks and combining work for final presentations in class. He also appreciated the informal interaction with tutors during a course fieldtrip because it gave him the opportunity to openly discuss practical applications of theory. He saw these the face-to-face

interactions with the subject experts and peers as useful for developing communication and interpersonal skills for future career.

So, Karan appeared to learn through active interaction with others. Was there anything else that was inhibiting his participation in online discussions? Why did he prefer the face-to-face group tasks as compared to online? Why did his learning construction exclude online discussion participation?

4.4.2 b Karan's Repertory Grid and Factor Analysis

The visual analysis of Karan's Repertory Grid (Table 4.10) suggested similar ratings for his social learning elements E2, E9, E10, E11, E12 and E13. This was not surprising as Karan talked about these as positive social face-to-face learning experiences. Reading lecture notes and reading during travel also had the same ratings. In the construct row PC5 more theory/more practical was rated similarly to PC6 boring/engaging. The ratings for PC1 online/face-to-face had some similarities with PC3 pre-defined by lectures/led by me. This preliminary analysis raised further questions about the similarities and differences in ratings and Karan's knowledge construction processes?

Table 4.10 Karan's Repertory Grid

PCa	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	PCb
1a	2	5	1	1	4	2	4	3	5	5	5	5	1	1b
2a	1	4	1	4	1	1	2	2	5	3	5	5	3	2b
3a	2	4	4	5	5	1	4	3	2	5	5	5	2	3b
4a	5	4	4	1	4	5	4	5	4	4	5	4	2	4b
5a	1	4	1	4	1	2	1	4	4	4	5	3	3	5b
6a	1	5	4	2	1	4	1	2	4	4	5	5	3	6b
7a	1	4	4	4	1	5	4	5	2	2	5	5	3	7b
8a	2	4	4	2	1	1	1	5	4	3	4	3	3	8b
9a	2	4	1	5	2	2	1	1	2	4	1	2	3	9b
10a	4	2	2	5	2	1	3	2	2	2	1	2	5	10b
11a	3	2	2	5	3	3	3	4	2	1	1	2	5	11b
12a	1	2	2	4	2	2	1	1	2	5	5	4	3	12b
13a	2	2	2	2	3	4	1	4	4	5	5	4	3	13b
14a	1	2	1	3	3	4	1	1	5	5	5	4	3	14b

The factor analysis function in SPSS with varimax rotation and the scree plot methods were used to extract the principle components for Karan's elements and constructs, shown in Tables 4.11 and 4.12, respectively.

With the degrees of freedom equal to 12 and 13 for elements and constructs respectively, the loadings over 0.483 were determined to be significant using the Burt-Banks (1947) formula, recommended by Child (1990, 110). As for Betty, Karan's elements and constructs with highest loading in each component were represented on separate axes of the graphs (Graph 4.4a and Graph 4.5a, respectively).

Table 4.11 Karan's Elements Principal Component Results (Rotation Method: Varimax)

Rotated Component Matrix [a]

	Component				
	1	2	3	4	5
e1 Read the lecture material	-.562	.310	.140	.682	.064
e2 partcipate in class discussions	.434	.388	.284	-.078	-.652
e3 Complete weekly reports	.237	.794	-.153	.076	.125
e4 Read online discussions	-.309	-.226	-.855	-.119	-.149
e5 Read during travel	.181	-.104	.005	.941	.103
e6 Access & download refernce material	.192	.397	.220	.015	.735
e7 Termly exams	.082	.544	-.194	.667	-.199
e8 Submit course work	-.101	.813	.268	.091	.045
e9 Active participation in group study (face to face)	.270	-.160	.866	-.137	-.069
e10 Informal interaction with lecturers (during fieldtrip)	.671	-.516	.297	.250	.089
e11 Feildwork (practical aspect of learning & not assessed)	.852	.113	.351	-.102	.134
12 Learning from classmates	.909	.196	.121	.012	-.016
e13 Not get timely feedback from my teachers	-.764	-.018	-.414	-.313	.264

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 8 iterations.

Table 4.12 Karan's Constructs Principal Component Results (Rotation Method: Varimax)

Rotated Component Matrix [a]

	Component			
	1	2	3	4
pc1aOnline	.411	-.572	.027	.503
pc2aSelf learning	.626	.149	.470	.383
pc3aPre-defined by lecturers	.061	.029	.050	.938
pc4a Learn lesser	-.091	-.934	.015	-.190
pc5a More theory	.689	.143	.580	.137
pc6a Boring	.583	-.277	.555	.125
pc7a Views from one lecturer	-.063	-.072	.800	.018
pc8a More time consuming	.181	-.150	.773	-.005
pc9a First in my priority	.397	.694	-.134	.238
pc10a More useful for my learning skills & future career	-.215	.889	-.184	-.075
pc11a More motivating	-.338	.764	-.026	-.404
pc12a Following course routine	.750	.175	.129	.445
pc13a Not so updated	.802	-.390	.158	-.141
pc14a Theory work (routine)	.954	-.112	-.074	.075

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

4.4.2 c Labelling key learning dimensions

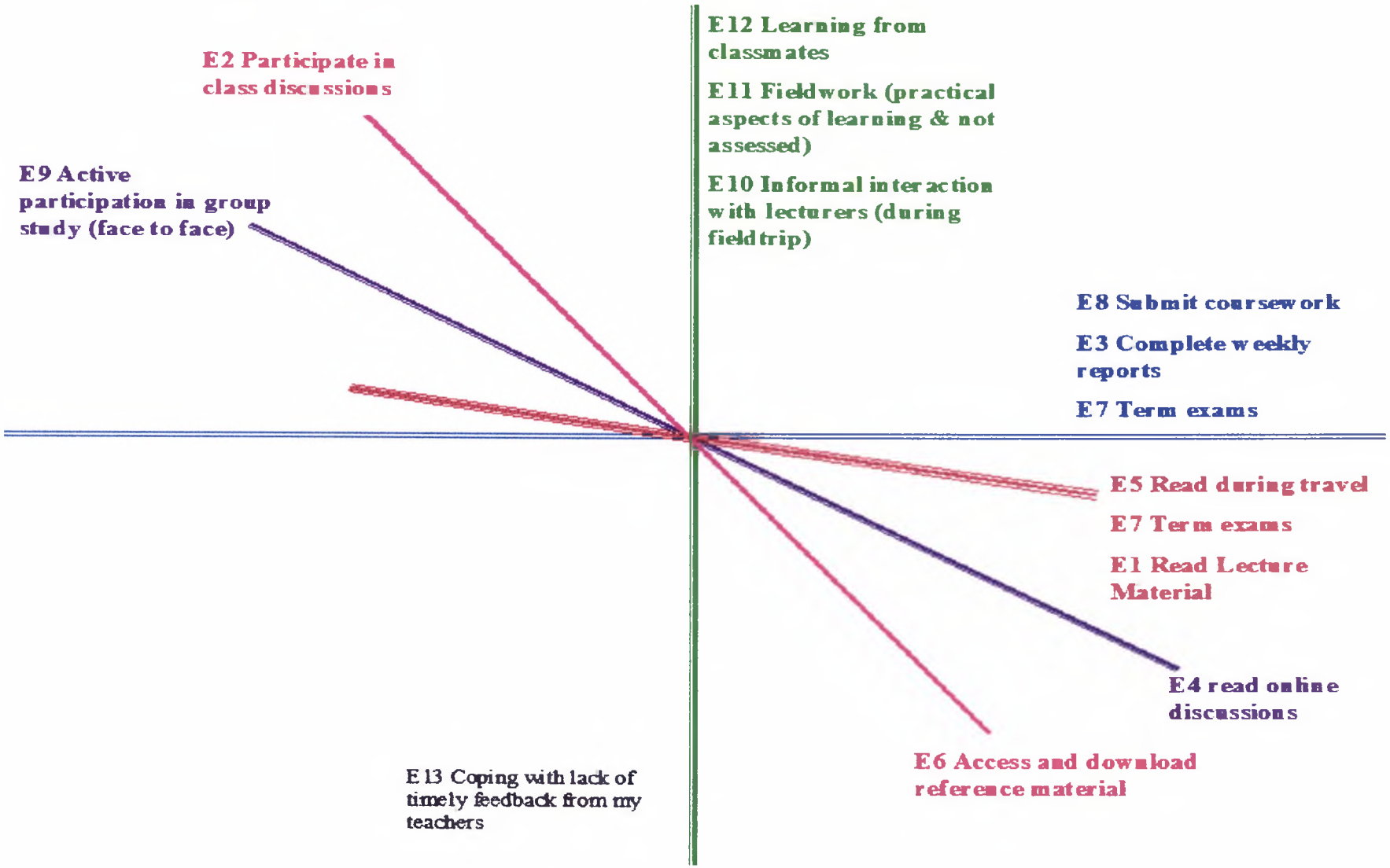
Labelling elements: Karan's label for the first component (green axis in Graph 4.4a) was *"feeling free and confident to express myself" (Karan Int 2)*. The elements at the top end of the axis, E12 learning from classmates, E11 Fieldwork (practical aspects of learning and not assessed), E10 Informal interaction with lecturers (during fieldtrip), made him to feel free and confident to discuss and communicate for his learning. The informality of the face-to-face interactions also ensured he received some form of feedback, which boosted his confidence.

He explained (E13) coping with not getting timely feedback from my teachers was negatively correlated to these elements because he did not receive feedback for the online messages he sent to his tutors. The later was an issue for his learning because it affected his confidence to communicate with the tutors whom he saw as experts. He

took great care preparing his online messages and as an overseas learner wanted to ensure that he conformed to the expectations of academic English usage.

> *"Because I mean, frankly, before I say something I always think about twice, thrice, what is going to be the fact of what I am going to tell them. Because they are PhDs and so, then kind of thinking that if I put like this way, because you know the thing is that because I am international student, I just came over here eight months ago. Initially I don't know how to interact with them, the communication they use, so sometimes, because the language we use in India and over here, both are very different. Even common terms we need talk with them its also very different. So that also hinders me to talk with them freely. If I am not getting feedback then its difficult for me to interact with them, because of this particular reason may be what do they think about that, why they haven't (given) feedback, why they haven't replied (to) me. May be my language I use may be quite difficult, or something they may find wrong, so they don't think they are going to reply for that. So lot of points, a lot of thoughts are going in my mind. This affects my studies, which is why these (elements) are totally related" (Karan Int 2)*

For Karan two-way communication was important to feel part of the learning community. Interactions with others in informal situations allowed him to freely express himself in English. His feelings of inadequacy about the English language meant he needed encouragement to build personal confidence in written English. When he did not get a reply from the course tutors, the lack of feedback dwindled his confidence. His lack of online writing confidence made him feel less free to express his learning needs through the online forum.



Graph 4.4 a Graphical representation of the five principal components of Karan's elements with high loadings

When I asked about his previous communication experiences with tutors, Karan remarked the courses in India were offline and he felt freer to talk to his teachers.

> *"...over here (in the UK) it is quiet different you know. The kind of different language, the kind of sense of humour they use in language and communication. I can't use those things anyway. I sometimes don't understand. Initially when I came here, the total dialogues are different, so, not quite difficult to understand the lecture. But when they say something in between the lecture, kind of humour things or jokes some things. It is difficult to understand sometimes. Still I was smiling sometimes anyway."(Karan Int 2)*

Karan was trying to understand the cultural use of the English language and wanted to feel a part of his learning community. He was trying to fit in by laughing at the jokes he did not understand. Being part of a community was important for him. The lack of an online response made him *"feel like a fool" (Karan Int 2).*

The purple axis (Graph 4.4a) may represent a sub-dimension of this first dimension. The elements with the high loadings here were E9 active participation in group study (face-to-face) and E4 read online discussions. These elements were negatively correlated to each other, and were represented at the opposite ends of the axis. Here Karan emphasised his choice of face-to-face interactions and he prioritised these over reading and participating in online discussions, because he could not relate to the people online. In face-to-face communication he could see how others were feeling about what he said. He stated, it was

> *"...difficult to trust online discussion or online communication for transferring emotion or relationship." (Karan Int 2)*

Karan decided to call this dimension *"trust in discussions" (Karan Int 2).* He felt when he was looking for feedback he was also looking for others to trust him, and for him to trust others for the information they shared. Feeling part of the learning community also helped him to about feel in control over his learning situation. His face-to-face interactions helped gain some confidence in his English usage and to feel in control in his role in the classroom community. In contrast, in the online discussions he did not know others and felt ignored when he did not get a reply. Thus he chose not to rely on and trust online communication for his knowledge construction processes.

Karan labelled the second dimension (blue axis in Graph 4.4a) *"planning and prioritising my learning process" (Karan Int 2)*. The elements in this dimension, E8 submit coursework, E3 complete weekly reports, and E7 term exams, related to meeting the course requirements. These requirements helped Karan to structure his learning and identify priorities.

> *"Because to get more marks you have to care about everything. How you to construct the whole report, structure of the coursework, how you reference from other books, and those things are very important." (Karan Int 2)*

These priorities helped him feel in control of the learning process. The control and confidence in self-learning through these activities was reinforced due to the face-to-face tutor feedback. The latter also helped evaluate his personal comprehension and understanding. His confidence was undermined when he did not satisfy the critical writing requirements in the English language.

> *"I am loosing marks, even though I understand what I have learned. It is totally disappointing. I do think what they want here is your thoughts. It is a very good way, better than India. I need some kind of guidance for that, for my writing." (Karan Int 2)*

Critical writing at academic level was in contrast with the multiple-choice assessments Karan was used to in India. Along with the language usage, critical writing was also a conceptual shift in his way of thinking and expressing his personal knowledge.

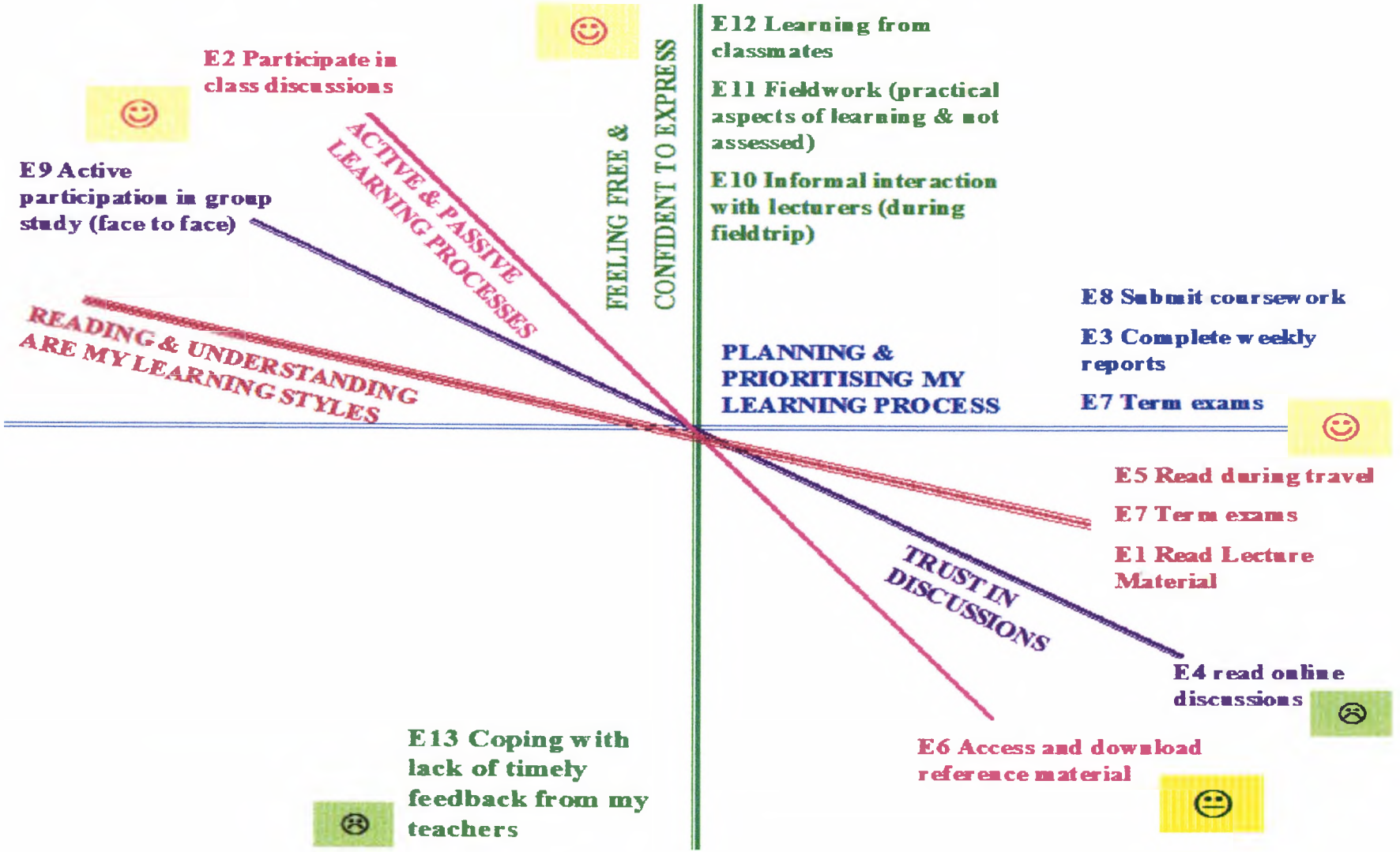
The third dimension (red axis in Graph 4.4a) was labelled *"reading & understanding are my learning styles" (Karan Int 2)*. Karan accommodated his reading, and read during travel to work. He felt more in control of his reading than the online social interactions. Reading allowed him to set the pace for processing new information in English. He began by going over everything once. Then he read again to comprehend what he understood and what he didn't. He read once again to understand what did not make sense or qualified it during the face-to-face discussions in class.

The fourth dimension (pink axis in Graph 4.4a) was labelled *"active and passive learning processes" (Karan Int 2)*. Karan reasoned that the two elements (E2

participate in class discussions and E6 access and download reference material) on this component were negatively correlated because when he was active in one he might be passive in the other. Karan had less control over what happened in the class discussions because these were negotiated, and depended on the tutor and other group members. In contrast, accessing reference material was a necessary, useful but a passive activity. If the class discussions were narrow, accessing and reading reference materials became an active learning process. He concluded that searching and reading were self-led activities, which gave him more control over the depth and process of knowledge construction than the class discussions. Graph 4.4b shows the final labels Karan used to explain the choice of his learning activities.

Like Betty, personal control was emerging as a recurrent construct influencing Karan's knowledge construction. His confidence in personal knowledge and language ability, built through personal and social interactions, was also an important construct affecting Karan's learning process. These two constructs, confidence and control, also led him to choose non-participation in online discussions. The labels given to the constructs principal components helped to understand the impact of control and confidence on his knowledge construction processes in depth.

Labelling constructs Graph 4.5a: The first construct component (green axis in Graph 4.5a) had high loadings for PC14 theory work/more understanding & practical, PC13 not so updated/more updated, PC12 following course routine/learning to apply to the real world, PC5 more theory/more practical, PC2 Self learning/group discussions, PC6a boring/more engaging. Karan labelled this axis *"theory and practice for learning" (Karan Int 2).*



Graph 4.4 b Karan's element dimension labels

For Karan understanding theory was about building a foundation. In his learning context, the application to practice could include group discussions and was engaging because it helped to share and visualise the theory, and explore its relevance in real life. Theory on its own was boring and incomplete without practice.

> *"Once you read you can apply to practice, it build(s) up your confidence. It is also the process, because it is the way you learn and this is theory, this is practical, and now I understand it more." (Karan Int 2)*

An understanding of how theory linked to practice was important for Karan to feel confident and sure about his comprehension of theory. The face-to-face group discussions and completing course assessments helped him to link theory and practice. This theory-practice link gave him greater control over analysis and synthesis and allowed him to deconstruct and reconstruct what he understood.

The second construct component (blue colour axis, Graph 4.5a) was labelled as *"drivers of learning" (Karan Int 2)*. The high loadings in this component included PC4 learned more/ learned lesser, PC11 more motivating/not so motivating, PC10 more useful for my learning skills and future career/not useful for me, PC9 First in my priority/last in my priority, PC1 Face-to-face/online.

Karan felt communication and explaining things to others were important drivers to process his knowledge and to understand things more clearly. Here, confidence surfaced again as an important construct influencing Karan's knowledge construction through communication with others. He preferred the face-to-face end of this component because he felt free to express himself and built confidence for learning. The online communication was not a priority because it depreciated his confidence. Karan was conscious of how he should present himself to others. The lack of online feedback from the tutors made him feel unsure what others might be thinking about his English usage or about the content of his online postings.

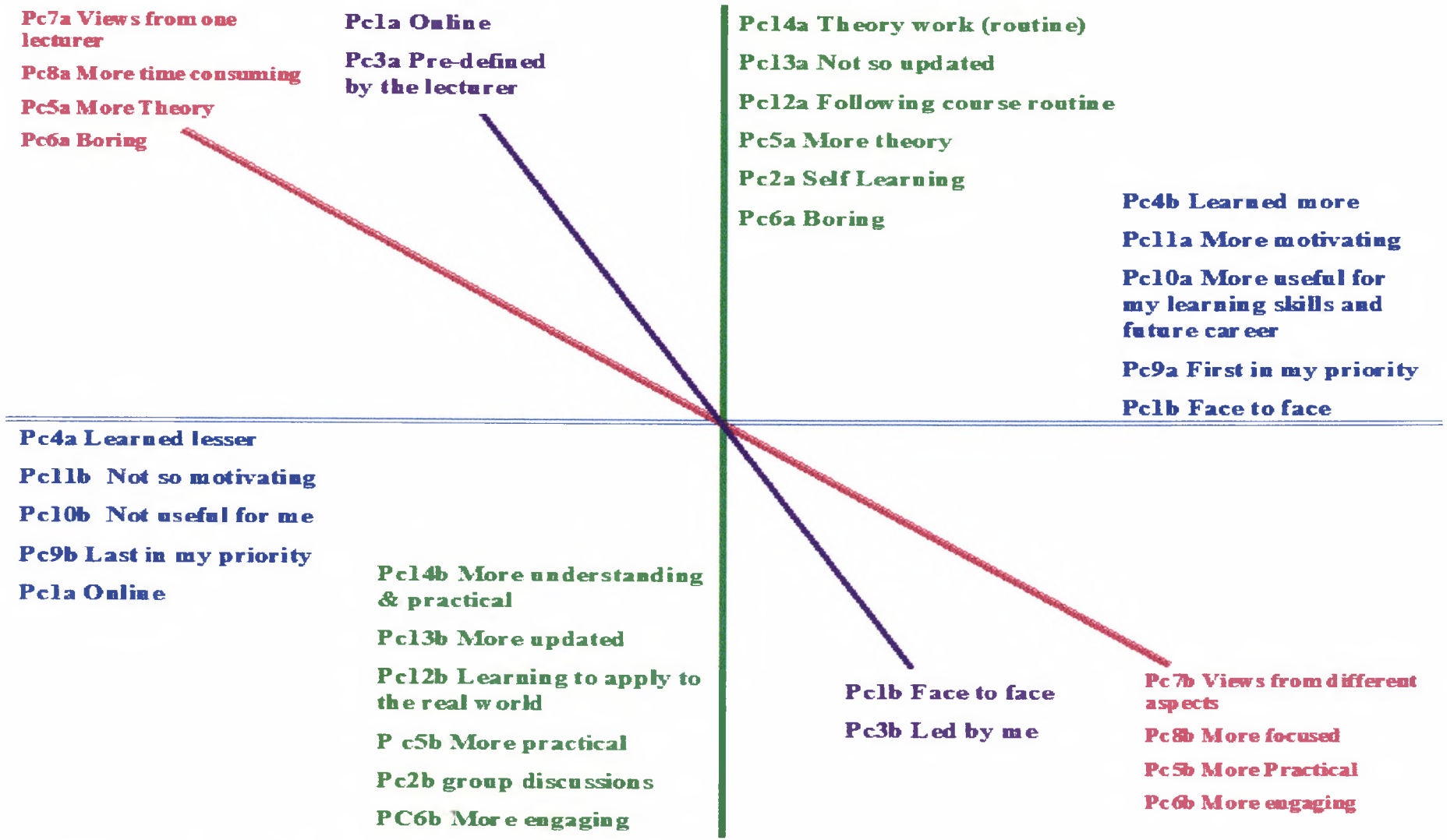
The third construct component (red axis in Graph 4.5a) included high loadings for PC7 views from one lecturer/ views from different aspects, PC8 more time consuming/more focused, PC5 more theory/more practical, PC6 boring/more

engaging. Karan labelled this component *"multiple view versus one view learning" (Karan Int 2).*

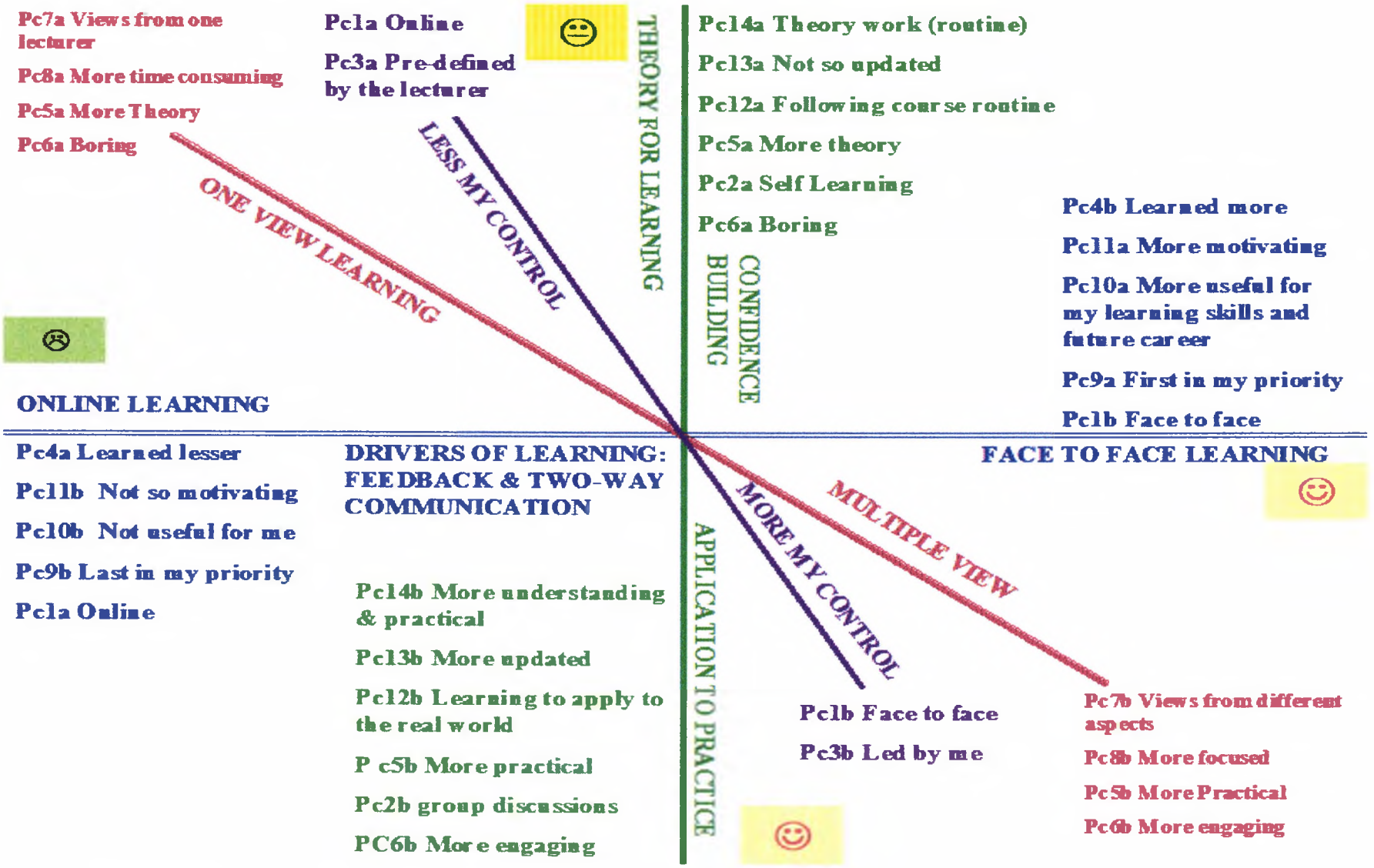
Karan preferred to learn through discussion and reading multiple perspectives. Such a learning scenario made him feel free and more engaged. The multiple views on a subject also meant there were many ways to understand something, there were opportunities to choose and focus on his areas of interest, and to develop a deeper understanding. The multiple views also provided him a way to validate and confirm his personal understanding about something he may have read in English, which was his third language. Access to multiple views increased freedom and control over the choice of resources, time and focus for his learning. In comparison, learning from one view meant limited choice and reliance on one person's way of explaining things. He identified that learning in a lecture dominated by one tutor's view was restrictive, boring and poor use of his time.

The fourth construct component (purple axis in Graph 4.5a) was labelled *"less control vs. more control over my learning" (Karan Int 2).* In effect this component summed up the other labels. Karan saw himself as a central driver of his learning.

> *"I always like to drive and dominate the idea. I always try to learn. So if some question is driven by me, if the answer is going to come its more important for me and I am going to understand it more. If it is driven by lecturer for example if they deliver the lecture only, then you only see what is given by the lecturer." (Karan Int2)*



Graph 4.5 a Graphical representations of the four principal components of Karan's constructs with high loadings



Graph 4.5 b Karan's construct dimension labels

Karan identified time as an implicit construct in this control dimension. In his experience the tutors controlled the time for online discussions. The tutors decided when to put up the weekly learning materials, references and online activities. The tutors also decided whether or not to reply to his online messages. On the other hand, Karan could exercise more control in the face-to-face situation by posing questions to the tutors and peer in and outside the class with an ensured and prompt response. He was also in control of the learning and reference material once he had downloaded it from the VLE and could chose to read it at his own convenience. Graph 4.5b gives Karan's labels for his personal constructs.

4.4.2 d Confirmation of Karan's outlook

The relationships between Karan's elements and personal constructs were presented on the third graph (Graph 4.6a). Karan was asked to consider each element and agree or disagree with their positioning in this graph. He identified the cluster of elements in the top-right quadrant as the theory-learning activities that formed the basis of his understanding. He had lesser control at this stage of the learning process because he was not yet confident about his comprehension of the learning material. Yet he identified some control because he paced and directed his reading. He chose to re-read or go deeper into the areas that interested him most. The course assessments and requirements encapsulated in the elements E3 and E5 were set by external control but they also helped him to control his learning pace by prioritising and planning for his learning.

The bottom-right quadrant included elements of social learning, where he was able to freely discuss his comprehension of the reading material. The informality of face-to-face interactions and the visualisation of theory into practice were important for his learning engagement. He identified that this was where most of his learning happened. The face-to-face social learning processes allowed him greater control over learning, by providing him space to validate his understanding and build confidence to incorporate information as personal knowledge.

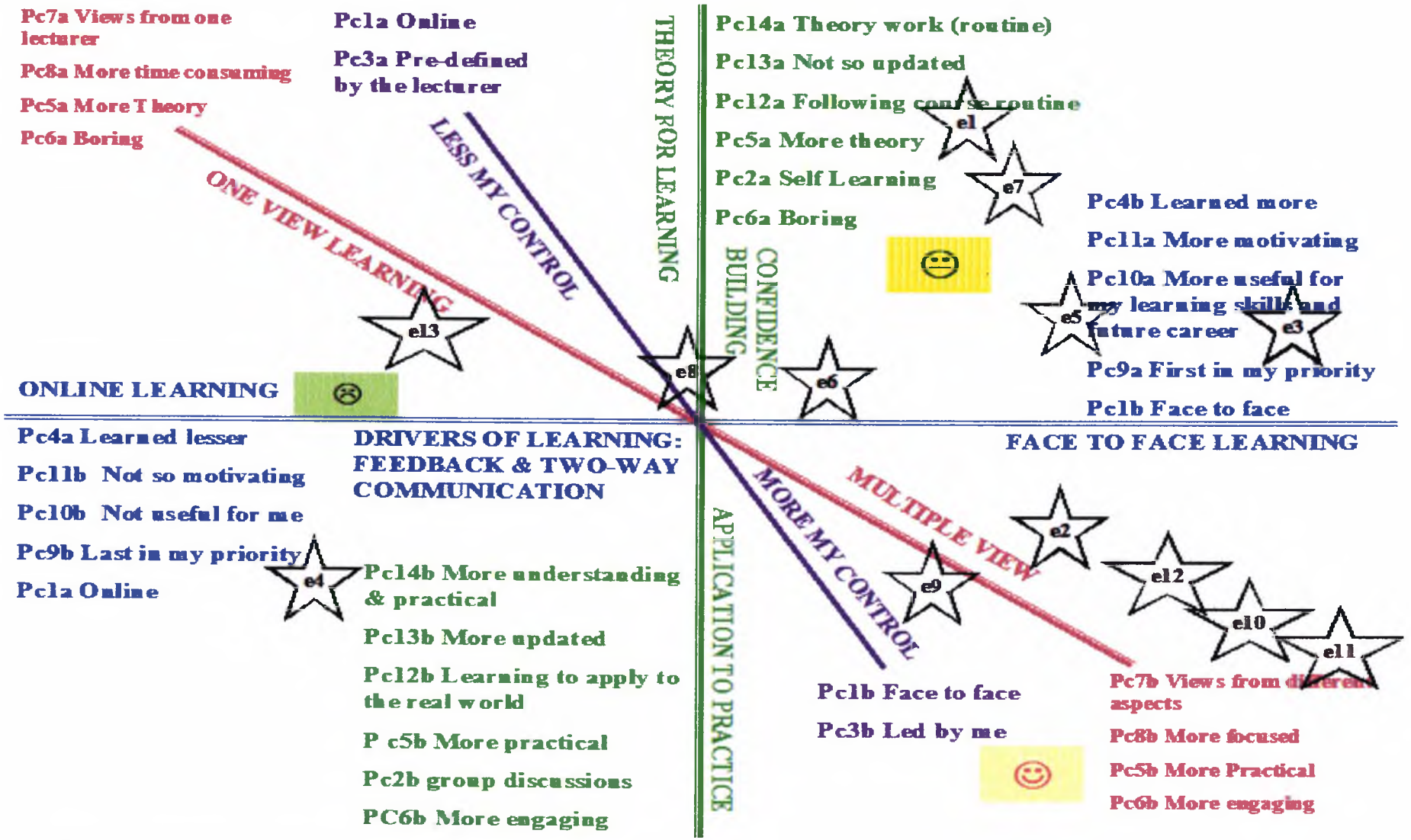
The elements E13 (coping with lack of online feedback from tutors) and E4 (reading online discussions) were not included in these clusters because they did not facilitate Karan's main knowledge construction processes. The one-way online conversations

and the lack of timely feedback from tutors further reduced control and confidence, thus resulting in choosing silence in online discussions.

Near the end of the second interview Karan suggested that he would reconsider participation in online discussions during the dissertation writing when he was going to be spending a lot of time alone. During this stage he would have limited face-to-face contact with his colleagues and he might benefit from linking up with the distance learners who may be working on similar topics. However his persistence in using the online discussions would be successful only if he could get involved in a two-way conversation, and feel confident and in control over his written English.

The final re-construction of Karan's learning was represented in Figure 4.2. In this Figure the circles describe his learning activities and the arrow links demonstrate how the different learning activities helped him to process information and construct meaning.

The main constructs for Karan were confidence and control. In Kelly's (1970, 1991) terms these were the main lenses through which Karan made sense of his learning world. In order to be satisfied with his learning he needed to feel confident about what he understood and claimed as personal knowledge. He chose self-led and face-to-face discussions to gain multiple perspectives and expand comprehension of his new knowledge. These two processes allowed him to feel free to question and build confidence in his developing knowledge. Although he sought others' views and feedback to build his confidence, he felt the need to be in control of his learning. He maintained control by adapting, self-pacing and prioritising his learning activities. The access to multiple views helped him to gain control, as it enabled him to choose the focus for his learning. The learning experiences including the lack of replies to the online messages depreciated his confidence, led to reduced control and were unproductive for knowledge construction.



Graph 4.6 Plot of Karan's elements around his construct dimensions

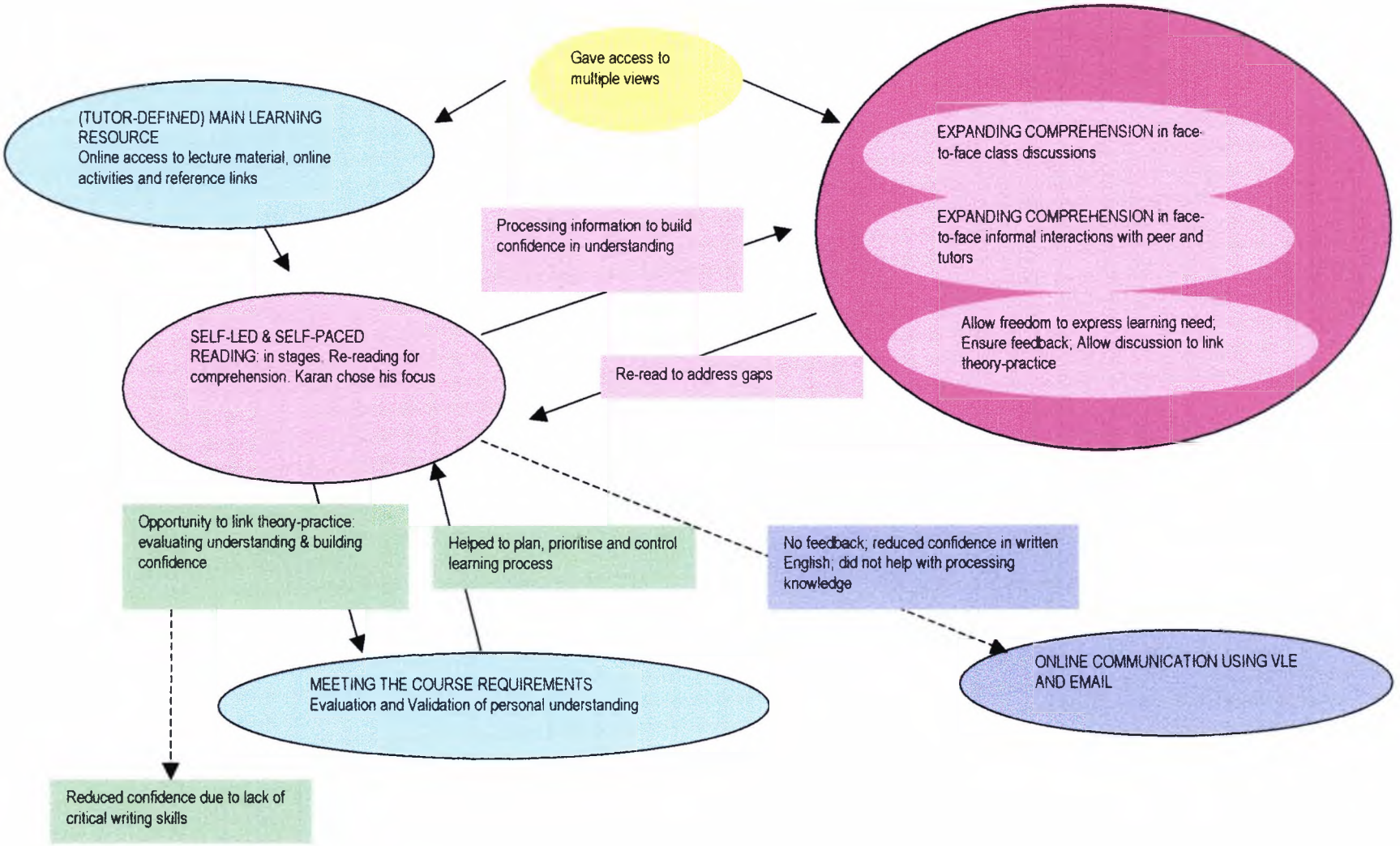


Figure 4.2 Metaphoric representation of Karan's knowledge construction processes

4.4.3 Comparing Betty's and Karan's ways of knowing

After the Repertory Grid analysis for each learner was complete, it was possible to compare and contrast knowledge construction process and issues that affected their participation in online discussions. Karan's context, background and learning processes were very different from Betty's. There were some context factors such as being an overseas versus home learner, and the ease of IT access that led to differences in online discussion participation for Karan and Betty.

Betty described herself as an active discussion participants and Karan stated he was silent in online discussions. However, their Repertory Grids analysis revealed similarities in their main personal constructs. Their learning construction processes also showed how they both actively involved others in their learning. Thus labelling Betty as an active learner and Karan as a silent learner would be inaccurate and misleading.

The Repertory Grid analyses showed that social learning was as much an important part of knowledge construction for Karan as it was for Betty. Betty preferred to bounce ideas with others she could trust and then used her own control to select and accept the new forming knowledge. She was able to participate in sharing of ideas online because she spent time on getting to know people through personal contact in her blended learning course. She identified people she could trust and their way of working, to share her work and learn from their perspectives. Although she felt social learning was important for completing her knowledge construction cycle, she also stated that she was never the first one to participate in online discussions. She maintained internal control by starting out as a silent observer of the group, and gaining control as she got to know people.

Karan demonstrated comparable care when identifying his social learning space. He did this by presenting himself as part of the community despite his lack of language confidence and cultural understandings. The face-to-face class environment allowed him to do present this social identity more positively than the online environment.

Although Betty was an active online participant and Karan was a silent and occasional reader of online discussions, both used others to develop personal meaning. For Betty, the lack of trust in her initial ideas encouraged sharing thoughts with others whom she could trust. Likewise for Karan, processing information with others he felt free to communicate with helped to build confidence in his own understanding. This commonality existed despite their contextual and subject differences. Betty and Karan showed similarity in their deliberations to interact with others based on how they perceived others social qualities. They placed importance on interpersonal relationships and trust in others build through two-way interactions. Their grid analyses surfaced the significance of positive social identities in the online social space that affected their online participation.

Betty and Karan's knowledge construction processes were also influenced by the common desire for control and choose their individual and social learning activities. If the learning experiences that decreased confidence, or involved others who they did not trust, then they experienced reduced control over that learning activity. This construct of control also defined their attitude towards participation in the formal online course discussions.

Betty felt she was more in control if she could chose when to share her final knowledge product with the tutor and others she did not have a trusting relationship with. Using the online discussions for knowledge construction meant less control because her tutors and unknown others would be able to see her unfinished learning thoughts. She felt more in control in informal online discussions with colleagues she had built a trusting relationship with.

Likewise, Karan also felt participation in the formal online course discussions reduced his control and made him feel less free to express himself. He came to this conclusion when he did not get a reply or feedback to his discussion postings and email messages sent to the tutors. He felt very self-conscious in communicating by writing because English was his third language. The lack of feedback led him to think his message may not be comprehensible, and reduced his confidence in using online communication. Like Betty, he felt freer to express himself in informal discussions

with his peers and tutors. However, unlike Betty he preferred the discussions to be mainly face-to-face.

The Repertory Grid analysis and the qualitative analysis allowed a systematic appraisal of individual and social learning processes for all the twenty-nine participants. The process helped to identify the main themes that may have implications for online learning course design. The next two chapters report on the qualitative analysis of the elements, personal constructs and the interview data for all the participants.

4.5 Conclusion

This chapter has introduced the research participants and the Repertory Grid analyses for two participants. The initial part of the chapter has identified the sample characteristics and analysis results that revealed adult professional postgraduate learners in this study desired control over their learning processes. While some adult learners indicated that joining a course was a way of increasing personal control by increasing career options, others identified a loss of control due to the formal course requirements. The adult (younger and older) participants also identified joining the postgraduate courses reduced control because it required them to adapt to new ways of knowing, than they were used to in their undergraduate years. The participants identified the necessity to be able to decide when and when not to engage in social learning including online discussions. This discussion raised the question if the online and blended courses that predefine learning materials and learning activities including the online discussion participation were inhibiting this control, aspired by the professional postgraduate learners in this research.

The chapter has introduced the use of the labels, active, moderate, and silent learners in this research. It critiqued the limitations of labelling learners according to the level of online discussion participation and identified these labels may ignore the other online and offline ways of knowing. The second part of the chapter confirms this argument that labelling learners in this way is inaccurate and misleading.

The second part of the chapter has demonstrated how the Repertory Grid analysis helped to develop an in-depth understanding of knowledge construction processes for two learners. The step-by-step analysis of the element and construct components enabled the learners to explore the relationships between their learning activities and personal constructs. The process allowed the participant to re-conceptualise their learning activities and to be actively involved in the preliminary research analysis. The resulting evidence clearly demonstrated the limitations in labelling these two participants as either silent or active, because they were both engaged in different forms of social constructions, which were apart from formal online course discussions visible to the tutor.

The discussion has also shown how the combination of quantitative, graphical and metaphorical representations was used to surface the subtle and more obvious differences between the two learners. The analyses have aided in surfacing the main construct or lenses with which Betty and Karan made sense of their learning worlds. These were identified as control and trust for Betty and control and confidence for Karan. The trust and confidence constructs for these participants relate to the underlying feelings and emotions during their individual and social engagements. These constructs were particularly useful and revealing to understand the reasons for different levels of online discussion participation.

The following two chapters continue reporting the analysis results. The results in the next chapter show that Betty and Karan were not alone in reconstructing control and emotion-related constructs. A complete analysis of all twenty-nine participants also demonstrated personal control and emotions as the two main constructs. These constructs influenced the different learners knowledge construction processes, and also helped to understand the reasons for differences in their online discussion participation.

Chapter 5

Individual and Social Construction of Knowledge

"Nature has not only forced man into society by diversity of wants which the reciprocal aid of each other can supply, but she has implanted in him a system of social affections which, though not necessary to his existence, are essential to his happiness." (Rights of Man, Thomas Paine 1915)

In the above statement Thomas Paine identifies the reciprocal relationship between the individual and the society. He highlights positive emotions of social affection and happiness that represent a link between the individual and the social aspects. This quote has resonance with what emerged in the research analysis. The positive emotions and personal control emerged as the significant constructs for active, moderate and silent participants' knowledge construction. Learning alone and learning with others were strongly influenced by emotions and personal control, which affected participants' engagement in online discussions as part of their meaning making process.

The comparative analysis between the participants' data surfaced three main facets for knowledge construction for online and blended learning. These were

- Individual and social construction of knowledge
- Online social identity construction
- Practical and technology issues

These facets illustrated the significance of emotions and personal control for all participants during their online and blended courses. The facets were not independent of each other because they were drawn from the same twenty-nine participants' learning representations. They were in fact interrelated dimensions within active, moderate and silent learners' psychological representations (as concluded in chapter seven). Together these facets reveal the results that addressed the research questions posed in chapter two.

The present chapter focuses on the analysis results for the individual and social construction facet. It helps to answer the first three research questions and reveals how the different learners engaged in online and blended learning. The analysis

concluded that all participants used individual and social learning activities to define their personal learning goals and to establish control over their knowledge construction. The analysis showed there were differences and similarities in how learners engaged in these individual and social learning activities, and what gave them most control. Nevertheless these differences and similarities did not result in neat classification of learners as active, moderate and silent.

The early part of the chapter reports on the individual ways of knowing, including searching online resources and reading. This follows the differences and similarities in social learning activities. It evidences the participants' engagement in online, offline, and informal discursive activities according to what gave them most control over their learning processes. The discussion uses exemplars from the research data to highlight cases where the participants experienced lesser or greater control during the online and offline individual and social learning.

It needs to be noted that although individual and social activities are discussed under separate headings, there were significant overlaps in their analysis. These activities were not independent of each other because they were alternate or overlapping parts of the participants' knowledge construction cycles.

The individual and social activities analysis results also added to the evidence that silent participants were engaged in social interaction and knowledge construction. The discussion of the silent learners knowledge construction challenges the suggestion that silent learners were not learning.

One similarity between all participants was that they construed significance of personal control and positive emotions for knowledge construction, including during participation in online discussions. This similarity was bound with complex differences in individual ways of knowing. The latter section of the chapter reports on personal construct analysis results that revealed four different ways of knowledge construction. The differences in how participants combined the individual and social ways of knowing and the associated emotional responses and personal control helped to explain why some participants engaged in online discussions for learning construction while others did not.

Each of the four categories is explained using figurative representations of the learning processes. Miles and Huberman (1994, 10) recommend such representations in qualitative research to give an overview of the most recent state of the data. The figures and explanation in these sections are not intended to classify or label the participants' ways of knowing, but are used as deconstructing tools to understand and interpret their learning processes. These aids help to draw out deeper contextual and comparative meanings between the participants' constructions.

The final part of the chapter is a discussion of the two common personal constructs or 'super' constructs, i.e. emotions and personal control. These super constructs may be described as the principal metaphoric lenses or viewing glasses through which active, moderate and silent participants theorised and visualised the world around them (Kelly 1991). The analysis concluded that the super constructs emotions and personal control helped to look into and understand the different learning worlds construed by the participants. These super constructs did not mean the participants experienced the online discussions in the same way. Instead, it showed that they used their personal control and emotional responses to make meaning from their varied online and blended experiences. The two main constructs also provided lenses into the reasons why some participants engaged in online discussions more than others, a theme extended in the next chapter.

5.1 Learning activity analysis

Within the constructivist worldview how people experience the world is intertwined with the theories and worldviews they hold. These theories or models that people construct are continuously shifting and changing as they encounter new experiences. Therefore to understand the differences in knowledge construction it is useful to begin by considering the actual learning experiences and activities the research participants engaged in during their formal online and blended courses.

The twenty-nine participants described a total of 346 online and offline learning activities to help them learn during their online and blended courses. Table 5.1

(Appendix VI) lists the elements elicited by each participant. How each element was used to construct meaning depended on the participants' learning preferences, context and course requirements. The bipolar personal constructs elicited by the twenty-nine participants are listed in Table 5.2 (Appendix VII).

The elements listed by each participant depended on their personal perceptions of their learning activities during the online and blended learning courses. An initial impression of this list suggested a range of individual and social learning activities, and professional activities to link theory to practice. However, the element labels or the number of elements given in a list did not give a complete impression of all the learning activities for each participant. For example, all participants did not list reading as an element, but the interviews revealed it was a necessary element for all the participants' knowledge construction. As the interviews progressed the participants discussed additional learning activities that they considered to be implicit in the element lists.

The qualitative grounded coding of elements and constructs led to the classification of elements into individual and social learning activities, self-led and tutor-defined, and activities related to practical or applied learning. The individual learning elements that described learning alone were the common for all (active, moderate and silent) participants. The social learning elements were categorised to represent the activities involving others in processing learning and knowledge construction. Twenty-seven participants listed more than four elements that involved others in their learning processes. This also included the silent participants who did not actively engage with online discussions. The remaining two participants described themselves as silent readers of others discussions and listed social discussions at work as one of the elements.

5.1.1 Individual knowledge construction

All participants cited the individual learning activities including searching and selecting online resources, and reading as significant for instigation and engagement in knowledge construction. The participants stated they prioritised individual learning activities due to the sense of control associated with defining and focusing on

personal learning goals. Those engaging in social learning used these activities also as precursors to discussions, to be sure of their personal knowledge before the social interaction. However, there were differences in how participants experienced this control, and how they used the individual learning activities as part of their knowledge construction processes.

The self-led searching of online learning resources was one of the priority activities for all participants. It helped the participants to gain control by defining learning boundaries and building a foundation for personal knowledge. It also helped to gain access to multiple perspectives to comprehend and analyse similar and different ideas. The multiple perspectives enhanced control for active, moderate and silent participants through facilitation of free deconstruction and evaluation of the different viewpoints without having the limitations of giving explanations to others.

Searching resources provoked by information shared in online discussions was also used to check others viewpoints', thus controlling what was accepted as personal knowledge. For the participants who preferred social engagement (social learners), this confirmation was part of building trust in others as valid sources of knowledge. The participants who preferred to learn alone (individual learners), this confirmation helped to explore a topic using the social structures including the online databases and course discussion boards, without actively pursuing online relationship formation. Thus searching online helped the individual and social learners gain control over the shared constructions, while enabling individual learners to be self-reliant and social learners to build trust for online discussion engagement.

Reading was another priority learning activity for all participants. The analysis of the reading activity suggested that it involved a conscious interaction with the text that provoked chatter in one's head. This self-talk comprised of construction and negotiation of meanings. There were participants who desired sharing these self-constructions with others, to engage in deconstruction and negotiation of meaning, more than others. How reading was constructed as part of the knowledge construction cycle depended on the participants' perception of personal control during the individual and social learning activities.

The participants who preferred to learn alone described reading as a natural and main part of their learning cycle. Reading allowed these learners to control their learning focus, in contrast with discussions with others where they could be distracted from their goals. There were others who felt reading was an important part of their learning. They also identified the usefulness of discussion with others to deconstruct personal and others views, if the opportunities permitted this. There was yet another group of learners who found isolated individual reading uncomfortable and incomplete. They felt less control over their comprehension unless they discussed their reading with others. However it was notable that these differences in the reading activity did not automatically lead participants who preferred social learning to take active part in the online discussions. The reasons for non-participation in online discussions for social and individual learners became clearer during the social activity and personal construct analysis reported in the latter sections.

The above differences in reading included the home and overseas learners. However, comparative analysis of the reading activity between home learners and overseas learners for whom English was a second or third language, identified differences in their comprehension and meaning construction. The overseas learners commonly stated their slowness in reading and writing in English as one of the reasons for not engaging in online discussions. The analysis showed that the overseas learners might be at a disadvantage due to their slower speed of reading in English, and also due to the need to translate the material to engage and deconstruct meaning.

The following subsections provide examples form the research data to evidence of the differences and similarities in searching resources and reading for knowledge construction.

5.1.1 a Searching resources to define learning boundaries

Searching and selecting online resources was commonly construed as beneficial due to the convenience and opportunity to look beyond the pre-configured tutor-defined subject matter. The broader view of the subject matter helped the participants to locate the learning resources that related to their professional and social realities. The participants also used the process of searching to define personal interests and set individual learning boundaries.

"I am trying to get information, appropriate information, suitable and relevant information for the assignment. Not jargon or something unnecessary so I can filter what's right and what's wrong. By going online and use discussions to see whether this is the correct one. Also is it relevant to me, to my work? Is it something I can learn from? You know." (Jaya Int 2)

For the professional learners, who were in full-time employment during their courses, these boundaries were influenced by the social construction of their professional realities. Their professional roles and learning needs were important in making choices and taking control of their learning processes.

5.1.1 b Searching for multiple perspectives

The Internet searches provided access to the multiple perspectives useful for widening the participants' learning scope, and encouraged critical thinking. The participants identified the importance of searches to look for additional visual and textual resources to aid their preferred learning styles. The analysis showed that the multiple perspectives and different types of learning resources enabled the participants to have a greater choice and control over their learning processes. In the statement below Carl (active), an online tutor-learner stated using these multiple perspectives helped him to engage in critical thinking, without limiting these perspectives through verbalisation or writing in discussions.

"In the individual learning I can take part in internal dialogue. I can draw up my history, my experiences, references, advise very easily that kind of thing. So my thinking process can reflect upon ten things at once. Whereas if I want to interact with another individual in a learning group say, then its very hard for me to explain those 10 very individual justifications, sources or influences. So what tends to happen is you make very specific statements." (Carl Int 1)

There were participants who identified others views as adding a multiple perspective to their learning. The above quote by Carl reflected his experience of the limitations imposed on his critical thinking during social learning as compared to individual learning. Although he was an active online participant, he felt more control when he engaged in individual identification and judgement of the resources to broaden his learning repertoire.

The overseas participants for whom English was not their first language also used the multiple perspectives to comprehend meaning using the online resources written or presented in different ways. The access to different online resources explaining the same thing in different ways helped to increase their control over comprehension in a second language.

> *"As I said, always when you have views from different lecturers and different materials it is quiet interesting because you can view the things from different angles. So it helps the understanding more. Style of different lectures is very different, or some implied meaning, are implied in some lectures, but other lecturers explain them more explicitly then you learn more from that. So this (searching is) more focused and you look at broad relationship and you can go deep in the study. Where as if you have only one lecturer or one dominate view of the lecturer, then you only know how one person thinks and exactly how they present things, and in the world we are totally forced to learn that only. But it is more free with different views. But it is less free and time consuming with one lecturer only, with dominant view." (Karan Int 2) (silent)*

The above statement resonated construction of the other overseas participants, who also found one source insufficient or limiting for a complete comprehension in English. The overseas participants cited searching online for multiple resources as important for accessing different views to understand and make meaning.

The silent, moderate and active participants searched and accessed the multiple resources in the online contexts. These online contexts and the resources represented socially constructed structures, and socially developed meanings and viewpoints. Thus, it is arguable that learning using these resources was socially influenced. Their engagement using socially constructed multiple resources may have facilitated social construction of knowledge for the active, moderate and silent participants.

It was interesting to note that in the above two quotes, the active and silent participants cited individual engagement using multiple perspectives as more effective for social construction, than social engagement when others were present (online or offline). The presence of others could limit the control these participants felt over the deconstruction of multiple views. Both the participants felt more control during their

individual, broad and freer social construction of knowledge through multiple learning resources.

This suggestion of individual social constructions proposes that the silent learners, who did not participate in online or offline discussions, could be engaged in social construction of meaning. Although these participants were engaged in individual learning activities, they were using questioning and learning from resources that were socially constructed and represented socially influenced ideas and thoughts. This analysis also suggested that control might be an important aspect of learning that affected the choice of learning activities. The importance of personal control during learning was confirmed throughout the research analysis.

5.1.1 c Searching to confirm shared constructions

The participants identified searching online useful to engage in critical thinking after reading others online discussion messages. All participants (active, moderate and silent), who read others online discussions, identified the need to question others perspectives before accepting them as personal knowledge. They carried out additional searches to critically question these perspectives during social construction. This is where the active and silent participants differed. For the active online discussion participants like Betty (Chapter Four) this checking of others knowledge helped to build trusting relationships with others in the online discussion space. Thus, checking others knowledge through online searching was her way of controlling and managing trust for online learning relationships.

The silent participants also accessed additional online resources to question the information gained from online discussions. However, unlike the active participants, they did not use this checking of others knowledge to build trust for online relationships.

> *"You know sometimes you read email and discussions, sometimes you can get an answer from the discussions. Sometimes they say something and you can't get an answer. Then through this (online databases) instantly you get an answer. If the answer you get is not giving you the explanation you want then you can click on a different website and that will give you a different explanation. You don't have to*

ask on the discussion board. You can in the search and its better and instant." (Jaya Int 1) (silent)

The searching and selecting of online resources represented the silent participants self-reliance and internal control over learning. Yet learning from others constructions in online discussions also enabled these silent learners to socially construct meaning, without engaging in further dialogue.

5.1.1 d Reading for individual learners

The participants, who preferred to learn alone, perceived reading as the principal learning process for their knowledge construction. This group included the moderate and silent, older and younger learners. They preferred self-reliance and desired control over their learning processes and outcomes. Reading allowed space to spread their thinking and was perceived as active engagement in learning. The reading activity was in these participants' control and gave them freedom to construct meaning without external distractions, external pressures of time and worries for self-presentation in a discussion context.

Ellen (silent), who was a trainee postgraduate nurse, identified reading as central to her analysing and conceptualising for learning. Reading was the principal and major part of her knowledge construction cycle. She described,

"I'll print them (articles) off. Sometimes I will just save them on to disk and look at them look at them on the computer. And other times I just jot things down on paper. (Laughs)... Then I read through it all... I pick up the stuff that I need. It has to go all on my word document on my own database that I have designed... I read through it and look at what I have got, see what all fits together. I put (it) into sections and start to make sense of it and that." (Ellen Int 1)

Ellen described reading as a methodical deconstruction of information through critical analysis, followed by categorisation and synthesis of new personal knowledge. She felt complete in control over her knowledge construction processes during reading. This was in contrast with the social sharing in face-to-face or online discussions, which she found interesting but she was not clear how it helped her learning. She stated she felt lesser control over the face-to-face discussions because they often digressed and distracted her from her goal. The online discussions were situated

completely outside her knowledge construction space, where she exercised greater control by limiting sharing of the completed learning products.

5.1.1 e Reading for social-individual learners

There were other active, moderate and silent participants who identified reading as important yet complementary to the social learning approaches. As for Betty (active) and Karan (silent) in the previous chapter, the participants in this group viewed reading as an important and comfortable way to learn, but described it only as a constituent of their overall knowledge construction cycle. They were different from the individual learners (in the previous subsection) because they did not rely on reading as the sole knowledge construction process. They did however regard reading as an active engagement in learning. Reading allowed them to engage in critical reflection and reconstruction in light of their personal experiences. It was complemented with other ways of engagement that involved others as part of the reconstruction and reflection processes. Their complementary social engagement processes would lead to further reading, and increased control over knowledge construction processes and learning outcomes.

Rob (moderate) was a mature self-employed e-learning consultant. For him learning involved engaging with relevant the learning material to analyse and extract the main points. This followed discussion with others and more reading.

> *"From my point of view, I would look at it from the point of view of reading, thinking and doing my research first and then seeking other people's ideas. Or there is also the other point that, like a workshop like yesterday do (does) stimulate me to think about something and follow it up afterwards. So it's a two way process. I find learning totally in a group difficult. Because there is a time I want to stop, and go away and think about this, and let it sink and do the research, the follow up reading and so on. Reflection in other words, very much a reflective cycle." (Rob Int 2)*

The space and time to read after and before the learning discussions allowed him the opportunity control what he chose as personal knowledge. As a self-employed professional this control over reading and social engagement was significant for Rob's learning cycle.

In contrast with the individual learners, the participants in this group found the social discussions served as triggers rather than distractions and led to further reading. They felt they could control and chose what to take from the social interactions. Yet this suggestion did not lead all in this group to participate and gain from online discussions.

5.1.1 f Reading for social learners

In this research there were four participants (two active, one moderate and one silent) who identified learning alone through reading was less comfortable and harder than the practical and social learning elements. Yet again, the preference for social learning over individual reading did not always lead to active participation in online discussions.

Joan (active), who was a further education college trainer, felt reading and understanding on her own was important but *'a bit painful'* and *'exhausting' (Joan Int 1).*

> *"(During reading) to think what is this, how can I make it real for me and doing that in isolation I find that difficult. If I do it with other people, I find it infinitely more useful. Because they will post something up, and I think I thought it was far more complicated, and if she has put that, I actually think, Oh, I get it. Reading alone is painful, but online discussion is pleasurable." (Joan Int 1)*

Joan had always relied on social interactions for her learning. In parts of her online course, she felt out of control when she had to read in isolation without ongoing input from others. She constructed others input as the main aspect of her personal construction. Thus, reading only felt useful and realistic part of her developing knowledge only after she shared it with others or applied it in practice. Thus it was not surprising to note that Joan was a regular contributor to the online discussion board. The active online contribution was significant for Joan to feel in control of her preferred way of learning.

However, the discomfort of reading did not lead all social learners to react in this way. Shelly (moderate) who was another further education tutor, stated,

> *"May be because I am not a great (reader), I am not really.., reading is something that I do out of necessity. I am not a sort of person who reads a book... Workshops*

were quite interesting. You know because they were with other students. We were all there together. It was verbal. You could take part in discussions and listen to the presentations. I found that more stimulating than the actual reading and online logging on to the computer, taking part in discussions."

Although Shelly placed significance on social discourse to explore ideas and to confirm or validate her understanding, yet she did not find the online discussion experiences engaging. The latter section reports on the analysis results that identified the importance of emotions and personal control during online discussions that led to the above differences between Joan and Shelly.

5.1.1 g Reading for overseas learners

The overseas learners for whom English was not their first language, chose and desired to learn in English. However, their limited cognitive proficiency of the language resulted in slower reading and lesser confidence to participate in online discussions. The comparative analysis between the home and overseas learners suggested that learning in a second or third language was more time consuming and less effective for deeper engagement.

For the home participants, who used English as their main language, initial reading stage involved skimming, summarising and selecting the resources. This immediately proceeded to critical thinking through exploration and linking the main points with the course requirements and their professional practice. Their thoughts and cognition were in English language from the beginning of the reading process. This may be more efficient than the overseas learners comprehension that began in English, followed by deconstruction in their own language and then reconstruction in English.

According to Wittgenstein (1953) language and thought are not separated. Language itself is a vehicle of thought and is therefore central to all knowledge construction. The overseas participants, for whom English was not the first language, also echoed the issue of language related to cognition and knowledge construction. They identified the need to read more than once, to read more than one source, or to translate into their first language to comprehend meaning and engage at a deeper level.

Carmel stated that when she read something in English she made sense of it in her own language first. This enabled depth of engagement, before she reconstructed it in English.

> *"If you can do something in your own language you can go deeper and understand things better, but when you have to do something quick in English, you don't understand it, so it is not adding more to my learning"(Carmel Int1)*

The overseas participants had lesser cognitive control and confidence in reading and writing in a second language, which also limited their online discussion participation. The analysis concluded that the overseas learners, who expressed issues with knowledge construction in English, chose silence in online discussions. It is possible that language proficiency in reading and writing was a factor that affected their knowledge construction and inhibited them from sharing online.

The overseas participants experienced lesser control in contrast with the home learners due to the different construction processes during reading in the English language. The reliance on written English language in online discussions may raise issues of inequity for overseas learners. The aspect of language and language identity in online discussions is explored further in the next chapter.

Thus to summarise, the research participants used the individual learning activities in different ways to engage and construct meaning. They associated searching online resources and reading with personal control over their knowledge construction processes. All the participants identified importance of these activities but did not experience similar levels of control and benefit from them. In particular the analysis of reading in online and blended courses identified differences in knowledge construction preferences between the individual and social learners, and differences in experiences of the overseas versus home learners. These differences in the individual knowledge construction influenced online discussion participation, but did not lead to the conclusion that the silent, moderate and active participants had categorically different ways of knowing.

5.1.2 Social knowledge construction

The silent, moderate and active participants were engaged in formal (in the presence of the tutor and unknown others) and informal, online and offline social discussions related to theory and practice of learning. It is noteworthy that the participants who identified themselves as silent in online discussions also elicited social learning elements that actively involved others and assisted in social construction of meaning. Therefore, the tutor-monitored course online discussions were not the only approach to involve others in the knowledge construction processes. This adds to the evidence that silent participants were engaged in social activities where they shared social realities with others to reconstruct meaning.

As for the individual learning activities, involvement of others in knowledge construction cycles was also influenced by whether the social learning activities enabled the participants to feel a sense of personal control. The sense of control sort in social learning was different from individual learning. In social learning, the control was associated with the need for a personal link or a connection with others and knowledge of others. It also involved having some sense of ownership and control of the social discussion space. This sense of control influenced the participants' choice for online discussions.

For four active participants this control was established through online communication asynchronicity and time delays between sharing online and reading offline. These participants also felt a connection with others. They found the availability of the online discussion facility made learning more flexible and increased their personal control over their learning processes. In contrast, the remaining twenty-five active, moderate and silent participants did not believe their online discussion participation was always effective for deeper social engagement. They listed a variety of reasons for their dissatisfaction with the online discussions.

The learners who preferred to engage in social learning as part of their knowledge construction cycle identified the lack of social relationships and emotional connections in online discussions affected their confidence to openly express their views. The participants who expressed reduced control in online discussions also

compared them with the face-to-face discussions. This comparison by the different participants led to the conclusion that the lack of non-verbal cues in online spaces meant they could not see how others felt about their contributions. This reduced their feeling of control over two-way conversation.

The analysis highlighted the importance of feeling connected to others for social learning, and concluded the importance of face-to-face contact during an online course to build social relationships. All active (including those who felt control in online discussions), moderate and silent participants also reported using a variety of face-to-face and informal online and offline spaces that helped to build relationships and to engage in-depth discussions on chosen topics.

The participants also reported reduced personal control due to the formality of required online contributions in the presence of the tutor and unknown others. The analysis confirmed that a sense of ownership was important for a sense of control over the online discussion space. The tutors' requirements to participate and the potential of judgement by unknown others limited the learners' sense of ownership and personal control over the University-controlled online space. Overall, the participants construed greater personal control in informal social learning spaces in contrast with the VLE discussion boards, which were under the tutors' or the University's control.

The participants who were new to the profession said that participation in informal online and offline social engagement helped to share and make links between theory and practice. For the silent participants this included reading others online discussions and having informal face-to-face discussions with peers to link theory to practice. The social learning activities analysis concluded that online discussions couldn't be regarded as the only site for social construction in online and blended courses. The active, moderate and silent participants in this research identified benefits and limitations from online and face-to-face discussions. They ultimately chose the medium and social learning sites (work, informal, face-to-face or email discussions) that were relevant and helped them to feel in control over their individual and social construction processes. The following subsections evidence the differences in the personal control and emotional connection experienced by different learners during the different social construction activities.

5.1.2 a Active online discussion participation

The active discussion participants (n=4), who felt in control during the formal online discussions, used others perspectives to articulate personal understanding, to reflect, and engage in self-analysis between online messages. The online discussions became central for their knowledge construction cycles. Sam was one of these learners who felt sharing online helped to make theoretical reading more authentic and applicable to practice.

> *"Interactive learning online, it is important to get others perspective on your work, otherwise it does not make sense all the time. It is a part of learning I would prefer to be included."(Sam Int 2)*

These learners gained a sense of control through online sharing. The time-delay between sharing online and reading offline provided the opportunity to think more deeply about the ideas or concepts being discussed. This asynchronicity enhanced their personal control over the socially constructed knowledge. These four participants easily adapted online discussion participation in their knowledge construction cycles. If these participants experienced confidence, control and felt part of an online community, why did the other participants not feel the same? The following subsections discuss the reasons other participants gave for these differences.

5.1.2 b Emotions in online discussions

The participants who stated preference for social learning as part of their knowledge construction but did not prefer to use the online discussions concluded that online course discussions represented a medium where they did not feel connected to others. Ross (moderate), Shelly (moderate) Carmel (silent) and Karan (silent) preferred social learning. Yet they felt that the online medium did not engender a sense of control for social learning because it was harder to transfer emotions in the online context. These participants compared online discussions with face-to-face discussions and decided not to communicate online. They perceived online discussions as a less personal learning medium that only allowed surface engagement in a topic.

Carmel identified the importance of meaningful relationships with her peers for deeper engagement during learning discussions. She concluded that the online discussions did not feel real; they were devoid of non-verbal cues that led to lesser control over conversation, and did not enable connections with others.

> *"...they (online discussions) are less personal and they don't give enough motivation to learn. They build some knowledge to a certain extent but not much. These things (online discussions) don't build your confidence as well, because you don't really talk to people. You are only talking to the computer. It doesn't help you build, and how you call that establish rapport... It is basic theory and its online. It is not real life." (Carmel Int1)*

Thus absence of emotions experienced in the online medium led these social learners to remain silent in online discussions. The blended learners and full-time learners among this group were able to build face-to-face relationships with peers and engaged with them in and outside the class. However, the online learners who preferred social learning did not meet their peers regularly. They attempted to engage in online discussions but felt isolated and outside the social experience.

5.1.2 c Sense of ownership in discussions

The active discussions participants suggested that their online and blended courses needed to include additional activities to encourage social ownership and learner control over the VLE discussion spaces. All the participants engaged in informal face-to-face and / or informal online discussions that enabled a greater sense of ownership.

Jon (active) identified the benefits of an informal online communication board outside the controls of the University, where he and his peers could feel a sense of ownership of the social space.

> *"...and I was one of the ring-leaders. We started our own bulletin boards outside VLE. We were doing group work there and putting references. The teachers were not aware. It just means you were in control of the discussion space. So if you were doing group work, you could put files up there, you could have discussions there. I think there is a certain lack of flexibility in VLE. The university very much controls it. Its' not seen as something that belongs to the students." (Jon Int 1)*

In the above quote Jon identified the power discourses in the University-controlled online discussion space. The participants (active, moderate and silent) from the other

courses also confirmed this notion of ownership of the discussion space. They felt a lack of control and a lack of awareness of who was watching and what would be done with the information shared on the VLE.

Helen (moderate) identified informal online communication as a way of gaining control over who read her messages, and to ensure a response from the peers she felt knew more about her and her work.

> *"People who I wanted to talk to more openly, we exchanged personal emails. So we couldn't be watched. On the online discussion board some of the things we were asked to do were formal. Like write about certain things and feedback in a certain way. I think the major difficulty for me anyway was the time. Because you are not all doing the same things at the same time..." (Helen Int 1) "...So this is about different levels of control. Control is the key word really. On the (formal VLE) online interaction side the control is distributed and I have less of it." (Helen Int 2)*

The lack of a sense of ownership and the pre-defined expectations in the VLE discussions led these participants to chose informal online and offline exchanges. The latter enabled personal control and openness that these learners desired for social interactions and knowledge construction.

5.1.2 d Informal discussions to link theory and practice

The silent participants on the online and blended courses vividly discussed the social informal activities with colleagues to share practice experiences and deconstruct theory. Nina (silent), a postgraduate student nurse, stated

> *"I do lot of the informal things as well without realising it. You know we may be sitting for a couple of hours having a cup of coffee. We will just talk about our experiences, I am sure we get a lot out of that. Yes but its not a conscious effort...If I looked at that, that would be me reading. Informal discussions are more about relating it (information) to real life. I think you come away... with a sense, a general sense of something, a feeling. There might be some feeling in the reading but it is more about getting the facts." (Nina Int1)*

She stated that the text-based online discussion spaces were too formal. She felt the formality limited the opportunity to share the sense of being a nurse and learning about the new professional identity. For her, the online discussion spaces lacked the

tacit sharing that was valuable in making the theory-practice links. In contrast, the face-to-face discussion spaces engendered informality and enabled the tacit link between feelings and knowledge for professional construction as a nurse.

The silent participants in the full-time blended version of the geographic information science course read online discussion messages posted by the online part-time learners who were in full-time employment. These silent participants used others messages describing practice experiences to make theory-practice links through informal, face-to-face discussions with others.

> *"Sometimes someone has gone through some online discussion, we read that and discuss about that in face-to-face group. So I learn from classmates, because we are only six students face-to-face, so it is kind of one-to-one relationship with lecturer and also with classmates." (Karan Int 1)*

Although these geographic information science and nursing course silent participants were not contributing to the formal online discussions, they were gaining from informal offline social engagement. The offline and informal social relationships allowed them greater control over social learning than the text-based formal online discussions. These silent online readers also used others online discussions to construct meaning, without further engagement in online discussions.

The silent, moderate and active participants evidenced a variety of social learning activities. Before moving on to the personal construct analysis the next section draws on the learning activities analysis results to conclude that silent learners were engaged in individual and social construction of meaning.

5.2 Silent learners are learning

In answer to the question are silent participants learning, the learning activity analysis results demonstrated that the silent participants like active and moderate discussion participants were engaged in individual and social construction of knowledge in different social contexts. Although they identified themselves as mainly silent on online discussions, they were engaged in social construction of knowledge through

individual and social activities. Thus being silent in online discussions did not imply a preference or desire for learning in isolation.

The analysis of individual and social activities alerted that if these activities were taking place in social contexts, then the notion that silent participants or 'lurkers' were not engaged in social construction of knowledge was disputable. The social constructivist philosophy claims that all knowledge is socially constructed from one's environment (Augoustinos and Walker 1995, 182). If the participants' face-to-face classrooms, informal study-groups, professional practice settings and online databases were social structures, then learning in these environments would have supported social construction of meaning.

The analysis results of searching online using multiple resources and others online constructions evidenced that although some silent learners preferred individual learning, they were also open to socially constructed resources, ideas and thoughts. The analysis revealed that the silent participants used these social constructions to engage in learning, and to construct meaning. The individual learning activities to explore, read, reflect, and deconstruct information in personal, social and work contexts provided evidence for this form of social constructivism among all participants, including the silent online discussion participants, who are assumed to be socially disengaged in online discussions (Brown and Duguid 2002, 140).

Jose was silent in online discussions, yet used others messages to learn from their real life practical experiences,

> *"Its amazing because most of the distance students were you know writing a lot and saying really important things. They work in the field; you know they already work in the MGI field so they are just writing really important stuff. You feel like, because you are not working on MGI things, you feel like you are in another world. And they write like, 'yeah, I know those things are going to be out next week and I am working on that' and you go 'alright' (laughs)... They basically were telling us the experience at work, or compare their experience at work with the lecture material, or try to apply both." (Jose' Int 1)*

As identified previously, this research also included the silent participants who stated preference for social learning but chose not to engage in the VLE online discussions. They chose online silence because they did not feel the online discussions allowed them control over their learning engagement. They focused on individual activities and remained silent in online discussions to regain control over learning. While other silent learners involved others in their learning through face-to-face formal, informal and work-based discussions, where they experienced greater control.

The personal construct analysis helped to elaborate on the above results and demonstrated how different learners used individual and social learning activities together as part of their knowledge construction.

5.3 Personal constructs analysis

The analysis showed that all participants' individual and social constructs poled at the two ends of their construct dimensions. This suggested that all participants construed individual and social learning in a contrasting manner. The analysis of the graphical representations and the interview data revealed that the reasons for this poling or contrasts between individual and social constructions for learning were noticeably different. These differences were characterised in a variety of related personal constructs.

The personal construct analysis added to the evidence that personal control was one of the central constructs that influenced participants' decisions to engage in social learning (including online discussions) or individual learning. The analysis also revealed emotions as another personal construct that affected choices of social and individual learning activities. It was concluded that the participants who felt positive emotions and greater sense of control during online discussion participation participated more in online discussions than those who did not.

The following subsections represent the four main categories of learning constructions that show the differences in ways of knowing between the twenty-nine participants. These ways of knowing were affected by the different levels of personal control and

emotions experienced during their online and blended courses. The first category included social learners who experienced control and positive emotions during social learning including online discussions. Their construction of individual learning was linked to lesser control and negative emotions leading to lower engagement. They were active participants in online and offline social activities.

The second category represented the learners who wanted to engage in both social and individual learning activities and gained equally from them. They felt in control at both ends of the spectrum. However, if the social learning situation such as the online discussion activities did not engender positive emotions they disengaged from social interaction and relied on the individual learning activities. This group included active, moderate and silent learners who chose social discourses, other than or in addition to online discussions.

The third category included learners who placed emphasis on relevance in all learning activities. These learners felt relevance to their professional roles was necessary to increase control over the learning context. Relevance was also necessary to gain satisfaction and experience positive emotions during the learning activity. If the online discussions were not relevant to their professional roles and learning needs they were discarded from learning. Instead, these participants engaged in social construction through interaction with resources and people at work to make links between theory and practice.

The fourth category included learners who preferred to learn alone. These learners felt control over their learning goals and experienced positive emotions through individual engagement. The inclusion of others in their learning space reduced their control, led to distractions and feelings of isolation and vulnerability in a group. The silent and moderate participants in this group restricted their online participation to compulsory online discussions. While there were individual learners who gained from the compulsory participation, there were others who experienced negative emotions and surface learning.

This categorisation demonstrated the common significance of positive emotions and a sense of control as necessary conditions for online discussion participation for the

different learners in this research. It demonstrated that similar constructs, including personal control, emotions, trust, social presence, relevance, comfort, self-reliance and freedom influenced engagement in different learning processes for the different learners. Yet it also showed that it was these differences in learning preferences and contextual experiences that surfaced the two common personal constructs. The analysis concluded that it was the learners' differences in knowledge construction processes and the two commonly elicited constructs that led to differences in online discussion participation.

The following subsections use figurative representations to distinguish between personal control and emotions experienced by participants in the four ways of knowing stated above. These differences do not intend to represent fixed ways of knowing but assist in understanding the variable preferences and the personal construct influences on participation in online discussions. These differences do not aim to classify the research participants. In this research, the participants could identify themselves in one or more of these synthesised categories. This may be apparent as the reader personally relates to each category, and may find herself [sic] represented in more than one of these categories.

5.3.1 Preference for social learning

In this category, the participants construed social learning as more favourable than individual learning. They were active participants who described social learning activities as natural, more engaging and pleasurable. In contrast, individual learning was perceived to be less engaging and less exciting. They experienced a sense of control and positive emotions in online or offline social contexts alike.

Figure 5.1 represents the contrasting bipolar control and emotional constructs related to their individual and social learning. Their positive feelings of control during the online and offline social learning activities were closely related to the presence of others. The experience of interactivity helped them to engage deeply and extend their individual learning. These participants described interaction and sociability as their natural characteristics.

For these learners, the compulsory online discussions represented the same level of personal control as chosen discussions. They could use either form of interaction. They were usually the first to contribute and gained a sense of online social presence. This social presence meant others came to know them and replied to their comments. The online social presence in turn enabled them to experience greater personal control over their preferred social construction process.

Lucy (active) was an active participant on the business management blended module who preferred social learning. She was an active participant in online discussions. Her positive emotion constructs *'helps to motivate me'*, *'draws attention'*, *'visual'*, and *'memorable'* were highly correlated with her social learning constructs *involves others'*, *'more interactive'*, and *'feedback from others' (Lucy Int 2)*. Others involvement in her knowledge construction motivated her. In contrast, she construed learning alone as *'less engaging'*, *'text based'* and *'less interactive' (Lucy Int 2)*.

Lucy identified greater level of personal control and positive emotions when she was the first to contribute or had a leading role in social situations. She described the required social activities (e.g. compulsory online discussions) as important challenges that helped her to feel engaged, move forward in her learning, and ultimately increased her sense of control.

The social learning preference enabled these learners to experience a sense of control and positive emotions during the course online discussions, more than the learners who preferred individual learning. Their contribution to a social online or offline forum was almost instinctive. They felt actively engaged in online discussions and found online participation was an effective tool for social construction of knowledge.

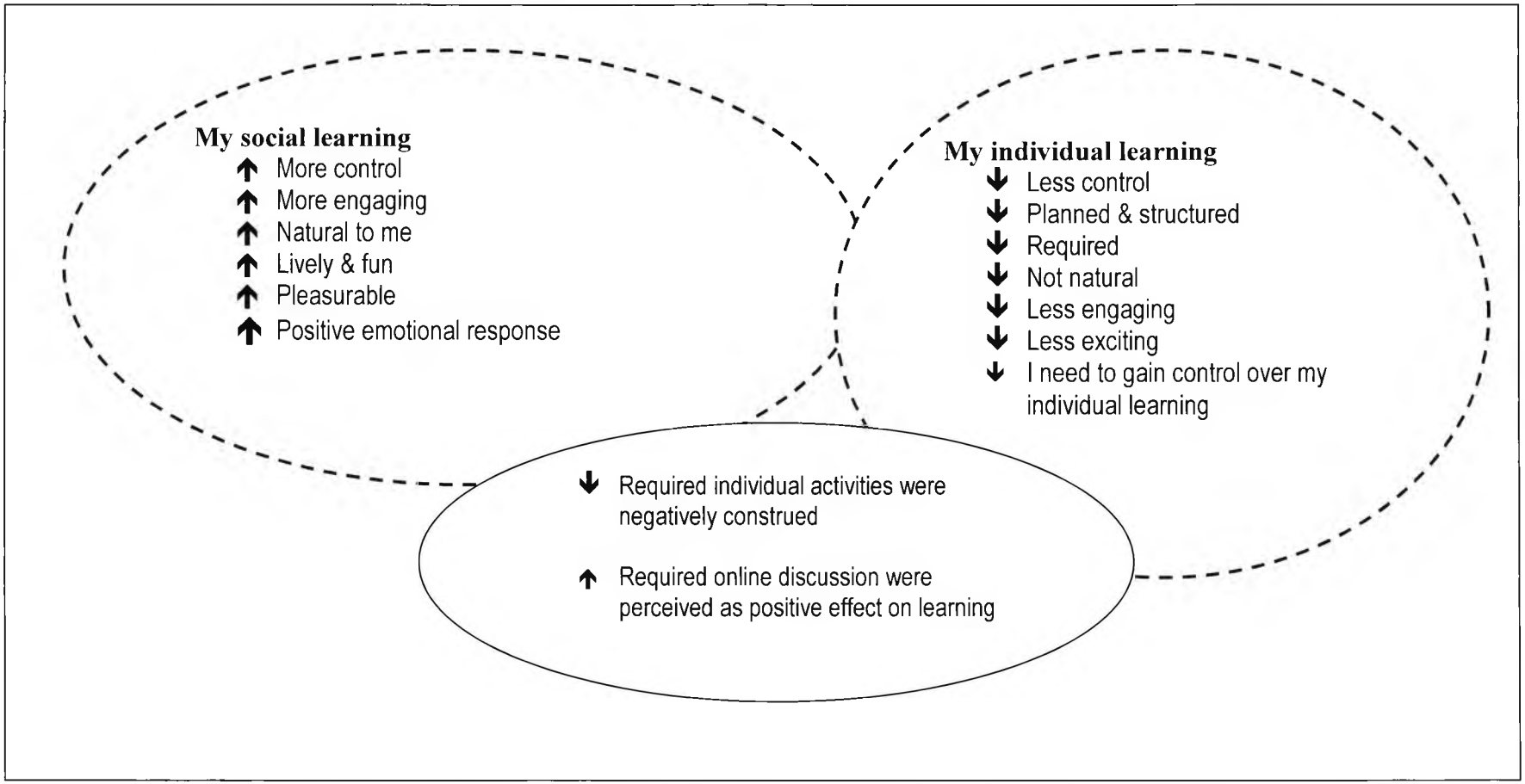


Figure 5.1 Personal constructs associated with social and individual learning for social learners

5.3.2 Balanced individual and social learning

The second category represented more than half (n=16) the participants in this research, who gave equal importance to social and individual learning. It included the silent, moderate and active participants. These participants aspired for a balance between the social and individual poles of their learning dimension. Their personal constructs related to social and individual learning were balanced at the two poles. The social and individual learning activities formed important parts of their circular knowledge construction cycle.

Their learning began by making sense to themselves and then sharing their understanding with others. They were different from the active social learners in the above category. The learners in this group experienced equal levels of personal control and positive emotions during the social and individual learning activities.

They also identified the importance for developing meaningful long-term relationships and having an emotional connection for social learning. These social qualities led to positive emotions and a sense of control over their social learning. Although the active participants in this group experienced a level of personal control and positive emotion during online learning discussions, yet they felt the necessity of some face-to-face contact or informal online contact to develop their social learning relationships. These relationships were important for open communication, development of trust and positive emotional engagement in online discussion.

Figure 5.2 represents the personal constructs for the individual and social learning activities for these learners. The arrow pointing from online social learning towards individual learning represents the emphasis these participants placed on trusting relationships for successful social engagement. The trusting relationships had positive affects on their comfort zones, enabled respect between members, and enabled shared responsibilities. These constructs increased a sense of control during social learning.

They emphasised that not feeling a connection with others would be the main reason for silence in online discussions. If the essential emotional components of trust, knowledge of others and reliance were absent during online discussions, they chose to

disengage and disregard formal online discussions from their learning cycles. They regained control and emotional comfort either through individual learning or through other social media that allowed to build an emotional connection with others.

Fiona (active) identified equal importance of individual and social learning. She described the two ends as internal and external energies that were *"closely married to each other" (Fiona Int 2)*. She used the personal constructs *'here I learn by testing my idea', 'quality of my own input drives me here', 'here I take initiative', and 'this always results in learning' (Fiona Int 2)* to identify her internal energies. This described her personal initiatives in learning that ensured quality and formed 60% of her learning process. She felt in control over her individual learning because she was relying on herself and could ensure successful engagement.

Fiona used the personal constructs *'here I learn from feedback', 'here feedback motivates me', 'here I reinforce ideas to keep others interested', and 'this sometimes results in learning' (Fiona Int 2)* to describe her extrinsic energies or the social forces in her learning. She identified social learning forces as equally important, which represented 40% of her learning. These social energies led to successful engagement only if there was high quality of interactions with others. The latter was accomplished through the personal constructs *'feeling respected and valued'*, and having an *'emotional connection' (Fiona Int 2)* with others. Fiona described she had comparatively lesser control over these social constructs. If the emotional connection was absent, the quality of interactions was lower and it lessened her sense of control over the depth of social engagement. She stated that if respect and value were superficial, and others constructed a barrier she disengaged from social learning, including online discussions.

The silent and moderate participants were also identified in this group. Shelly (moderate) desired a balance between individual and social learning. She tried and finally discarded online discussions from her learning cycle. She concluded that online discussions in her online tutoring course did not prove to be effective to build relationships and emotional connections with others. Despite her preference for social learning, her personal constructs associated with online discussions were, *'I have less control over this', 'felt apprehensive doing this',* and *'felt inhibited doing this' (Shelly*

Int 2). She regained control through individual learning, face-to-face discussions and by limiting her online participation to compulsory activities.

Thus online discussions did not result in an equal sense of control for all participants who preferred social learning as part of their knowledge construction. The level of control over online discussion participation varied as the participants experienced negative or positive emotions. All participants in this group gave importance to face-to-face relationships where they could feel valued, trusted and responsible for each other. This might ensure a more affective online social learning experience. For these learners, positive emotions were a necessary condition for online discussion participation. The lack of an emotional social connection in the online space was the reason why Carmel (silent), Karan (silent), Claire (moderate), Ross (moderate), and Shelly (moderate), who despite their preference for a balance between social and individual learning, chose silence or selective online participation.

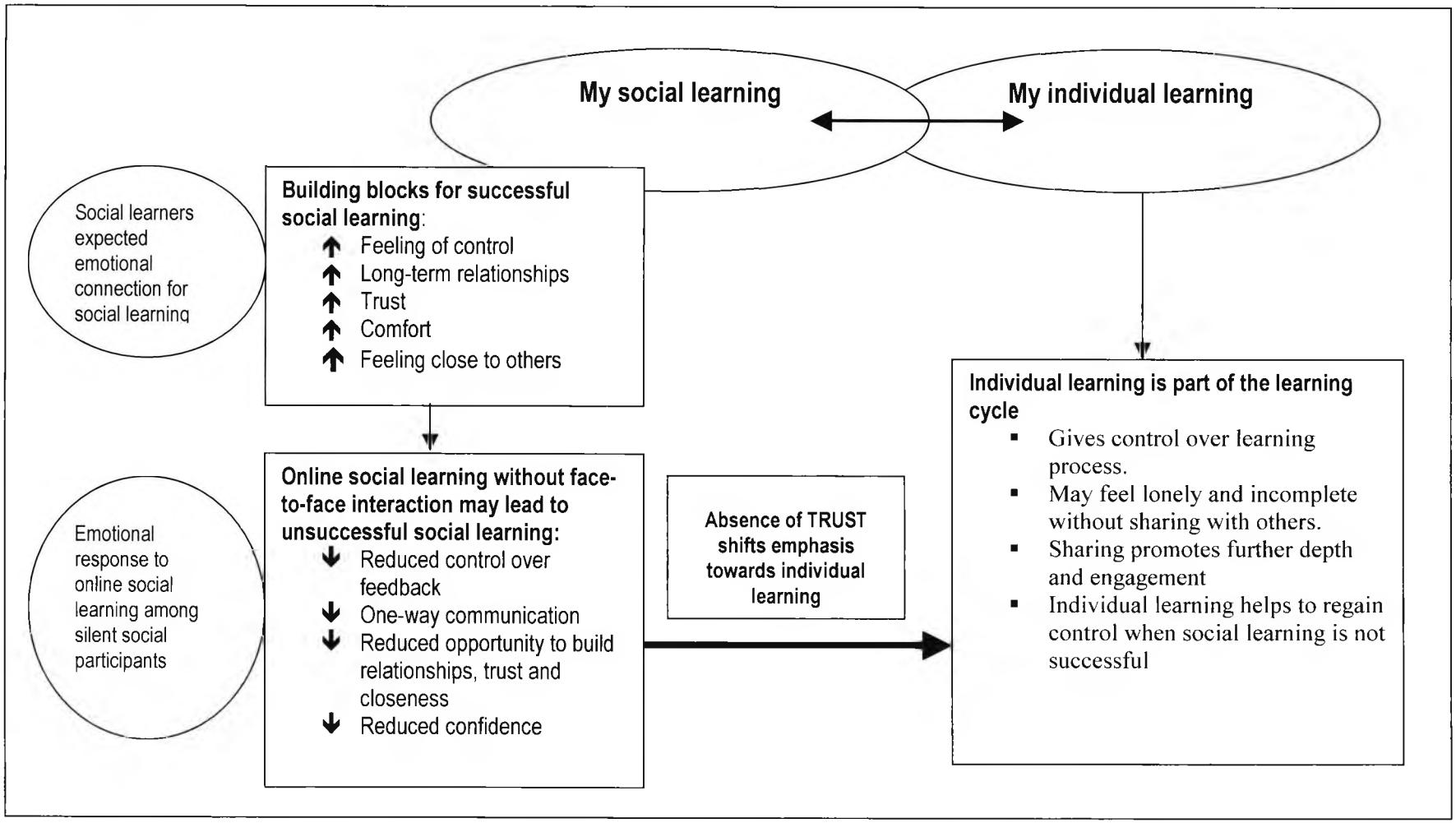


Figure 5.2 Personal constructs associated with social and individual for learners seeking balance and social connection with others

5.3.3 Professional relevance in individual and social learning

The third category included the participants who focused on individual and social learning activities that were relevant to their professional roles and work contexts. They were active, moderate and silent participants who were in employment, and had limited or focused time for learning. This group also included full-time learners who wanted to construct meaning and develop links between theory and practice. Relevance and professional interest were the most significant construct drivers and reasons for their learning. They preferred to engage in individual and social activities that were driven by work or practice and were beneficial in their professional careers.

These learners' grouped work-related and relevant activities with high level of personal control and positive emotions of enjoyment, satisfaction, and comfort during knowledge construction. They used this grouping to explain that if online social learning activities including online discussions were not perceived to be relevant, they were discarded from learning. Figure 5.3 represents the personal constructs for the social and individual activities defined in terms of professional relevance. The arrow linking work and learning activities demonstrates that relevance to work was the driver for choice and interest in learning activities. If a learning activity was not relevant, it engendered lesser control and negative emotions, and was discarded from the learning cycle.

It is possible that this category may not have surfaced if the research sample did not include learners studying for professional qualifications. Professional learning promotes the significance of theory-practice relevance. In this research relevance was evidently important for part-time and full-time postgraduate learners on professional courses who sought links between theory and practice. It was a necessary learning dimension for learners who had taken out time from their regular lives and careers to invest in the online or blended learning activities. This included full-time postgraduate home and overseas learners, learners in professional jobs and learners who were self-employed.

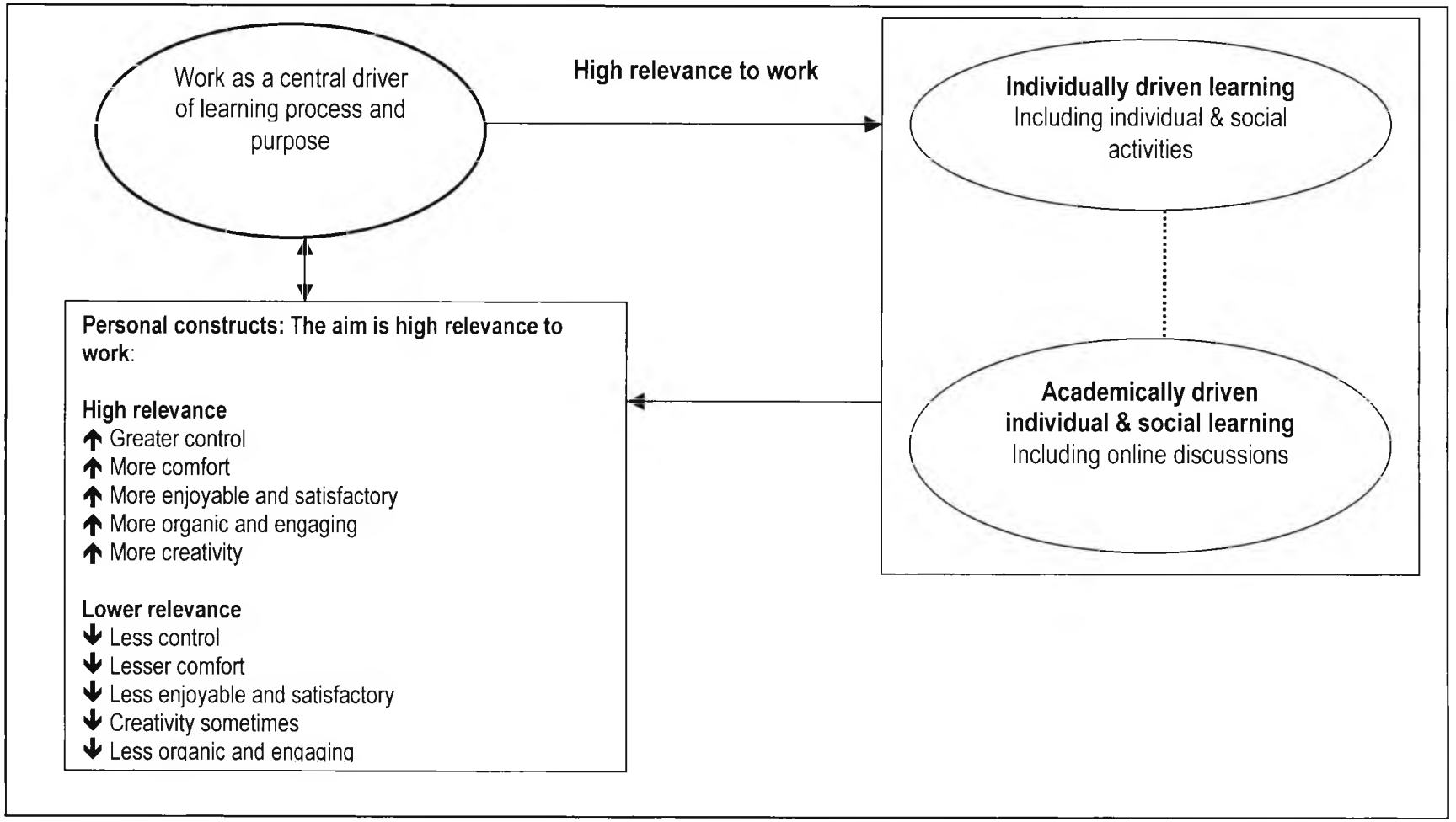


Figure 5.3 Personal constructs for social and individual activities defined in terms of professional relevance

It was noteworthy that all online tutor-learners identified some level of relevance for engagement in online discussions. They were either active or moderate discussion participants. The online tutor-learners wanted to learn to use online discussions for their own teaching practices. The online discussion participation during the online tutoring courses provided them hands-on learning experience. Participating in online discussions was part of their skills development.

In contrast, the participants from the postgraduate digital entrepreneurship and post-registration nursing courses identified online discussions as irrelevant. They were either silent or moderate online discussion participants. Ernie (silent), was a self-employed computer consultant who desired control over his learning activities. The relevance of learning to work allowed him to have this control. The relevance helped him to ensure that his learning benefited his work. His Repertory Grid rating and feedback interview confirmed his control construct (*allows a feeling of control for me)* was grouped with his work constructs (*real life rigour, anchored by work contracts, higher comfort zone,* and *lead me to external worlds of learning (Ernie Int 2)).* He also stated that learning initiated through work was *'more enjoyable'* and lead to *'comfort and creativity' (Ernie Int 2).*

He construed online course discussions as academically driven. The online discussion element was less relevant to his work and was outside his comfort zone. This was evident in his highly correlated constructs "*academic rigour, anchored by academics, moves out of my comfort zone, learning world limited to class" (Ernie Int 2).* There was less emotional comfort in academic learning when he could not make the link between the academic requirements and his work. The lack of relevance led him and other professionals in the research to discard online discussions from their learning cycles.

In this category, as in the other categories the participants used personal control and emotions to decide whether to engage in online discussions. In addition they also cited relevance as the central construct determining their participation in online discussions.

5.3.4 Preference for individual learning

Another category represented the silent and moderate participants who preferred to learn on their own. These participants' linked positive emotions and more control with individual learning activities. In contrast, the social learning in online or offline media were linked with negative emotions and lesser control. Figure 5.4 represents their control and emotion constructs related to individual and social activities.

These learners stated that learning alone gave them the space and time to feel safe and free to make mistakes. Learning alone meant freedom for learning without being exposed to others judgement. They suggested that the latter could lead to negative emotions and reduce personal control over their learning processes. It was interesting to note that despite their preference for individual learning, these participants desired a sense of community and belonging to the course cohort where they could relate to others and share a common sense of purpose.

Kay (silent) was a blended learner on a Masters in Information Science course who clearly identified the desire to engage in learning on her own. Learning alone was a more pleasant, relaxed and a happier experience for Kay. It allowed her to choose and control her area of study according to personal interest and excitement. When others were involved in her learning, Kay felt less comfortable and out of control. External involvement like engagement in online discussions made Kay feel out of control, especially when other did not respond to her messages. It also led to negative emotions when she wondered what might others think of her and her message. The required online course discussions were construed with negative emotions including *'intense experience', 'scary experience', 'feeling isolated',* and *'felt more remote' (Kay Int 2).*

Although Kay preferred individual learning, she still desired a feeling of belonging. Like the social learners in the previous categories, she wanted to feel part of a group and know others she could confide in. The blended nature of the course limited her opportunities to get to know others and gain a sense of belonging.

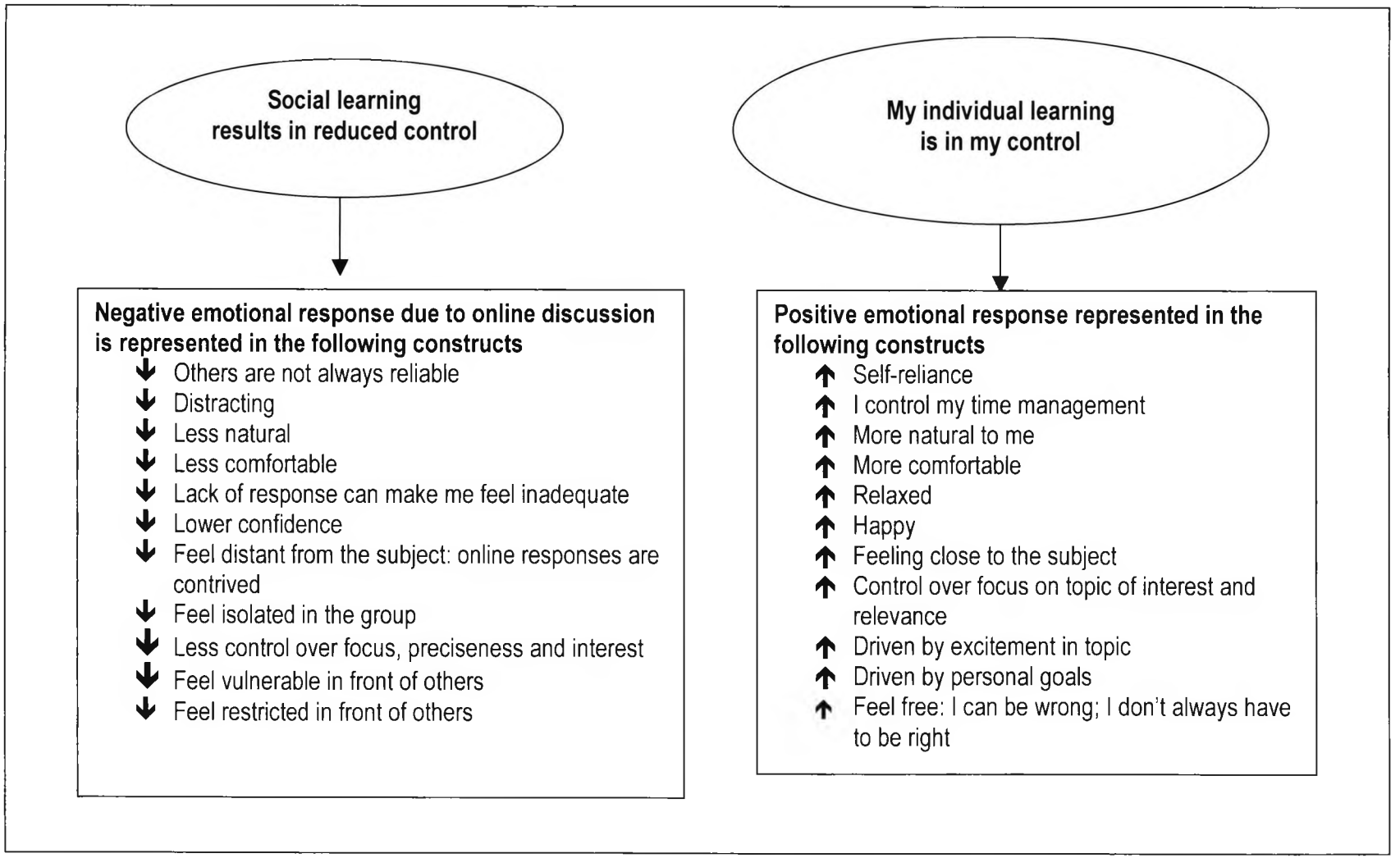


Figure 5.4 Personal constructs related to social and individual learning for learners with preference for individual learning

It is worth stating that just like the learners in other categories, these individual learners were also successful traditional learners with previous education at Bachelors, Masters and doctorate levels. Thus being a traditional learner did not by itself increase learner confidence or control over online social situations. The next chapter surfaces various social psychological processes underlying the online discussion experiences that enabled or disabled control and emotions for the social and individual learners.

The above classification of personal constructs related to online discussions demonstrates how preferences for social and/or individual learning, desire for control, and positive emotions were construed and influenced participation in online discussions. The classification resulting from the above analysis should not be taken to suggest that active, moderate and silent participants neatly fit these patterns for individual and social learning. Some study participants did not fit into any of the above four figurative representations or moved between the different representations. For example, Jon stated he could engage fully on his own or with other people. Yet he also desired control and a sense of belonging during the online and face-to-face interactions.

5.4 Control and Emotions

The above analysis results have considered the individual and social learning activities that participants' used for knowledge construction. It has uncovered the differences and similarities in knowledge construction between the silent, moderate and active participants. It has surfaced personal control and emotions as the crucial and decisive personal constructs to explain the different ways of knowing for the participants in this research. As stated in the introduction of this chapter, the reoccurrences of these two 'super' constructs indicated that they were like the two metaphoric lenses or looking glasses through which the participants viewed their learning worlds. These two constructs together also helped to understand why some participants engaged actively in online discussions, while others found online discussions disengaging for learning.

The personal control emerged as one of the main constructs in the individual and social learning activities analysis. The active, moderate and silent participants construed individual activities as enabling self-reliance and internal control over learning. Learning alone allowed the participants to define their learning boundaries and situate their learning in context of their subject and professional needs. The control experienced by the home learners and overseas learners during reading was linked to and also influenced their control during online discussion participation. The access to socially situated knowledge through searching online and reading multiple academic perspectives increased the active, moderate and silent participants' control over social construction of knowledge. There were active and moderate participants for whom these individual activities gave more control to engage in online discussions.

The personal control construct during individual learning activities did not have a positive impact for all online and blended participants. There were social learners who did not feel positive emotions, a sense of belonging and control through learning alone. There were also the overseas participants, who experienced difficulties in cognition in English language. They highlighted their slow reading as an issue of control, which ultimately led to lesser participation in online discussions.

The deconstruction and analysis of individual and social learning activities has helped to evidence that silent participants were also involved in social construction of meaning through individual and social activities not seen by the tutor. The preference of alternate forms of social construction other than online discussions, revealed the reduced control the participants experienced during formal online discussions. The alternate forms of social construction were described as informal, spontaneous and effective for tacit sharing. These social constructions enabled greater personal control than formal online discussions because the participants experienced a sense of ownership, openness and connectedness with others, and were able to make theory-practice links.

Closely linked to control in social and individual learning situations were feelings. These feeling did not show themselves as a separate entity from personal control. These feelings were emotions that were closely and complexly related to how much

control participants' experienced during different learning situations. A sense of personal control was associated with positive emotions, and was linked to the learning activities that most successfully validated or reconstructed meaning in the participants' existing construct systems. Likewise, less control was associated with negative emotions. It related to the learning activities that were invalidated from participants' construct systems.

This research analysis concluded personal control and emotions were the essential attributes that the different participants used to evaluate the effectiveness of online discussions for their knowledge construction. However, the research findings did not identify whether personal control led to positive emotions or vice versa. In the construct dimension graphs used in the feedback interviews, the two constructs were either located on the same learning dimensions or on different dimensions that were intrinsically linked to the participants' descriptions of their learning processes. Thus for all learner in this research personal control and emotions were parts of the same construct systems.

The two super constructs, personal control and emotions together provide answers to the research question:

- ➔ Are there differences between how active, moderate and silent participants engaged in learning?

The analysis showed there were differences and similarities in the participants' ways of knowing. It showed the participants' preferences in ways of knowing and their sense of control and emotions together influenced their choice for individual and social learning activities. Thus the differences in control and emotion constructs helped to surface the different and similar ways of knowing. For example, the participants who had a preference for social learning, and felt personal control over the discussion tools and relevance, engaged actively in online discussions. However these distinctions did not lead to neat categories of how the active, moderate and silent learners engaged in learning and used the online discussions.

The categories of ways of knowing in this chapter showed that the formal online discussions did not result in an equal sense of control for all participants. The participants' who preferred social learning as part of their knowledge construction

cycle also experienced a reduced sense of control in formal online discussions. In particular the participants who desired a balance between individual and social learning, did not dominate the discussions board, yet they desired control over their social learning in the online context. The control they sought was closely related and enhanced due to positive emotions resulting from the social learning relationships. When the emotional social connections were absent in the formal online discussions, these active, moderate and silent participants either restricted their online participation to required discussions or reverted to complete online silence. They used other social and individual media that enabled a sense of personal control and positive emotions for meaning construction and depth of engagement.

The active, moderate and silent participants in this research were studying professional courses and sought professional relevance in their learning activities. The analysis of the knowledge construction processes revealed a need for online discussions to be closely integrated with and be relevant to learners' professional roles. The lack of relevance was construed as lesser control over professional learning and less satisfactory emotions, leading the participants to withdraw from the formal online discussion forums.

The moderate and silent participants, who preferred to learn alone, felt most control during individual learning activities. Involving others in their knowledge construction risked negative emotions and possible loss of control. These individual learners chose silence in online discussions. Yet they desired emotional connections and a sense of belonging to their learning group.

Therefore, irrespective of their level of online participation the main similarity between the participants in this research was their desire for control and positive emotions during individual and social knowledge construction processes. Personal control was also a central aspect of learning in the metaphorical representations where all research participants repeatedly placed 'self' at the centre of their learning. All the participants chose different learning activities depending on what made them feel more in control. They disregarded or controlled input into activities where they felt less control. This sense of control was linked to other personal constructs including preciseness, professional relevance, trust in others, and feeling an emotional

connection with others. These also constructs helped to differentiate levels of control and learning choices.

The Repertory Grid analyses based on the Personal Construct Theory helped to surface and explore emotions in online and blended learning. The analysis showed that positive emotions were central to experiencing a sense of control over the learning processes and outcomes. These emotions were important to understand the reasons behind the differences in online discussion participation for active, moderate and silent participants. One participant remarked the importance of emotions that were central to her learning control, yet she had not realised the impact they had on her choices and engagement in learning,

> *"Its funny when you think about learning you think about the obvious things of reading and so on, you don't consider the emotional aspect. At least when you start to think, but these emotions are happening to you all the time. Things make you feel sad, make you feel worried about something. Also you feel pleased with yourself, something you feel quiet content in; and you kind of just sort of think oh well. You don't relate to the whole learning thing." (Kay Int 2)*

Emotions in learning are not a new phenomenon, yet it is often ignored in course design and facilitation. In this research emotion for learning surfaced mainly when the online and blended course participants discussed their feelings and responses during social and individual learning activities. Twenty-five participants stated the lack of emotional connections through online discussion environments. They did not feel the online context helped to build trusting relationships for social learning. The active, moderate and silent participants in this research used the face-to-face workshops, class seminars, or informal email links to build social relationships before or instead of the formal online discussion. The analysis of emotions and control in the online learning context also revealed social psychological and practical factors that explain differences in online discussion participation. These factors are discussed in the next chapter.

5.5 Conclusion

This chapter has explored the different ways of knowledge construction and reasons why some participants prefer individual and/or social learning. It has demonstrated that the reasons for differences in others involvement in learning are attributed to the personal control and emotions experienced during social interactions. In particular the social learning activity analysis and personal construct analysis lead to the conclusion that personal control and positive emotions were the necessary underlying conditions for participation in online discussions.

This chapter has evidenced the significance of individual learning activities for knowledge construction. The discussion has reported that searching online resources is an important means of increasing personal control over learning, through definition of personal goals and confirmation of shared constructions before accepting them as personal knowledge. The analysis also demonstrated that searching for multiple resources in online databases that represent social structures enabled silent and individual learners to gain access to social perspectives and construct meaning in a social context.

The evidence concluded that silent participants in this research were engaged in learning. The silent participants also actively involved others in their social learning, albeit not via the online discussion space. The elements listed by the participants showed that although many participants identified themselves as silent participants, they still took some part in online discussions. The analysis confirmed that the participants' description of self as silent, moderate and active in online discussions did not indicate their actual level of online participation, nor did it show the level of control or emotions they experienced during online social interaction. Thus the descriptions silent, moderate and active were irrelevant for examining learner engagement.

Furthermore, the participants' descriptions or labels for their levels of online participation also did not accurately relate to their actual social construction. There were silent and moderate participants like Carmel, Karan and Shelly, who did not actively engage in online discussions and did not find them conducive to their

learning, yet they preferred and gained from face-to-face and informal interactions for social learning. Similarly, the silent participants like Max, Eric and Lara were actively involved in individual social construction during personal reading, and in related discussions at work. On the other hand, the moderate participants like Helen did not prefer others involvement in her knowledge construction, but participated in online discussion to meet the compulsory requirements. Thus participation in online discussions also did not represent and facilitate the actual knowledge construction processes that the participants used to make meaning.

An important conclusion to be drawn from this discrepancy between social construction and levels of online discussion participation is that online participation is not a measure of social construction. This challenges the view that promotes online discussion participation as the main way of social construction for all participants, and assumes that the medium offers all learners the same level of control and flexibility. The next chapter reconsiders the issue of personal control in the online social medium. It reports on research analysis results that unravel the social psychological and practical differences during online discussion participation. The discussion of online social identity construction for online participation in the next chapter further validates the conclusion that the differences in personal control and emotions during online discussions affected learning through online participation.

Chapter 6

Social Identity & Practical Issues in Online Discussions

"Supposing if I said this to you and you could see how I look like and how it sounds. But once you write it down I can say exactly the same words but they can look different. They are there and people can brood on them."

(Claire Int 2)

This quote is from a moderate participant who discussed the consequences of communicating in a text-dependent environment. Her suggestion was that a written word represents self in an online social space. The textual information shared becomes the main source to construct another person's identity. The social construction of reality in a text-depended environment ignores and overlooks the invisible social contexts that describe and define individuals (Brown and Duguid 2002, 2).

The active, moderate and silent participants in this research were very aware of this gap in their online social identity construction through textual exchange and the potential of false online representations. The results reported here demonstrate that the processes involved in online social identity construction and the practical technology issues were the additional significant facets that influenced knowledge construction in online and blended courses.

The discussion begins with an introduction of the concept of social identity. The research analysis identified different themes of online social identity construction process that affected participants' engagement through online discussions. The first theme, knowledge of others is evidenced under the subsections desire for connectedness and trust for online social learning. The analysis showed that the different levels of emotional connectedness and the variations in participants' knowledge of others in the online/blended course cohort led to power differences in online discussions. The second theme demonstrated the lack of online acknowledgement to one's messages resulted in negative emotional responses and

disengagement from online discussions. These negative emotions and a lack of emotional connectedness did not support successful online social identity construction.

The third theme found that the participants controlled their online social identity by formalising online language and controlling when to participate. The evidence showed that this self-imposed control on online exchange was to ensure a positive online social identity. It resulted in superficial and formal messages, which did not facilitate openness and depth for discursive learning. The fourth theme evidenced the conflicts between how online participants saw themselves as compared to how others saw them in the online discussions. The evidence suggested these conflicts of online social identities were linked to different levels of personal control experienced in online discussions. The conflicts in representations and the different levels of control lead to active participation by some and non- or limited participation by others.

The fifth theme on language identity revealed that formality of online discussions limited the overseas learners' opportunities to socialise and construct positive social identities as postgraduate learners in the UK. It also showed that the differences in online communication skills and cultural differences in expectations of academic learning influenced the overseas and home learners online social identity construction. As in the previous chapter, the sixth theme was professional identity. It showed the significance of relevance in online discussions to support online social identity construction for learners engaged in professional learning.

The latter sections of the chapter reports on results related to the practical technology issues that affected online social identity construction and discussion participation. These are discussed under three subsections, employment responsibilities, IT access, and VLE access. It is concluded that the differences in professional responsibilities, access and skills among learners affected their flexibility and control during online and blended learning engagement. These results challenge the rhetoric that e-learning is flexible for working professionals.

The conclusions summarises that the differences in online social identity construction processes and practical issues led some learners to feel either enabled and others

disabled to construct meaning through active online participation. The overall discussion surfaces power discourses in online discussion spaces and their impact on emotions and personal control during knowledge construction. The implications of these power discourses in online and blended learning are discussed in Chapter Seven.

6.1 Social identity

How others see me matters in my learning

All participants stated that in order to involve others in their learning and engage in a discourse, they needed to have a better knowledge of who others were. They needed to feel connected to others and have a sense of belonging to the learning group. The participants were also concerned about how others in the online space perceived them. In the social psychology field the former concept is popularly termed 'group cohesiveness' (Hogg and Vaughan 2005, 291) and the latter is 'social identity'. According to Augoustinos & Walker (1995) social identity is closely related to group cohesiveness,

> *"Social identity is that part of the individual's self-concept which derives from their knowledge of their membership of a social group (or groups), together with the value and emotional significance of that membership" (pp.98).*

In contrast personal identity is concerned with the qualities and characteristics we see in ourselves. These qualities are completely individual. Social identities influence us and exist even though we may not define ourselves in terms of our social roles and social positions.

Hogg and Vaughan (2005, 311) suggest that construction of a social identity is one of the reasons why individuals join a group. We are more motivated to join groups that help us furnish a positive social identity. In this research, the online and blended course participants' online social identities were shaped and valorised due to their memberships of the online or blended courses, and due to their past and present roles outside the courses. The online social identities and construction of the online social learning worlds were ultimately influenced by how the participants wanted to be seen by others and how they presented self to others through their online messages.

6.1.1 Online social identity

The analysis exposed various dimensions of the participants' social identity construction in online and blended courses. It confirmed that online social identity was a complex aspect of the active, moderate and silent participants self-concepts, which either promoted or demoted online discussion participation. Figure 6.1 shows the principal themes of online social identity that emerged from the analysis of participants' constructs related to their online and blended learning experiences.

Figure 6.1 conceptualises the influences on online social identity construction. The analysis extended the understanding that knowledge of others and feelings of connectedness (depicted at the peripheries of the Figure 6.1) were necessary conditions for online group and social identity construction, because they influenced whether learners felt inside or outside the online discussion group. The insiders, who felt a connection with others, were able to develop an online social identity and experience an online social presence.

The analysis also confirmed a link between participants' emotional response and the development of online social identity (1 in Figure 6.1). The lack of acknowledgement of their online postings by other learners resulted in silent and moderate participants feeling inadequate and separate from the online group. This resulted in learners adopting a peripheral role of reading others discussions and not contributing. The evidence suggested that negative emotional constructs were influentially linked to non-participation and a lack of a successful online social identity construction. The comparative analysis concluded that differences in experiences of emotional connectedness and sense of control during online discussions also led to power differences among active, moderate and silent participants in their respective courses.

The active, moderate and silent participants imposed control on how they presented themselves to others (2 in Figure 6.1). In the desire to be accepted and seen positively by others in the online context, they controlled presentation through language and content in tutor-monitored online discussions. In exercising this personal control, the participants shared limited content, made declarative statements or held back from contribution. This control resulted in surface discourse through online discussion spaces, consequent disengagement and non-participation.

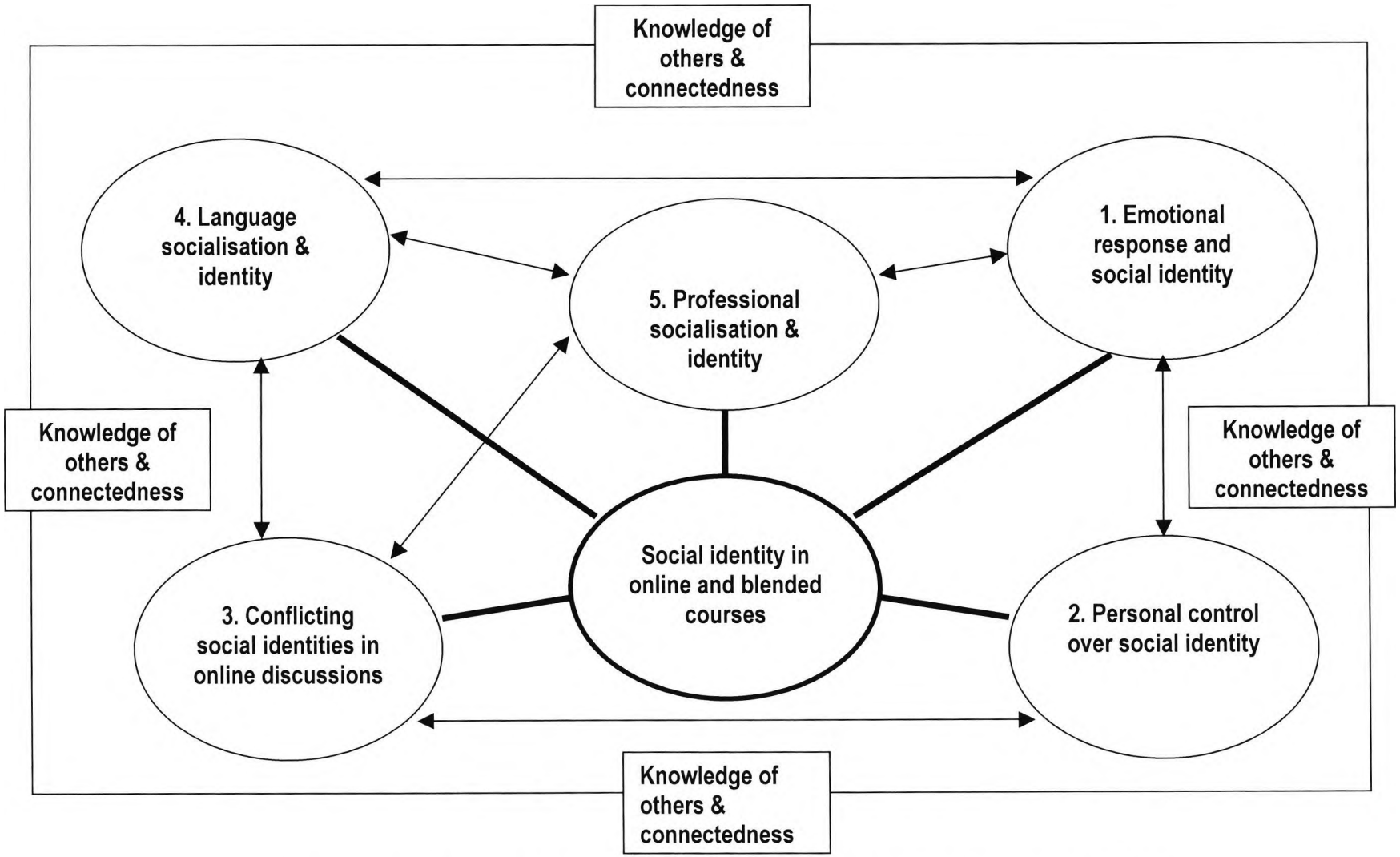


Figure 6.1: Principal themes of online social identity construction for online and blended learning

The participants perceptions of how they were seen by others and what online social identities they held were in conflict with how others actually saw them in online discussions (3 in Figure 6.1). This conflict in social identities resulted from participants' desire to feel in control over the online social situations, while they had limited knowledge of how others perceived them. The result of these conflicting social identities was online disengagement by some and active participation by others.

Language socialisation was another aspect of social identity construction (4 in Figure 6.1). It resulted from analysis of overseas participants repeated references to English language and personal control during online participation. The analysis revealed that overseas participants did not find formal online course discussions safe and favourable spaces for language socialisation and academic enculturation. These participants expressed the desire to feel confident and to reconstruct their language identities as competent course participants using English language in a UK higher education context. They found face-to-face discussions in class and silent reading of online discussions supported this socialisation more effectively and safely than formal and controlled active online participation.

As highlighted in the previous chapter, analysis also revealed the importance of professional identity construction during online and blended courses (5 in Figure 6.1). All participants' aimed to socialise, construct, develop and expand their new or existing professional roles. Online participation was a more obvious choice for the participants who saw relevance between online discussions and their professional identity development. There were others who did not see this relevance in formal course online discussions and preferred not to participate. The latter group chose to develop and practice their professional identities through social discourses in practice settings outside the formal online discussions.

All of the above themes were not independent of each other, but interconnected. The arrows in Figure 6.1 denote these interconnections. The first three themes (1, 2 and 3 in Figure 6.1) demonstrated why positive emotions and personal control were so significant for online social identity construction, online participation and depth of participation. The importance of emotional response and feelings during online social identity construction highlighted importance of trust, knowledge of others and

relationship with other learners. The connectedness with others influenced openness and perceptiveness of others identities for discursive learning. The different levels of personal control experienced during online group and social identity construction also surfaced hidden power discourses in online discussions, which benefited some learners and disadvantaged others.

The latter two themes (4 and 5 in Figure 6.1) were linked to personal and professional reasons for joining formal courses. These reasons included construction of successful language and professional identities. These identities were not independent of the emotions and personal control experienced in online social situations. Thus emotions, trust, personal control and power discourses in social situations stood out in all these online social identity themes. The following subsections explore each aspect of social identity in turn with evidence from the research data.

6.1.2 Knowledge of others

In this research there were participants who felt online discussions enabled them to feel a part of a group, while others felt outside the group. The interviews and other data sources revealed knowledge of others, desire for connectedness and trust in others, were recurring themes affecting online learning engagement. All participants construed these themes as significant to interact with others and gain social support during their online and blended courses. The knowledge of others and trust helped participants to feel in control and emotionally supported during online discussions.

Feeling part of the learning group helped online learners to know that they were not alone but part of a cohort that had similar goals and experienced similar emotions. Knowledge of others also assisted the participants in establishing a comfort zone where they could trust others, share ideas and validate their learning. The results showed that while some participants experienced this connectedness, others identified limitations of online discussion space to feel closeness and a team spirit.

The differences between feelings of connectedness represented different levels of control the participants felt over their online social membership. Those who gained a sense of control due to feeling connected to others felt inside the group and were more

open to sharing ideas. The participants, who did not experience group cohesiveness and felt outside the group, held back from participating in online discussions. Online participation by some and not by others, due to different levels of personal control, led to differences in status in online discussions as active participants assumed they were the core of the online group. This control status experienced by some participants and not by others contributed to power discourses and affected online discussion participation.

The following two subsections exemplify the disparities between participants who felt a sense of belonging and those who did not. The analysis also indicated that the differences in feelings of connectedness may have existed because online and blended course designs did not allow sufficient time and opportunities for different participants to explore commonalities, build a group identity and construct social norms where they could trust others.

6.1.2 a Desire for connectedness

All participants desired a feeling of connectedness with others, irrespective of their individual or social learning preferences. Cassie was a silent participant who preferred individual learning, yet she desired social connectedness with the learning cohort.

> *"Just having that facial contact with someone and realising that there are others going through the same thing as yourself that you are not in isolation. It is more a social interaction rather than anything else by coming to university sometimes. Just to realise that you are in the same boat and you are not isolated." (Cassie Int 2)*

All participants wanted to be able to share feelings of excitement, exhaustion, disappointment and satisfaction that resulted from being part of the same course. This social connectedness was a form of security and social support to share feelings, clarify meanings and help each other in the learning process.

The participants who did feel a connection with others on the online and blended courses experienced positive emotions, which included fun, high morale, motivation for learning and feelings of social support. Once established, the commonness of purpose aided these participants to feel motivated and also to have an appreciation of others knowledge and experiences. The positive effects due to others presence were

expressed by active and moderate participants who felt this sense of belonging. Jon and Corrie's quotes exemplify this.

> *"It was a sort of a support group. You did not feel you were alone, even if you were physically alone. Even when you were preparing for exams, when you were doing revision, it would help to go and talk (online) to someone who was in the same mental space, rather than, you know, anybody else." (Jon Int 1)*

> *"We had quite a few students drop out initially. Part of which was due to bad recruiting actually. Once we had got to that core of people who were going to go through to the end, we had a very good online community going, which I did enjoy...It was fun being in a community online and it was good to see how well an online community can work. I thought it worked very well. This was enjoyable, fun and all." (Corrie Int 1)*

The positive emotions associated with feelings of belonging in the online social space led these learners to build a group identity and communicate more openly. In this research a small proportion of participants (n=4) indicated experiencing these positive emotions in online and blended courses. They identified themselves as part of a *"core of people" (Corrie Int 1)* in online discussions in their respective courses. This core of people included learners who successfully established a sense of commonality and purpose. It was this commonality and purpose that was the basis of their commitment and engagement in online discussions.

6.1.2 b Trust

The participants', who did not experience a similar sense of connectedness and group identity through online discussions, stated they did not know others and did not know if they could trust others in the online group. These participants did not feel comfortable to instigate online communication or to respond to others online messages in the formal discussion board.

> *"Because I didn't know any of these people. There was only a handful of people that I ever got to know from face-to-face lectures, and it was quiet strange participating in a discussion or reading a discussion with sort of disembodied people, the distance students." (Kay Int 1)*

The above statement by a silent participant indicated the implication of not knowing others was a disconnection from the online cohort. This perspective was even shared

by moderate and active participants who did experiences some sense of belonging and group identity.

Rob (moderate) was one such participant who shared his hesitance to contribute in the early part of the course because he did not know others and did not know if he could trust them for his social construction.

> *"Trust is something that would build up over time. At the very beginning, I might say I am not sure whether I want to share my thoughts, that's the way I see online learning going for my area."(Rob Int 2)*

Trust and knowledge of others were measures for control that all participants used to decide whether or not to participate in online discussions. This trust was lacking for the participants who saw themselves as being outside the online learning communities, and led to limited online contribution.

Two participants, who were online tutor-learners, highlighted gaps in their course designs that did not allow enough time and opportunities for group socialisation and trust building. Shelly (moderate) was an online tutor-learner who identified the lack of opportunity to learn about others as the reason why she and others did not engage in two-way online interaction.

> *"Getting to know each other, I think that's lacking as well. And I think the fact that, for me, we have all come from such varied background, which is something that might be good. But you get students from varied backgrounds who don't necessarily have anything in common with each other where distance is an issue and you know I come and see you for a day.. I don't know you. I don't know may be they (course designers) need to do more activities where some kind of bonding can take place, so you don't feel inhibited about ringing someone up, or emailing them or starting some sort of relationship". (Shelly Int 1)*

The lack of trust and knowledge of others in online discussions meant these participants could not relate to each other's online postings. The lack of an online group identity also meant they did not feel compelled to respond to others posting. The active and silent participants suggested this lack of knowledge of others was the main reason why they or others in their online cohort did not feel any responsibility to contribute and share their ideas with others.

According to Hogg and Vaughan (2005, 311) all humans have a basic and overwhelming need to belong. They cite face-to-face group studies to confirm that once established the sense of belonging results in *"powerful and rewarding sense of self esteem and self-worth"* (pp. 311). In this research the participants who experienced this sense of belonging had a positive self-worth and felt in greater control over their online social learning situation, in contrast with those who did not. The silent, moderate and active participants from each course stated that there were core regular participants in the online discussion boards, who were powerful and controlling. These were the insiders who had established a social presence, a sense of self-worth, and contributed to the dominant group norms for active online participation.

On the other hand the participants, who did not experience personal involvement and social belonging, did not feel in control during online participation. These were the outsiders, who did not comply with the dominant norms and felt outside the online group. This variation of power and influence over the online discourse was also confirmed in the online social identity construction processes reported below.

6.1.3 Online social presence: an emotional response

All participants explained the importance of getting a reply to their online messages. The analysis showed that after an initial message posting, the participants' efficacy in online social identity construction depended on others replying to their messages. The replies and acknowledgement by others helped them to build a sense of online social presence. This social presence was a necessary building block for their online social identity. It also formed the basis for a positive online representation. The participants linked the online social presence with emotions of belonging and involvement. They identified these emotions helped them to feel safe and trust others, and were necessary to engage in deeper social discourse.

The active online participants, who were usually the first to contribute, identified this sense of social presence. They were successful in gaining some form online response from their peers or tutors. On the other hand participants', who were not dominant

online and not the first to contribute, felt ignored when they did not receive any acknowledgement of their online messages. The lack of response led these participants to question how others might perceive them. They contemplated reasons for not getting a response and suspected that their contributions might be judged as incompetent or deficient in some way.

Kay (silent) stated

> *"It was quiet a disconcerting feeling, that they are already judging my work and thinking 'oh I don't know what do I say about that', because I didn't know what they were thinking. And this is like two days before the presentation, I had nothing (no response), right." (Kay Int 1)*

She questioned and wondered if others judged her work to be deficient or unsatisfactory. Others unresponsiveness made her feel emotionally upset, stressed and inadequate.

> *"Actually I have got upset about a few thing, as you know the odd cry from the unproductive group work. So its (an online response) a key thing for me." (Kay Int 2)*

The lack of acknowledgement lead to feelings of inadequacy, especially when active participants seemed engaged in a discussion that seemed too complex or advanced. These participants identified a sense of isolation and separation from their online and blended cohorts. This was evident in Kay's and Jaya's personal constructs *'feeling isolated in a bubble' (Kay Int 2)* and *'I feel isolated in a group' (Jaya Int 1).* These constructs indicated feelings of separation from the rest of the group.

These emotions of isolations further contributed to their sense of social absence from online discussions, as described by Shelly (moderate).

> *"I didn't feel part of the community at all. And this is why also I probably felt that I didn't gain anything from it. In the end it just became an exercise. I just felt that for me it was just emotion. That involvement, it didn't happen for me. But may be, may be it happened for other people. I don't know. I never felt I was inside the online course experience. I felt I was on the outside looking in through that opaque glass, not really seeing. I don't think that I really got their point." (Shelly Int 1 & 2)*

Despite being an active social participant in face-to-face learning, Shelly concluded her online learning experience was

"lonely, robotic and unemotional" (Shelly Int 2)

Thus, emotions affected the learners' social identities as online discussion participants when they did not get an online response. The lack of response led them to conclude that tutors and their peers were not motivated to consider their questions or ignored them. Feeling separate, socially absent and disconnected from others, these participants did not feel in control their online social identity construction. Thus, lack of online social presence, consequent negative emotions, and no sense of control over others response discouraged them from further online discussion participation.

6.1.4 Controlling online social identity

The interviews revealed that all participants wanted to be seen in a positive light by others and have a positive social identity. They controlled their online social identity by controlling how they presented themselves online. Online messages were controlled and used as strategic self-presentation *"to get people to like you and to get people to think you are competent"* (Hogg and Vaughan 2005, 139). The participants concluded that consequences of these controlled online messages and online social identities were often superficial discussions that did not contribute to knowledge construction.

The analysis of personal constructs related to online discussion participation revealed the strategies participants used to control their online presentations. The participants justified the need to meet personal and social standards to contribute in online discussions. These standards were not defined in the course but were social standards that the participants felt they ought to attain in an online formal space. The reliance on text for social presentation meant they were careful about how and what they wrote in online discussion boards. They controlled and formalised language used in online discussions, and controlled when they participated.

The decisions to participate depended on participants' confidence and knowledge of the subject, because they did not want to appear stupid or ignorant in the presence of

peers and course tutors. Apart from two active participants, all other active, silent and moderate participants stated that they did not take risks and use the discussion boards as confidants or sounding boards to develop ideas. They controlled online social presentation by first watching others interactions and then deciding if, when, what and how to contribute.

These participants also reported that controlled online presentations lead to contrived contributions that were limited in depth for learning. Thus the overall affect of the imposed control over formal online discussions was lesser freedom and openness to consider issues in depth or to engage in social deconstruction and reconstruction of knowledge. The following evidence led to the conclusion that this imposed personal control for positive online social identity construction limited the potential for online social learning.

Claire (moderate), who was an online tutor-learner, was very aware of her self-presentation in face-to-face and online spaces. She was also aware of the limited opportunities in the online text-dependent context for positive presentation. She stated that reliance on text in the online space limited her control over her presentation in front of others. She was also concerned that people would judge her solely on the way she wrote, and on what she wrote in online messages. As a result, she chose to control and subdue her online interactions.

> *"I think my initial worry online was that putting work online and its there. And people can discuss it, think about it and go back to it. So (it is) important not to make a mistake ...I think it is just more permanent in writing. I know I would say things, like I would say things now, perhaps things that I wouldn't write...I think so, online feels less freer than f2f." (Claire Int 1)*

Claire felt controlled online messaged led to less freer discussions devoid of emotional engagement for deeper social learning. With this imposed control and formality, online discussions felt like *'jumping through the hoops' (Helen Int 2)* for participants, who did not feel they gained much from the exercise.

The active, moderate and silent participants identified the main reason for this control over online social identity was the formality of discussions that were watched and judged by tutors and unknown others. The formality and awareness that the written

text was being judged, hindered more open social representations of self in the online social space. As Jane (active) stated,

> *"You develop your personality through a conversation don't you. You don't develop your personality through online discussion (Laughs). Unless its not watched. Especially if its being watched, you write what you think they want to see and what you don't mind them seeing." (Jane Int 2)*

The active, moderate and silent participants controlled self-presentation either by not participating at all or through selective contribution. They did not want to take the risk of being misconstrued as inadequate and post messages that might lead others to judge and think of them as incompetent.

> *"I mean my spelling is atrocious. Just sitting and constructing an email to make sure that a) you don't look stupid, and b) it reads as you want it to read. That can take quite a bit of time. So you don't necessarily post questions that you think you should know the answer to." (Shelly Int1)* (moderate)

There was common desire to be seen in a positive light by others. This desire and personal control over self-presentation to create a positive online social identity affected how or whether the participants contributed to online discussions. Personal control was once again a significant personal construct influencing online social identity construction and online learning experiences. Yet paradoxically this personal control in a social space did not result in freedom and depth of engagement through online discussions, for different participants. Instead, it had a negative affect and hindered engagement in deeper online discourse.

Carl (active) and Cassie (silent) reflected on how personal control enforced through online message presentation limited their social learning.

> *"But in the online conferences this overlap (of engaging in deeper discourse) was not happening. Everyone was coming out with independent and declarative statements. They were saying this is my contribution, thank you very much. And they go back to being a 'lurker' rather than seeing themselves as an engaged participant." (Carl Int 1)*

"They (online discussions) were repetitive and people weren't giving their true view points. In verbal discussions people tend to air or say what they actually think. But I found that when people type or when they see it in a written form, there is a lot of crossing out and changing. You know what I mean, its not as spontaneous, its more played I suppose, and that does not make it interesting discussion. And I don't think its people's true viewpoints either. I think sometimes they are giving what they think other people want to hear, because they have got the time... I think superficial is a good word (to describe online discussions)." (Cassie Int 2)

These participants indicated that in exercising personal control through online postings learners were giving an incomplete representation of their opinions. This personal control was embedded in the formal language and structuring of online messages that restricted further discourse. The online messages were contrived and constructed metaphoric barriers, where the contributors did not want to be challenged on the points shared.

Although personal control over online self-presentation may have aimed for positive social identities, yet in practice it led to reduced engagement through online discussions. This control was influenced by the formality and judgements played in the online discussion space. While the judging tutors aimed for an open discourse, the formal controls that the learners' imposed on online presentation ultimately led to limitations in openness or depth of online discourse.

6.1.5 Conflicting social identities

A comparative analysis of online discussion constructs revealed that participants' perceptions of how they thought others saw them were different from how others actually perceived them. These participants' online social identities were in conflict with how others perceived their online presence in the same course cohort. The online identity conflicts resulted from a combination of personal control over participants social and individual engagement processes, their expected responses, and desired emotional involvement. The conflicting social representations led to differences in personal control and power that participants felt they had to influence others in online discussions.

Similar social discrepancies in social identities are evident in social psychology group studies (face-to-face), which conclude that people do *not* tend to see themselves as others see them but instead see themselves as they *think* others may see them (Hogg and Vaughan 2005, 118). Hogg and Vaughan (2005, 118) conclude that people's overestimation of their control over events and unrealistic optimism may lead to conflicting social identities.

In the present research, such optimism was apparent among active participants who contributed online with a positive perception of their social identities. The power discourses due to their dominant online presence impacted on silent participants sense of control and led to inhibitions and isolation. The negative emotional responses among silent participants (reported in a previous section) were the result of their negative self-conceptions of online social identities, which were intensified in part due to the online dominance of some active participants. The silent participants were also in turn exercising personal control by choosing not to respond to the active (and often dominant) participants online messages.

It was also interesting to note that participants with conflicting social identities from the same cohort demonstrated limited awareness and sensitivity to others perceptions of them. This further evidenced the lack of social connection between participants in online discussions. The analysis of these conflicts and lack of connection surfaced power discourses that disengaged some from online discussions and led others to continue to dominate in the online social space.

Among the active participants, Carl, Sam and Joan perceived obvious benefits of social engagement to explore topics of interest through participation in online discussions. They stated greater personal control in a social situation especially when they could engage others on issues that were relevant to their learning. They identified themselves as among the first in their cohorts to post messages on the discussion board. They justified being first to contribute online and wrote lengthy messages to engage others, and establish an online social presence. The following quotes represented their perceived social identities.

"I mean everyone was laughing at me, I always tend to think I don't want to be the first to post every time, so I hang around and wait for other people to go first. I must not keep going first, everyone will think I am a right goody two shoes. But then again I think sod it I am putting it on. It always engenders more. If you go on first then somebody will come and say yes that's good we won't disagree with that." (Joan Int 2)

"When you do a long email, you tend to get a decent response. Although it might be a query, it's still an engagement. When as a student I have put them in and I haven't had the kind of responses I thought I would have. So it gives me an insight that you kind of have to bait people. In the sense that you've got to draw them back into the conversation, and that does require a particular way of communicating. I am not saying I am an expert in that, but I can see more clearly what's what". (Carl Int 1)

Carl and Joan viewed their online contributions and social identities as positive and effective for online learning. They desired replies and acknowledgement to their contributions and felt being first would engender these responses. Despite this, other participants in their group did not take this 'bait'. For instance, Shelly (moderate) who was in Carl's (active) cohort encountered his lengthy messages. She found these messages with unfamiliar terminology both intimidating and disengaging. Likewise Claire (moderate), who was in Joan's (active) cohort, was a new IT user also felt intimidated by Joan's contributions. She expressed a feeling of helplessness and disconnection when she found two participants were dominant and appeared to be more knowledgeable than her.

"I have to say that it was tremendous disappointment that there were two very bossy people on the course. They were so dominant, but I think a lot of us felt quiet intimidated... I couldn't actually see why one or two were on the course. They seemed to know so much... It also felt that they were up there, and I was down here and a couple of others were down here. But it was very difficult for us to get a fair share of what was going on. If those two or three people hadn't been there I think it would have been a much easier course." (Claire Int 2)

On one hand, the active participants explained they used lengthy and initial online messages to develop a sense of social presence and to gain some social control over how they were seen by others. On the other hand, interviews with other participants (moderate and silent) from the same cohorts suggested that this display of personal knowledge led to negative representations of active participants social identities. This demonstrated a conflict between how the active participants perceived their online social identities as online learners and their social identities as construed by others.

This conflict may also explain the lack of response the active participants' reported for their online discussion messages. As Helen (a moderate participant) astutely pointed out the reasons for this conflict could also be the diverse range of learners' skills, abilities, learning preferences and expectations, she experienced in her course.

> *"The group has got quite a wide skill base in terms of written and verbal skills. From people who have spent 25 years in high-level advertising and who write for a living, and people who struggle to write clearly and express themselves clearly. And some people who speak ok, but their written language is not refined...Majority people on the course are really bright, really literate, very interesting people...(but others) I think are struggling on the intellectual level that they need to be working on." (Helen Int 1)*

These conflicting constructions of online social identities, individual outlooks of self and others social identities, and the different writing abilities surfaced additional power differences. The power differences led silent and moderate participants to exercise further controls over social identities as they disengaged from two-way online interactions.

The power differences and conflicts in social identities became even more evident when active participants suggested active online participation was a 'norm' for online social construction of knowledge. This attitude was in accordance with what the online course tutors' desired and expected. It also suggested that some participants might not be sensitive to others learning preferences, contexts and experiences. It is possible that they were not aware of how others perceived and experienced active participants dominant presence in online discussions. The active participants

explicated their opinion that silence in online discussions meant non-engagement. As Jon (active) explained,

> *"I think my perception was sort of what you get you give. And if you come in with the expectation that you are going to sit there and the lecturer is going to spoon-feed you and the online system is going to spoon feed you and the lecturers have all the answers and you don't, then that will be your experience of the course." (Jon Int1)*

Such concentrated views may have contributed to the active participants unawareness of the negative emotions experienced by some silent participants.

As suggested in Helen's quote (see above) the power discourses were more prominent as some participants felt more confident about their English language usage and online communication skills as compared to others. These discourses are evident in the analysis results in the next section.

6.1.6 Language and cultural differences

As already indicated in the previous chapter, language was an important component of knowledge construction in online and blended courses. The online space that relied on text-based communication required language as a matter of conceptual necessity. It required participants to be able to combine thought into language and have the ability to present it in written form. The following three subsections report on how language ability affected participation in online discussions and online social identity construction. The first aspect of language identity construction relates to second or third speakers of English language who concluded online discussions were not adequate spaces for their language socialisation. The second aspect identifies the cultural differences that affected overseas participants from English and non-English speaking countries. The third aspect reports on the differences in online communication skills among all (home and overseas) participants that influenced online participation.

6.1.6 a Language socialisation for overseas participants

Language learning is the part of the enculturation process that begins in early years of human life. It aids the awareness and consciousness of self and others (Vygotsky 1962). In this research, the overseas participants for whom English was the second or

third language identified themselves as silent in online discussions. They highlighted that language socialisation through online discussion participation during online and blended courses was neither open nor developmental.

Like the home learners, overseas participants also sought positive social identities. In addition they wanted to improve their English language skills and wanted to establish new social-linguistic identities as overseas learners in the UK. Belz (2003, 209) states that learning a second language is a process of *"identity construction as individuals try to align themselves with groups, communities and/or sets of interests, values and beliefs"*. The overseas participants in this research specified they were seeking to build learner and language identities through active socialisation with other English speakers in their courses.

These participants concluded that face-to-face social space was more conducive for socialisation in English language and reconstruction of new socio-cultural identities as compared to the formal online discussions. They gave two main reasons for this difference. Firstly as Karan highlighted in Chapter Four, face-to-face communication ensured a response and engendered confidence in English language, in contrast with online discussions where the lack of response led to negative emotions and reduced confidence in English writing.

Secondly, the overseas learners compared their English grammar with the English-speaking learners in the academic online discussion space, and felt inadequate to contribute. Although these overseas learners had fulfilled the course entry requirements for English language competency, they did not feel confident in academic online use of the language. They wanted to be more competent English speakers through socialisation with others who were experts in the language. They acknowledged that participation in online discussions might be good practice to improve written English. Yet they did not use online discussion boards in this way because like the home learners they wanted to control language and portray positive identities in the tutor-monitored online spaces. They concluded that formal online discussions gave limited opportunities for enculturation and language socialisation.

The deconstruction of their experiences suggested that online discussion spaces did not acknowledge diverse language abilities and cultural identities. The online discussions did not provide them the space, opportunity, freedom and safety to scaffold English language identities as overseas learners in the UK. The formal language used in online discourse was either beyond these participants understanding or it provided limited opportunities to socialise and practice academic and cultural use of English language. It was not a space where participants felt free to deconstruct their not so perfect English language identity and reconstruct new ones.

The overseas participants also indicated that their multi-lingual identities and imperfect English usage were more acceptable in face-to-face classes, where there were other learners with similar language differences. Jose and his multi-national peers on the blended version of the course (which included Karan) shared a different sense of identity due to their English language variety.

> *"So all of us are from different parts of the world, one from India, two from Nigeria and me. So its like, but they all studied in English and I studied my degree in Spanish. So its different for me. But it is easy to talk to them and discuss and check my knowledge with them... You have to be formal if you are going to participate online, because sometimes you don't know other people so you have to be quite formal... And talking to classmates is very informal...The thing is, for me it is difficult to write in English...basically because I don't want to put something down that I am not sure. Or for the others that is stupid or.. and also because I have to check the spelling and grammar. It would take me ages, so I preferred not to do it." (Jose' Int 1)*

The overseas learners felt accepted for their multi-lingual and multi-ethnic identities in the classroom space and felt freer to communicate in English. They felt more open to build a sense of group identity because they shared a sense that their less than perfect grammar was accepted. On the other hand, formal English usage in online discussions dominated by English speaking home learners on the online version of the course, led these overseas learners to feel out of place and less competent in English language usage.

Similar alternate collective identities were observed by Lam (2004, 44) in a study of second language socialisation in a bilingual chat room by two Cantonese speaking Chinese students in America. Lam's (2004) study demonstrated that using English for communicating on the Internet involved constructing new identities for conversing in English language. The social identities construed between two Chinese speakers emerged with a mixed-variety of English used to build relationships with each other, and also to develop a level of efficiency in English language. Their use of English on the Internet distinguished Lam's research participants from both monolingual English speakers and monolingual Cantonese speakers (Lam 2004, 59).

In a literature review of language practices and identity in virtual communities, Lam (2004, 48) has concluded that language use in online communities is related to the socially dominant cultural representations and collective identities. In the present research, the overseas learners speculated that home (UK) English-speaking learners populated the online discussion board. There is a possibility that the discussion space was socially dominated by well-written English language by individuals who had shared cultural and language identities. These dominant English speaking identities may have influenced the overseas learners like Jose', Karan, Carmel, Max, and Mat not to pursue online social identities (Appendix 1, Paper 5).

The overseas participants found online discussions offered limited opportunities to improve their English language and construct new language and cultural identities as overseas learners in the UK. Online communication and construction of new language identities for learners, who are not first speakers of English language, is a largely unexplored field (Lam 2004, 44). In the online and blended courses there may be an assumption that the Internet will provide an informal space for overseas learners where they could feel free and safe to develop new socio-linguistic identities. The difference in language socialisation experiences of overseas learners for whom English was not a first language, calls for further study to question if online learning spaces enable informality and openness for these learners social construction.

6.1.6 b Cultural differences in learning

The overseas learners from English and non-English speaking countries identified cultural and academic differences in the UK and their home countries. They described

the differences between the English used in the UK academic contexts, and the English used and learned in their home countries. They also stated the differences in teaching practices between their home countries and the UK. They stated they had to consciously change their ways of knowing in the UK online learning contexts. They concluded the need for more time and opportunities for enculturation into these different ways of knowing, saying things, and learning about the norms and expectations in a new country.

Jon, who was English and an active participant, observed differences in cultural and formal educational expectations of overseas learners on his Masters course. He proposed that the overseas learners might have felt inhibited in online discussions because their cultural backgrounds did not expect them to challenge and discuss issues openly in front of the tutors.

> *"I think in some cases there were cultural or experience factors in their (overseas learners) previous education, which might lead them to interact less. I think we got a strong impression that depending on which country or which education culture you come out of, there was a reluctance from some people to challenge and interact with lecturers. The lecturers weren't there to be challenged, or were not there to be put on the spot. ...UK students were more interactive to start with. So some people (overseas learners) picked that up from other backgrounds and some didn't, and some never changed over the course of the whole course." (Jon Int 1 & 2)*

As the course progressed Jon observed confidence among some overseas colleagues as they became more willing to take risks to challenge tutors and peers (online and in class). Some others continued to resist active participation in both face-to-face and online interactions.

For overseas learners learning in English language in a British context involved learning about the associated social and cultural practices. For learners from countries where the norm was not to ask too many questions, this meant changing their cultural views of the lecturers. The shift in cultural differences was even more evident when two Australasian learners and one American learner from online tutoring and nursing courses identified the initial challenges in learning about the British higher education system and its expectations.

"I am from New Zealand... I am here just over a year... Its alright. I mean any change is frustrating and it takes time, because you don't understand. I am still not familiar with all the British terminology...We have all got different ways of saying the same thing isn't it." (Cassie Int 1)

"And, another learning experience has been understanding the British university system because I have had Australian and American experiences. So, its quite fascinating ...as an external person I didn't see the true light... coming into a British University is quite a shock to an Australian." (Carl Int 1)

For overseas learners who were second or third speakers of English, the language differences made the experience of these cultural differences even more profound. There was a gap between the overseas learners minority norms of learning, and the dominant education and linguistic ideology driving the UK online and blended courses (Bourdieu 1991). These differences in cultural norms were also significant reasons why second and third speakers of English language discarded online discussions from their knowledge construction processes. There was no suggestion by the overseas learners that these cultural differences were considered by their courses or if there were additional opportunities to acclimatise and learn about the norms in the UK higher education system, much less the norms of an English speaking formal online discussion space.

The socio-linguists (Gee 1996) work on language socialisation concludes that learning in a different (or second) language involves enculturation into the cultural norms of the language. These norms cannot be overtly taught but are implicit in cultural assumptions and beliefs. Scaffolding and supporting interactions with others confident in the dominant or expected language usage can help to reconstruct the explicit and implicit norms of a language (Gee 1996). The above analysis indicated the need for similar scaffolding for overseas learners studying for online and blended courses in the UK.

6.1.6 c Online communication skills

The evidence suggested that online writing and communication skills, language skills and etiquette may have influenced online relationship building, gaining a sense of connectedness and feeling a sense of control, for home and overseas learners.

The formal online language used to create positive social identities empowered some participants but disempowered others. These power discourses were due to the variations in online social literacy and previous experiences in online communication. The inequities in online skills were because some participants were better equipped to use online discussions and benefited from online participation as an effective tool for social construction than others. Good English language skills represented more power and control over engagement in online discussions. The participants (active, moderate and silent), who appeared more confident in written and spoken English, were mainly but not all, of English origin. These English learners had varied online writing experiences but were able to call upon their English language skills to ensure clarity of language and structure in their online messages. They identified the need for succinctness and simplicity in all online communication.

Those with lower levels of English language ability (home and overseas learners), lesser confidence in e-writing and less time to construct clear, concise and accurate messages with no grammatical errors, identified lesser control. These participants also identified a lack of sense of connectedness with others in the online space. The differences between participants' online communication skills and confidence for e-writing was significant because it led to emotional disconnectedness of those who did not feel confident. These differences also surfaced additional power differences among participants in the respective courses.

Helen's (moderate) confidence in English language and past experiences in online communication at work led her to easily apply these skills to the formal online learning context. Despite her preference for individual learning she used her command of the English language to ensure successful online interaction.

> *"Emails, I have learned to be quite careful... So I write an email, step back and read it again. So you get rid of any difficult constructions and awkward sentences or difficult vocabulary. That is just a process of thinking who you are writing to.*

And if you want an unambiguous reply, you have to set out the questions very clearly. So I think and prepare the online message." (Helen Int 1)

As stated previously, all participants identified the need for restrain and control in online discussions through formalised and less open language. The English learners like Helen, with past experiences in online communication and a good command of English, could easily control how they used the language in the formal online context. They carefully chose language and content for their online messages to present a positive language identity. Despite their reservations about online discussions, they were successful in participating in online discussions and establishing an online social identity.

In contrast, online formal communication was threatening and challenging for participants who were new to the online medium, did not feel socially connected to the group, or had recently arrived in the UK. Even home learners like Shelly (moderate) who had limited online discussion experience found the language used in the formal online discussions too complex and unclear for comprehension. Her lack of understanding of others messages contributed to her feeling excluded from the online discussions.

"I think there were a lot of people on the course certainly did these high brow discussions...It just didn't seem logical to me that you are studying something and yet you know you would exclude people by your language... I am a sort of person I have always succeeded in whatever I have done academically. I have never really failed. And this is the first time I felt inadequate about what I have done." (Shelly Int 1)

The participants', who were new to their subject areas, also expressed similar feelings of intimidation and exclusion due to new terminology and complex language used in formal discussions. This inclusion and exclusion experienced by different learners in online discussions due to online language indicated power differences. It identified the need for online communication skills where learners may be more sensitive to their peers' responses. For example, Jon identified those with past online communications experience and skills would know how to benefit from online participation.

"If you have experience of using the chat rooms in the real world, you understand the etiquette, otherwise people don't. Then people are taking too long, or saying too many things at the same time. It is about knowing that you are not emailing people, you are sharing in short chunks. You are not emailing people, you are having a discussion." (Jon Int 1)

The silent learners, who felt they had inadequate skills and experiences for online communication in a formal context, called for training during or before the course to develop online discussion skills.

"Why would anyone bother? There should be more of a training process about using the medium, about getting the humans to use the medium. The discussion may be about anything, it does not have to be about the subject. It could help people become more comfortable." (Lara Int 1)

These participants also indicated the need for greater awareness of others and sensitivity to others. They desired to engage in an online discourse where they would not feel intimidated and excluded by others online messages.

The disparities in online communication skills indicated power discourses over the online discussion space. The differences in past experiences in online communication, English language competency, and subject confidence added to these power discourses. In this context some benefited and felt included in online discussions, and others felt excluded. The analysis concluded that the participants' courses that expected online participation needed to take account of the differences in English language literacy, past online experiences, and confidence in online communication. The silent and active participants in this research suggested future courses could include online social literacy skills and online discourse development skills during course induction. This recommendation is considered in Chapter Eight.

6.1.7 Professional socialisation and the role of online discussions

The participants were all involved in developing new professional roles or extending their existing roles in applied and practical disciplines (see Table 4.1, Chapter 4). Alongside constructing online social and language identities for learning, all participants were also seeking to construct and expand a sense of identity and a way

of being in their new or developing professional roles (Becher and Trowler 2001, 47). As already identified in the previous chapter, relevance and tacit sharing through informal online and offline discussions were important for linking theory and practice. It helped participants to discuss, practice and experience professional role socialisation.

The informal and face-to-face social discourses helped to build confidence, theory-practice links and new professional identities, whereas online discussions did not always promote professional identity construction. As evidenced in Chapter Five, relevance of online discussion to professional learning needs were central to whether the participants used online discussions or focused on work-based discussions in other social contexts. For online tutor-learners there was an embedded relevance of online discussions that assisted in professional identities construal as new online tutors. In contrast, qualified nurses' construed online discussion topics as 'less relevant' for their professional role and identity development. Unlike online tutor-learners, online discussion participation was not a rehearsal for their expanding roles.

For participants, who were new to the profession (e.g. nurses and geographic information science learners), learning activities to construct professional identity included social discourses with others going through similar role identification processes. It also involved taking opportunities to learn from profession experts in the practice and theory settings. These participants stated that online discussions were not affective tools to deconstruct experience, spark ideas or gain a feeling or sense of being in a profession. They preferred face-to-face informal discussion to share experiences, verbalise and bounce ideas, and explore links between theory and practice.

The new professional learners desired open and informal social discourses with professional experts in academic and practical settings. They perceived lecturers as professional experts, and valued openness of relationships and informal socialisation opportunities with them. They construed VLE based online discussions as formal, rigid and narrow that did not allow for open and informal questioning sessions with the experts. They argued face-to-face discussions or one-to-one email feedback was more conducive to disciplinary socialisation.

It was interesting to note that both new and old professional learners regarded online collaborative tasks based on prescribed scenarios (including problem-based and enquiry-based learning) useful for theory learning but incomplete to build their professional identities unless it involved hands-on practical applications. They also identified limited flexibility to explore one's professional role within the confines of pre-defined discussion topics. They stated online course discussions were too contrived and formal to experience the reality of professional practice. In their course designs, participants concluded that professional identity and socialisation were best supported through hands-on practice and face-to-face informal discussions, and not through online discussion participation.

6.2 Practical issues for online participation

The above themes of online social identity construction that led to differences in online participation were also influenced by other external contextual and practical influences. The evidence of the external influences as described by the participants challenged the popular rhetoric that e-learning was flexible and easily accessible for all working professionals. While all participants identified with the ease and flexibility to access learning material and discussion facilities without attending the University, there were participants who highlighted the difficulties in accommodating e-learning around work and gaining regular access to Internet facilities. Thus online course design may have accomplished successful transmission of knowledge, but for the research participants it did not enable learner-centred and flexible learning experiences.

The analysis showed that course assumptions were that all learners could accommodate learning around work, had easy access to the online learning space, and had adequate online communication skills. The evidence showed the all participants did not have equal time and IT access for online learning. The differences in control over these practical aspects of learning surfaced inequities, which led to differences in online discussion participation. The following sections report on the differences due to employment responsibilities, IT access, and VLE access. These results also

illuminate links between control experienced during online social identity construction and control due to these practical issues.

6.2.1 Employment responsibilities, interest and flexibility

The results demonstrated that the emphasis on online communication and intense learning schedules was not flexible for learners with employment responsibilities. The twenty-nine professional learners in this research expressed the need for structure in their learning. Yet they also wanted this structure to consider their personal situations, learning interests and learning preferences. Although the participants (including silent participants) found online access to learning material flexible in one sense, the analysis results suggested that academic outlook on flexibility did not always consider participants' employment responsibilities, time for learning and personal learning interests. The participants who challenged flexibility in online and blended courses stated that the course structure was pre-defined and best suited for traditional undergraduate full-time learners. As these learners tried to accommodate to the pre-set requirements, they had limited time to engage in online discussions. This brought to question the flexibility of online discussions as a social learning tool.

According to these participants, their traditional course structure did not take account of their work commitments and assumed they were available at the same time as the full-time traditional learners. The online and blended courses that uploaded course materials onto the VLE in small chunks were not flexible for the working participants who needed to fit learning time around their personal and professional tasks.

> *"They have not really grasped the idea that students do have big variations in the amount of time that can be devoted to reading and so on. The semester ended for me in June after exams. Now I didn't get a reading list or anything until mid-October. So that was four months nothing happened. So it didn't prepare me to plan when I had the time. I just got it when they were ready. And then everything was packed into (a small time). I think if you are doing a course for a part-time learner, you do really need to adapt to the needs of the student. For me early September is my quiet time, when I can do my reading. But I didn't have a choice." (Rob Int 1)*

The working learners like Rob wanted the online course materials as and when they were ready. Rob stated that this might not fit with the nine to five, Monday to Friday working hours of the University system, but would be more flexible for his learning. Furthermore, the silent participants explained that lack of flexibility in course structure led them to prioritise external work responsibilities and course requirements. This left limited time to engage in online discussions, and when they were ready for discussion, the discussion had moved on.

Apart from flexibility in time for learning, the participants stated that online course designs and topics of study were not always open to alteration by learners. The preset course structure meant the participants had to adapt and follow what was required in the course. Shelly (moderate) an online tutor-learner commented,

> *"The course had been constructed already and you had to work your way through it ... I don't know, even though it is online, I think at the end of the day, I think it has been planned and I have gone along with it. It hasn't allowed me to deviate or look outside." (Shelly Int 1)*

The lack of flexibility in time and structure even led the full-time blended learners to focus on course requirements. For those who needed to be part-time, it left limited time to explore topics of personal interest or time to participate in online discussions. Kay reported she wanted to explore certain topics in depth but did not have the time to do so because she was busy meeting the course requirements.

> *"I still feel slightly disappointed that there could have been more time to pursue the topics I really wanted to. The thing that I sort of found now that I have been concentrating so much on those assignments... I haven't stopped to kind of let it all sink in, that hello, I am supposed to be learning here. But I haven't let it all sink in. I am just doing it, tick, doing it, tick, doing it, doing it, doing it." (Kay Int 2)*

The analysis highlighted that these flexibility issues might be different for postgraduate working learners as compared to the traditional full-time regular university-based learner. The analysis concluded the meaning of flexibility in online and blended course structures needed to take account of the differences in learners external contexts including employment responsibilities, time for learning and

learners interests. Lara (silent), who strived for an integrated learning space for her academic and employment needs, suggested this could be achieved via a course mediator. She suggested the need for personnel who would have a pastoral negotiating role. The negotiation may support her in extending her learning through space and time, than just striving to meet the pre-set course requirements.

6.2.2 Equity issues in IT access

The analysis results showed that information technology (IT) access during learning influenced whether participants experienced personal control during online discussions or not. The differences in regularity, ease and sense of control over IT access surfaced inequalities in online learning and in online discussion participation.

The participants in full-time or part-time employment downloaded the learning materials at work or in the libraries, and studied the learning materials offline in their home environments. IT access at work was not straightforward for these participants. Their personal control over IT access differed according to their control and power status at work. Those with most control over IT access participated more in online discussions. Likewise, the participants with the easy home-based broadband Internet access identified themselves as active in online discussions.

Carl (active), Claire (moderate), and Helen (moderate) who relied on Internet connection at work, had high-status at work. They had greater freedom to regulate their working day. With Internet access in their private offices, they also had greater control over Internet use for learning. These participant were free to swap between online and offline study, and to use the online space for individual and social deconstruction of information. Despite their different social and individual learning preferences, these participants were regular online discussion board visitors.

This was in contrast with nurse learners who depended on whether their hospital ward placements had Internet access and whether they were allowed to go online before or after their shifts. These nurses had limited control over their IT access at work and it meant they could not regularly communicate online to complete their collaborative assignments. Likewise online participants, Shelly (moderate), Jaya (silent) and Lara

(silent) were in subordinate positions and did not have regular IT access at work. These participants had less control over online access and were occasional visitors to the online discussions boards.

The differences in control over IT access at work added to the reasoning why some participants easily benefited from online flexibility as purported in the popular e-learning rhetoric, while others did not. The differences in IT access meant that online discussion space did not form a comparable constituent of every participant's learning context. The participants who had limited IT access prioritised individual learning because it allowed them more control, while those with easier access had the choice to participate regularly, build an online social presence and feel empowered through active participation.

Claire (moderate), who was a nurse trainer in a NHS Trust, illustrated IT access as a power issue for nurses working on hospital wards. Her nurses felt they could not ask the ward administrators to give up the only ward computer to do their own work, and nor did the administrators feel any obligation to share IT access with the nurses.

> *"...some people that I work with, don't really have the self-esteem, or the time, or access to a computer. The ward managers have their own computers; the administrators have their own computers. There is a question of actually nurses saying and having the self-esteem and time, to say to the administrator that actually I would like to come to use the computer just for half an hour... So it is about getting students <u>real</u> (emphasis) access...The administrators feel very powerless and unhappy but in fact they are strong and have the power to consider nurses and give them some time with the computers." (Claire Int 1)*

In the above statement, Claire highlighted the important issue of the lack of power and control experienced by her nurses due to their subordinate positions at work. These power and control differences were also reflected in the variable IT access among my research participants. The differences in IT access due to the participants' status at work indicated the need for online courses to consider where their learners might access the Internet. They needed to consider how different learners might be supported to gain control over their access and use of the online learning space.

6.2.3 Control over VLE access

The initial access to the Virtual Learning Environment (VLE) also influenced the participants' experiences of control and influence over the formal online discussion space. Overall, the research participants stated they had limited control over the VLE space that was monitored and controlled by the University and the tutor. The analysis showed that early VLE access established whether participants felt any sense of ownership and control over its discussion space. Easy initial VLE access increased the chances for participants to connect with others in the online discussions and feel part of a group. On the other hand, difficult initial access reduced these opportunities and led to feelings of exclusion. The participants who felt excluded chose alternative sources for individual and social engagement, and discarded VLE discussions from their learning.

Fran (silent) was among the learners who had initial difficulties in VLE access. The difficult access led her to conclude that the VLE was not a flexible space to meet her learning needs. She was silent in online discussions and relied more on individual learning, which she could control and chose more freely.

> *"But here running around trying to register so I can get into this (VLE), actually means I start from a negative position. And then well they say, oh VLE is down. And I think great. And on the phone answering machine says that they will get back to you in two days. For busy people the idea that somebody will sort it out in two days is very frustrating. Because we only have kind of short windows of opportunity to study... I will then choose other methods, because I am in the right place and kind of frame of mind to actually be receptive to learn. ... So kind of going back to me being silent participant in the course, I would have to think what is the best course of action given the circumstances. Because the whole kind of idea that is pushed is about learning at a time and place that is convenient, given other responsibilities, work, blah! But if I my headspace is right and I have the time, I am gong to do it. Just not getting into VLE or whatever it is, is not going to put me off." (Fran Int 2)*

Similarly the nurse learners experienced initial access difficulties and *"someone"(Ellen Int 1)* wiped off all their online messages and attachments. This led

to feelings of loss of trust in the VLE as a resource for communication. The deletion of their online discussion postings reinforced the presence of an external, unknown and invisible authority that had greater control over the learning space. This experience diminished any sense of belonging and responsibility to use the online space for social interaction. The group instead used personal emails, where they could control when the 'authoritative' tutors had access to the discussions.

Three participants experienced initial VLE access problems due to their personal computer settings. The lack of compatibility between personal computer settings and VLE setting requirements meant these learners were excluded from initial online socialisation. The discrepancy between those who had easy initial access as compared to those who did not, led to unequal opportunities for gaining an early online social presence and learning about others. Lara (silent) stated that when she finally logged on to the discussion group the discussion between others was already going on and there was no room for a late arrival like her to join. The VLE access problems made it difficult for the latecomers to gain a sense of belonging in the established online community.

The above differences in VLE access and differences in the sense of ownership of VLE space influenced the control experienced in online discussions. It also suggested the need for courses to ensure more seamless administration for the VLE access.

6.2.4 Subject and gender differences

It is useful to point out that the above results were related to all the professional subjects selected for this research. The research drew learners from each subject who identified themselves as silent, moderate or active in online discussions. It included participants from each subject who had been actively involved and those who felt excluded from online discussions. The analysis did not reveal if subject difference made a difference to how professional learners engaged and constructed meaning in online and blended courses. Due to the professional nature of learning all participants emphasised the need to link theory to practice irrespective of the level of hands-on practical element in their course designs. The research results did not indicate if the above differences in online social construction were related to the subject studied.

It is also important to state that the research could not identify and categorise gendered ways of knowing in online and blended courses. Both male (n=10) and female (n=19) participants highlighted the significance of personal constructs, control and emotions, and identified the limitations of formal online discussions in social identity construction. Both male and female participants were among the dominant and silent learners and experienced power differences. Future research and practice could extend to examine if subject and gender differences in online learner populations make a difference to the ways of knowing.

6.3 Conclusion

This chapter has uncovered social, emotional and practical conditions that the participants identified as critical for participation in online social learning. The online social identity construction processes uncovered in this analysis confirmed the significance of personal control and emotions during online discussions. These processes add to the understanding why some participants were silent in online discussions, despite their preference for involving others in the knowledge construction processes and despite their desire for a sense of belonging. The results from individual experiences helped to surface group influences to explain why some learners experienced greater personal control and positive emotions in online discussions than others.

The social identity construction processes that affected discussion participation included online social presence, controlled language and formal online presentation, conflicts in online social identities, limited opportunities for language enculturation and professional socialisation. The analysis results concluded the importance of early online socialisation. The evidence highlighted the importance of feeling connected in an online group and developing a sense of social presence early on in the online group forming process. This was concluded important because the participants who were successful in establishing an online social presence early on, experienced positive emotions, felt like insiders, contributed to building the group norms and experienced personal control during online discussions. The analyses also highlighted that the

participants may have needed time to build trust and a sense of belonging in an online group, where they could feel safe to share ideas and were open to challenge by others. This emotional condition of 'feeling part of' the online group was a significant building block for online social presence and online social identity construction.

The analysis concluded that personal control and emotions experienced during early socialisation helped to form the basis for the participants' online social identity. The negative emotions and inadequacy feelings among participants who did not get a response suggested that early socialisation might be more important for online and blended courses where communication is largely online and non-verbal signals are missing. The power discourses surfaced because some participants' experienced positive emotions and control while others did not. This again highlighted the significance for developing an early online social presence. The evidence on practical issues and language ability also indicated the need to account for variable access and online communication skills before the courses began, for the different participants to benefit from online socialisation.

The results demonstrated a paradox of personal control and openness in online discussions. It showed that the participants imposed control over their online presentation through formalised language that ultimately limited the potential for deeper online engagement. The imposed control in formal, judged online spaces resulted in online course discussions that limited free and open engagement of ideas and feelings. Instead it became a ground for positive self-presentation, acknowledgement by others, and a space to exercise personal control over social interaction. It also disengaged participants who did not experience depth of engagement, a sense of connectedness and trust in others.

The analysis of different levels of personal control experienced through online participation and initial online socialisation showed conflicts between online social identities of participants. With these conflicting social representations, some participants continued to feel more in control while others disengaged from online discussions. This difference in experiences added to the power discourses experienced during online learning.

The language identities sought by overseas learners led to the conclusion that as compared to face-to-face discussions formal online discussion boards were less conducive for language socialisation, enculturation and socio-lingual identity construction. This calls for further study into the impact of formal online discussion spaces and social identity construction for overseas learners, who may be new to the English-speaking (written) academic spaces.

The analysis of professional identity construction suggested that online discussions were either not relevant or too formal for disciplinary socialisation. The participants construed online discussions as theoretical, formal learning spaces that did not enable a link with practice and hands-on experience. This conclusion indicates the need for further research and development for more integrated learning design and online discussions to support professional development.

The latter sections in this chapter identified practical issues including the time for learning around work responsibilities, control over IT access at work, and a sense of control and ownership over the VLE space. These issues re-emphasised the impact of personal control and power discourses during online social construction of knowledge. These practical factors alongside the social psychological factors challenged the e-learning rhetoric and assumptions about flexibility, accessibility and openness in formalised online learning spaces. It was concluded that the notion of flexibility in learning might be different for different learner populations. For instance, the practical issues for social construction may be different for online professional postgraduate learners as compared to face-to-face traditional undergraduate learners.

Throughout the analysis the different experiences of control and emotions have surfaced power discourses in online and blended socialisation. It was conclusive that online discussions, online learning spaces and online and blended course designs were empowering for some participants and disempowering for others. The power discourses affected how much the participants' felt they gained from online discussions. These differences affected whether they felt empowered to construct and expand their social, linguistic and professional identities through online participation. However, it must be stated that these power discourses were not fixed but in continual

negotiation as the participants' construed and engaged in learning experiences for the ongoing pursuit of personal control and emotional satisfaction.

In summary, this chapter has reported on analysis results that highlight the social psychological process and practical issues during online and blended postgraduate courses. These processes are comparable to the face-to-face group studies in social psychology (see Hogg and Vaughan 2005). The findings of the present research add to the understanding of educational and social cognitive processes in an online, formal learning and text-driven medium. The research adds to the body of knowledge the deconstructed social psychological processes as experienced by professional postgraduate learners in an online medium. It uncovers the impact of this new medium on social learning engagement for postgraduate adult learners in formal education. The analysis has helped to show that the very nature of the online communication medium that is formal and open to judgement by those in authority, affected social identity construction processes for learning. It has also helped to reveal the power and control influences on social identity construction and learning discussions, in a written online medium.

The next chapter brings together the analysis results reported in the previous and present chapters. It reflects on the critical themes in these chapters to offer answers to the research questions and to identify an emerging theory of online learning. The theory challenges the popular application of Salmon's (2000) five-stage model and supports provision of recommendations for the future online learning practice and research.