

**E-JOURNALING:
FOSTERING TRANSFORMATION THROUGH
INTERDEPENDENT LEARNING**

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A thesis submitted in partial fulfillment of the requirements for the
Degree of Master of Education
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2011



Declaration

Name of candidate: **Mary Denise Hayes**.....

This Thesis/Dissertation/Research Project entitled: **E-Journaling: Fostering Transformation through Interdependent Learning** is submitted in partial fulfilment for the requirements for the Unitec degree of **Master of Education**

CANDIDATE'S DECLARATION

I confirm that:

- This Thesis/Dissertation/Research Project represents my own work;
- Research for this work has been conducted in accordance with the Unitec Research Ethics Committee Policy and Procedures, and has fulfilled any requirements set for this project by the Unitec Research Ethics Committee.

Research Ethics Committee Approval Number: ...**2008: 846**

Candidate Signature:Date:

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Abstract

The aim of this research was to investigate e-journaling as a strategy to develop interdependent learning. In examining interdependent learning there were several elements, this study focused on; promotive interaction within cooperative based learning groups, with a particular interest in sharing together and learning alone. In order to investigate this phenomenon a traditionally solitary activity, the reflective journal was created in an e-learning environment, as an e-journal, where students could participate in both self reflection and peer discussions.

This qualitative interpretive research was organised as a case study with three groups of learners and one group consisting of their tutors. Three groups of learners were invited to take part from three faculties that utilised journaling. In order to examine the effectiveness of the two strategies the participants were invited to reflect on their experiences of the traditional journaling and e-journaling and compare the two. Data was gathered through interviews, focus groups and online observations. Data gathered from the learners was validated by the tutors' experiences of teaching and observing learning through traditional journaling and e-journaling.

This project revealed that when a climate of positive interdependence is encouraged, e-journaling is an effective teaching and learning strategy in developing a critical dialectic that fosters transformation. Nevertheless, e-learning does not suit all learners, this depends on the context and content of journal. This finding is significant in terms of developing e-learning courses. Therefore, care and consideration must be taken during the decision making process, the development and design of online courses. In the initial stages of course development educators need to consider whether the e-learning environment reflects the philosophies that underpin professional practice.

This research provides evidence that even those learners who did not visibly participate online were still learning through reading, observing and reflecting on peers' experiences and interactions, still participating in the learning process.

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To my wonderful children who unconditionally sacrificed, and supported me with love and encouragement through this process.

Thank you

Dedication

To

Daniel and Emma

If I can do this, you can do anything

and

In loving memory of

Gwyneth

1918-2006

My Guru, my Mentor, my Saviour

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Chapter One:

Introduction

Chapter One: Introduction

Introduction

The genesis for this thesis came from observations over years of utilising reflective journals in formal and informal learning environments. Teacher education courses attended lead to investigations in literature around the effectiveness of learning journals, the theories that underpin reflective and experiential learning. An interest in peer and self assessment lead me to explore and evaluate literature around learning together and learning alone. What became immediately apparent was the gap in the literature between the two concepts.

The inspiration for the topic of this study crystallised when, as a student in a professional development programme, I experienced feedback from peers after journaling in an online classroom forum. The synthesis of reflective learning and the social space provided by the computer mediated communication took the learning experience to new levels, not just for my peers, but also from my perspective as a student, tutor and researcher; raising a series of questions needing to be answered.

The aim of this study was to investigate e-journaling as a strategy to develop interdependent learning, whereby fostering a positive cooperative climate for sharing, in which students can develop and strengthen independent skills. There are several elements needed for successful interdependent learning, this study focused on one element, promotive interaction within cooperative based groups, with a particular interest in the movement between sharing together and learning alone. The definition of interdependent learning is examined and identified in Chapter Two. In order to investigate the gap between learning together and learning alone a traditionally solitary activity, the reflective learning journal, was created in an online social environment, an e-journal, where peers could read and share each others experiences with ease. Experiences of learning were described from the participant's perspective.

This study examined to what extent interdependent learning was occurring within both types of journals, and the depth of learning that occurs as a result of the movement between thinking and processing information alone and sharing experiences together.

For the purposes of this study several terms are used in relation to the learning environments: e-Learning is defined as: 'Learning that is enabled or supported with the use of Information Communication Technologies (ICT) (Ministry of Education, 2009). These ICT's include the internet and the Computer Mediated Classroom (CMC). For this project Moodle was utilised. Moodle is an Open Source Course Management System (CMS), also known as a Learning Management System (LMS) or a Virtual Learning Environment (VLE). It has become very popular among educators around the world as a tool for creating dynamic learning environments.

Background – The Educational Context

Tertiary education in New Zealand offers post-compulsory school education that includes industry training, adult and community education, foundation studies and study at tertiary education organisations such as universities, polytechnics, wānanga and private training establishments (PTE's). This case study was carried out in a New Zealand Tertiary PTE offering a range of courses in Natural Therapies, where traditional experiential reflective journaling is currently being used as a learning strategy by Natural Therapy students.

The term Natural Therapies is an umbrella term used by the Natural Therapies Council (NTC), the New Zealand Natural Health Practitioners Board (NZNHPABI) and the PTE's alike. Natural Therapies encompasses Traditional Medicines, Complementary Therapies, Integrative Medicine, and Alternative Medicine/Therapies (Spencer, 2003). This particular PTE had no e-learning components in their courses. However, the researcher had developed a strategic plan and was facilitating the implementation of blended or hybrid courses; a mix of face-

to-face and online components, in order to create more flexible learning that would provide students with anytime access to their courses, course notes, teachers, and student support facilities (Guri-Rosenblit, 2005; McConnell, 2006; M D Roblyer, 2003a). The implementation of e-learning was in response to New Zealand Governments key decisions in 2003 relating to learning online or e-learning:

- To facilitate tertiary education providers working in partnership to develop e-learning;
- To improve access to tertiary education; and
- To ensure that New Zealand continues to be internationally competitive in e-learning.

The aim of the Ministry of Education was to develop New Zealand's e-learning capabilities that would contribute to "a networked, flexible tertiary education system offering increasingly accessible, relevant, high quality learning opportunities for all New Zealanders" (Ministry of Education, 2006, p. 7). Learning technology developments have had significance for New Zealand as a small open economy in an increasingly networked global economy, where knowledge-based innovation was becoming a source of sustainable competitive advantage. These decisions had impacts across the education sector.

The Ministry of Education's E-learning Action Plan for Schools 2006-2010 was built on two ICT strategies; *Interactive Education* and *Digital Horizons*. Digital Horizons Learning through ICT (Ministry of Education, 2002), required that teachers carry out "new ways of teaching" and initiate and facilitate "new ways of learning" (p.3). The action plan provided goals for e-learning over the following four years. It also planned how school-focused initiatives would fit in with and support the wider range of digital and ICT strategies being co-ordinated and supported by Government (Ministry of Education, 2006). An additional strategy "Learning for Life" (Covey, 1989, cited in NCER, 2004) was to set the direction for reforming post-compulsory school education. The purpose was to make post-compulsory education accessible, student centred, with nationally recognised standards in order for the students to

integrate through “seamless transitions” between compulsory schooling and tertiary education and training.

The Tertiary Education Commission, a Crown entity, is responsible for leading the government's relationship with the tertiary education sector, and for policy development and implementation. The Tertiary Education Commission's functions and responsibilities cover all forms of post-school education, training and funding of training providers. Therefore, e-learning was an unknown phenomenon in New Zealand. This was reflected in a statement from the Tertiary Education Commission's website regarding e-Learning strategies. The Tertiary e-learning Research Fund 2004 stated that research projects would determine the current context of e-learning in New Zealand. Particular emphasis would be placed on learners, teaching, staff development, and organisational issues. Researchers were to identify and analyse the significant trends affecting e-learning and the broader contextual factors that might have an impact on tertiary e-learning in New Zealand in the future.

The New Zealand Government and Ministry of Education were taking major steps in order that New Zealand ‘keep up’ with other countries belonging to the Organisation for Economic Co-operation and Development (OECD), through the creation of new policies and through the investment of money into technology and research.

However, at the outset of this project the integration of e-learning into tertiary education in New Zealand was slow according to a report by National Centre for Education Research (NCER) (2004). The report found that only 49 percent of all tertiary students had some degree of web use in their courses and e-learning was only a requirement for 17 percent of all students. The courses that expected significant web use were those offered by Universities and Polytechnics. However, many of the tertiary providers, particularly PTE's were not prepared for the seamless transitions of the ‘digital generations’ (Prensky, 2001) leaving school over the following years. Furthermore, if there were no moves towards e-learning within five years these problems would impact on each other. Education providers would be behind the progress of the digital learners, therefore not catering to the learners needs. As a

result learners could be less inclined to pursue further study in institutes where their learning requirements would not be catered for, impacting on private training providers who do not provide new learning environments. The PTE in which this case study was carried out was in the early stages of implementing a strategic plan to implement e-learning in response to Government policy and Tertiary Education Commission e-learning strategies.

As the researcher discovered in a pilot survey at this particular PTE, many in education still had a resistance to using computers as valuable resources, from Board level “The best use of computers and technology must be determined according to each situation. There is no simple answer, because a possible use depends on values, philosophy and goals of the schools system” (Marsh, 1993). Resistance to change was present in the teaching staff, particularly by those having to learn new skills and integrate technology into curriculum and learning outcomes. The role of the teacher requires a change from transmitter to facilitator, or guide of learning in a more constructivist learning environment. While these issues had greater impacts on teachers and students, the integration into higher education meant changes of policy to ensure quality e-learning through professional development for staff (Knupfer, 1993; Kwok-Wing, 2001b; Volman, 2005).

Kwok-Wing (2001b) discovered an emphasis in some of the studies had been placed on staff development and their levels of information literacy, which may have an adverse impact on the introduction of technology into the classroom, a finding also discussed in a report from the Tertiary Education Commission’s website. The study found returning faculty members participating in training workshops were not very motivated to integrate the technology. Efav, Hampton, Martinez, & Smith (2004) observed, many instructors felt uncomfortable teaching students who were actively pounding keyboards to take notes. In addition, the study found, many faculty members believed that students would engage in activities not related to the class. For some faculty members giving up this control in the classroom was not acceptable

Kwok-Wing (2001c) points out that even though teachers were using the internet, the integration into teaching was slow. According to studies there are three types of users of Information, Communication, Technology (ICT); serious teachers who use technology in every aspect of their lives, work and home, occasional, teachers who consider ICT to be a central part of the classroom, and non-users, whose use is minimal in the classroom. Two of the suggestions Kwok-Wing (2001c) makes are to address professional development programmes and to integrate technology early into these training programmes. The researcher in this case study followed Kwok-Wing's suggestions establishing them as fundamental elements of the strategic plan.

Implications of e-learning at local levels raised new issues for teachers, and learners of all ages, such as security, privacy and confidentiality, copyright and plagiarism, validity and reliability of sources of information, including illegal information and images. Roblyer (2003b) describes Bruner (1973) and Papert's (Papert, 1980) theories that underpin learning via the internet as that of the learner on the journey of discovery. As Molnar (1997) reports theories now focus on cognition; thinking about learning rather than learning behaviours. Simon (1971), Nobel Laureate, observed that the developments in science and information technologies have changed the meaning of the verb 'to know' from having information stored in one's memory to now having access to information and knowing how to use it. Implications lead to the changing role of the teacher as now a guide or monitor of the learning process, and implications on the learner to accept more responsibility in learning making meaning for themselves as a problem solver and critical thinker.

Rationale

It has been argued that online and flexible learning provides spaces for reflective learning and have the added advantage of bringing collaboration to traditional solitary practices (Frank, 2003/4; Phipps, 2005); creating metacognitive spaces where high order thinking (HOT) (Mezirow, 1990a) and deep learning (A. Entwistle, 2000) occur naturally. Cooperative learning is defined as interdependent learning (D. W Johnson & Johnson, 1987; Kirschner, 2006; Zeichner & Liston, 1996). However, it is just as important to develop and continue to develop independent learners who can problem solve and think critically of their own accord. As discussed in detail in the literature (Chapter Two) exploration into what learners do naturally, that is move between individualistic, solitary learning and cooperative, interdependent learning is somewhat lacking. This study investigated whether e-learning develops both individualistic and cooperative learners and what type of thinking happens when learners move between the two.

An experiential reflective pedagogical approach was the foundation for teaching and learning strategies that have been developed by the PTE. An outcome of the course required learners to prescribe lifestyle, dietary, and nutritional changes for their clients. After theoretical and evidence informed instruction, the learners assessed their own current general health status to determine where change would benefit their health. They would then implement changes to their diet and lifestyle, record and the changes in their own general health, and reflect on the changes in relation to changes in their general health. This experiential reflective learning utilised traditional (solitary) reflective journals as a tool to capture data. This study investigated the experiences of learning through the traditional reflective learning journal compared to the e-journal.

Problem

The private training provider at the centre of this study initially had no e-learning components on any of its courses. As discussed earlier the Ministry of Education's e-learning strategy, Digital Horizons Learning through ICT (2002) required teachers to carry out "new ways of teaching" and initiate and facilitate "new ways of learning" (p.3). This study implemented e-journaling as an e-learning strategy, paying particular attention to the interaction between solitary and collaborative learning in facilitating HOT thinking and deep learning (Mezirow, 1990b). At present very little evidence has been found that investigates whether traditional methods of journaling compared to e-journaling facilitate interdependent learning.

Worth and relevance of the study

The research offers evidence of experiences that were happening in the real world of the teaching and learning in the classroom, teaching faculty, and for the researcher. This research also provides evidence for the PTE of the implementation of Digital Horizons (2002) strategies.

The outcomes of this project may help to bring fresh perspective to these areas and in doing so highlight the strengths and weaknesses of this e-learning strategy to inform future implementation into other programs offered by this PTE and other providers who utilise journaling or e-journaling as a teaching and learning strategy.

The research could inform the developers of the selected Computer Mediated Communication (CMC), Moodle, in the design and functions of the journaling or blog spaces.

Aims and Objectives

The purpose of this research was to implement and investigate e-journaling as an e-learning strategy, compared to the current traditional journaling strategy being used, in order to develop interdependent learning. This research set out to ascertain whether interdependent learning approaches described in the literature can be observed in the reflective journal and the e-journal within the tertiary education programmes provided by the Private Training Provider.

The research objectives were:

1. To implement an e-learning teaching and learning strategy that provided learners with the means of reflecting on their own and each others practice.
2. To explore the interaction between solitary and collaborative learning.
3. To examine the e-journal compared to the reflective learning journal in creating interdependent learning.

Research Questions

Is e-journaling a strategy that develops interdependent learning?

1. How effective was the reflective learning journal at developing interdependent learning?
2. How effective was the e-journal at developing interdependent learning; what type of learning takes place?
3. How do the two forms of journaling compare in developing interdependent learning.

Thesis Outline

Chapter One of this study first examines a private training establishment without e-learning in place, and goes on to discuss issues in New Zealand at the outset of this study around policy in order to give the reader an understanding of why there was a sudden drive for e-learning in New Zealand.

Chapter Two examines significant literature in three areas of teaching and learning. Firstly, the reflective learning journal and the e-journal are defined and compared and contrasted in terms of advantages and disadvantages. The type of learning the reflective learning journal fosters is explored and finally interdependent learning is defined and examined.

Chapter Three outlines the approach for this study, the methods used, the data gathering design and methods utilised for analysing data. Ethical considerations are outlined and explained at the end of this chapter.

Chapter Four introduces the three focus groups providing brief descriptions of the three focus groups and their tutors in this case study, outlining their uniqueness.

Chapter Five presents the findings from the data analysis, presenting an in depth analysis of the results and findings from the focus groups, and an analysis of the interactions within the e-journals.

Chapter Six evaluates and discusses the data in relation to the literature presented in chapter two and summarises the final discussions.

Chapter Seven concludes the main findings with recommendations for further developments.

Chapter Two:
Literature Review

Chapter Two: The Literature Review

Introduction

The reflective learning journal has been a somewhat solitary activity due to the nature of the process itself. Reflecting on specific elements in order to make meaning from an experience requires a level of deep inner exploration; recording this process over a period of time in order to then submit to the tutor for assessment, is not only time consuming but a lonely activity. While this reflective process has many benefits as a tool for developing critical reflection and deep learning, it is not without its drawbacks. Journals can produce large amounts of data the tutor then needs to organise, read and make sense of in order to ascertain what the student has learned from the process. The solitary nature of the reflective learning journal disconnects the learner from the tutor. Now with resources provided by information, communication and technologies (ICT) in education, the reflective learning journal has evolved to a more interactive learning strategy. However, the literature indicates the e-journal is not being utilised to its fullest capacity.

Interdependent learning has been defined in several ways. Johnson and Johnson (1987) define interdependent learning as positive cooperative learning, whereby learners are dependent on each other (Barnhart, 1996) for the final result. There are several essential elements that ensure the success of interdependent learning identified and discussed further on in the literature review. Kirschner (2006) defines interdependent learning simply as interaction, while Leach (2003) defines interdependent learning as learning together and learning alone. It is the concept of learning together while learning alone that lack discussion in the current literature.

This literature review examines a significant amount of literature provided by several areas of research in teaching and learning. First this review examines the body of knowledge on the e-journaling process, comparing and contrasting e-journaling to its counterpart the reflective learning journal. It goes on to examine the type of thinking

and learning cultivated through the use of reflective learning journals. Finally this review examines the literature around learning together and learning alone; interdependent learning.

E-Journaling

The traditional form of the reflective learning journal is primarily a tool used in education for developing deep learning as a result of reflection. It is traditional in the sense of the solitary process of handwriting in a log or notebook or diary (Phipps, 2005; Rainer, 1978), recording specific content or data at particular points in the learning process. Other forms of journals have also been used in higher education for example, spiritual journals and dream logs, autobiographies and memoirs, and in the academic arena as; professional journals, interactive reading logs and theory logs (Phipps, 2005).

Journaling has been used in education for many years; as a tool for teachers to reflect on their practice (Boud & Walker, 1998 ; Dewey, 1933; Frank, 2003/4; Ho & Richards, 1993; Mezirow, 1990b; Schon, 1995) and in many different areas of education. More recently, journaling has also been implemented as a learning tool for students in the context of moving between theory and practice (Brookfield, 1995). Additionally, journaling also serves as an effective form of debriefing, where the simple process of writing about a dilemma or an incident can help to clarify the issues presented (Cardno, 1998). The reflective learning journal allows the learner to assemble individual pieces of evidence to submit for assessment, giving a broad picture of the scope and diversity of learning and adding detail to self-evaluation.

The e-journal, otherwise known as an interactive online diary (Cohen et al., 2006), refers to a reflective learning journal (Moon, 2006) within a virtual learning environment. The virtual learning environment is created via the use of a course management system (CMS) and the internet, now more commonly known as an e-

learning environment (Kwok-Wing, 2001a; M. D Roblyer, 2003). E-learning provides students with flexible learning spaces, giving learners anytime access to their course notes and tutors increasing the level of access and support.

Likewise the e-journal has several options to its design. The e-journal has the function to be more interactive allowing the tutor access to logs made throughout the journaling process. Phipps (2005) describes e-journaling as a teaching strategy that enhances face-to-face classrooms from a distance, providing opportunities for learners to express opinions, ideas and concerns about course materials that would not otherwise be shared through more traditional journaling methods. The e-journal, while providing solitary spaces for reflection, can also be used to connect learners not only with their tutor but each other; where experiences can be shared. The e-journal must not be confused with the weblog or blog (Blood, 2002; Loving, Schroeder, Kang, Shimek, & Herbert, 2007), where more informal discourse can occur between learners, learner and instructors as well as the wider internet community (Wee Sing Sim & Foon Hew, 2010).

Traditional Journaling versus E-Journaling

Emerging from the literature are aspects of the reflective journaling and e-journaling that are the same and points of difference. Phipps (2005) points out several advantages of e-journaling compared to traditional journaling, illustrated in the Table 2.1. The comparisons Phipps' makes are presented in relations to other literature in illustrating the advantage and disadvantages of both types of journal.

Table 2.1: Advantages and Disadvantages of Traditional Journaling and E-Journaling

	Traditional Journal	E-Journal via a Classroom Management System e.g. Moodle
Advantages	<p>Allows for creative reflections using diagrams, colour and drawings with ease (Moon, 2006)</p> <p>Less formal (Moon, 2006)</p> <p>Expressive language (Moon, 2006)</p> <p>Expressive writing (Britton, 1972, cited in Moon, 2006)</p> <p>Students can write more freely (Moon, 2006)</p> <p>No concerns as to who else will view (Moon, 2006)</p>	<p>No issues surrounding handwriting (Phipps, 2005)</p> <p>Less paper to cart around for either party (Phipps, 2005)</p> <p>Students can make entries while the tutor has constant access to the journal entries. Reply buttons for comments directly back to learner (Chickering & Gamson, 1991; Phipps, 2005)</p> <p>Prevention of loss or late submissions. The speed of submissions – dates, times all recorded. Times and dates are automatically logged each time an entry is made. Original messages can be grouped with all the responses. Can compile and print out messages (Phipps, 2005)</p> <p>Online classroom activities can be easily archived and restored when needed (Phipps, 2005)</p> <p>Has the ability of discussion boards for private rooms/groups and/or personal entries and instructor responses (Phipps, 2005)</p> <p>Each learner has their own room (Phipps, 2005)</p> <p>Organisation of large amounts of data Entries can be organised into topics, themes etc (D. J. Cohen, Leviton, Isaacson, Tallia, & Crabtree, 2006; Phipps, 2005)</p> <p>Reflective writing is more effective this way than even email (Chickering & Gamson, 1991; Phipps, 2005)</p>
Disadvantages	<p>Reading and handwriting can be an issue for both instructors and students (Phipps, 2005)</p> <p>Access for Tutor during completion (Phipps, 2005)</p> <p>Access for learner during marking (Phipps, 2005)</p> <p>Monitoring of student (Phipps, 2005)</p> <p>Time (Moon, 2006)</p> <p>Continual feedback (Phipps, 2005)</p>	<p>Lack of non-verbal cues (Dirkx & Smith, 2009; Kielser, Siegel, & McGuire, 1987; Kwok-Wing, Pratt, & Trewern, 2001a)</p> <p>Must be word processor literate (Dirkx & Smith, 2009; Kwok-Wing, et al., 2001a)</p> <p>Must be ICT literate (Kwok-Wing, et al., 2001a)</p> <p>Access to computers (Kwok-Wing, et al., 2001a)</p> <p>Internet connection required (Kwok-Wing, et al., 2001a)</p> <p>Technical problems (Kwok-Wing, et al., 2001a)</p> <p>Needs time to familiarise with programme (Kwok-Wing, et al., 2001a)</p> <p>Needs time to familiarise with text language (Dirkx & Smith, 2009)</p> <p>Compliance (D. J. Cohen, et al., 2006)</p>

Table 2.1 highlights the disadvantages for using traditional journaling are directly related to the advantages of utilising e-journaling, the organisation and management of information within both types of journals. For example, issues around reading and handwriting for both; the tutor in reading and making sense of the journal and the student in reading comments and feedback, the advantages to handling less paper work, and not having to carry around heavy journals. Also the monitoring, regularity of postings, recording of submissions, grouping of submissions into themes or discussions and the ability to print if necessary are real advantages to the tutor or diary evaluator as Cohen et al., (2006) found when collecting and evaluating large amounts of qualitative data are all an advantage of using the e-journal.

While the majority of these advantages aid the tutor in the management of the process there are advantages offered from the student's perspective. The most important feature of the e-journal would be the ability for the tutor to remain connected to the learner throughout the process. The tutor can guide or mentor the learner, prompting if necessary as Panko (2004) defines the e-moderators role. While Phipps (2005) emphasizes valid advantages to e-journaling further examination of literature found these and several issues around journaling and e-journaling that require further discussion.

Social and Psychological Aspects of CMC

While it is easier to observe the shared experiences that lead to learning, Kielser, Siegel, and McGuire (1987) found that there were many negative outcomes as a result of using computer mediated communication, for example, depersonalisation and impoliteness. This is due to the loss of personal social and behavioural cues used when people engage in face-to-face communication. However, there were positive findings due to the filtering of the social cues altering patterns of dominance. Group dynamics changed whereby the group members participated more equally without a high dominance of interaction encountered with face-to-face group dynamics.

The lack of personal social and behavioural cues can be accommodated with the use of positive feedback. While effective feedback provides encouragement and direction (Knox, 1986); it is the regularity of feedback in the e-journal that is essential. As Bassano (1986) and Chickering and Gamson (1991) recommend learners need positive, frequent and instant feedback on their progress, which is provided through interaction from the tutor. This can be hard to achieve through the traditional form of journaling as the tutor may not have access to the journal for weeks at a time. However through the e-journal positive dialogue can be given often. Chickering and Gamson (1991) stress the importance of positive and encouraging feedback, as it is the missing body language that the student will read and will ultimately set the climate for the entire course.

Compliance or completion of a learning journal can be an issue for several reasons, for example, issues around grading and assessment which are discussed later in this section. As Phipps (2005) and Moon (2004) point out monitoring of the reflective learning journal is difficult as the tutor may not see the journal for several weeks, even months depending on the length of time the activity is required. This aspect is an advantage of the e-journal, continued monitoring of the process.

However, researchers have found that compliance is also an issue in the e-learning environment, the difference being in an e-learning environment the learner may be present but may not be visible. These learners have been referred to as lurkers (Nonnecke & Preece, 2000; Ramirez, Zhang, McGrew, & Lin, 2007; Schild & Oren, 2005), observer-participants rather than active-participants (Ramirez, et al., 2007), and hard to involve online users (Andrews, Nonnecke, & Preece, 2003). In Schild and Oren's (2005) study a self proclaimed lurker described their activity as; reading, obtaining all the facts from all sides prior to making an educated decision. Another finding was the participant will read all of the content but will rarely write. This account relates to Honey and Mumford's (1982) description of the reflective learner. The reflective learner observes and ponders experiences from different perspectives, gathering information first hand and from others prior to coming to a conclusion. They take a back seat in meetings, listening to others, weighing up what is being said

before making their own points heard. However, in an e-journaling environment the activity is in itself reflective; this alone may encourage participation, depending on whether the e-journal is private or shared. Non participation will be evident through the lack of postings; therefore the tutor has the opportunity to prompt the journal writer long before non participation would be evident in the reflective learning journal.

Trust

Mayher, Lester and Pradl (1983) make an important point that successful journal writing will only happen in an atmosphere of trust. The environment needs to be supportive and learners need assurances as to who will view or assess the journal. Trust between staff and students needs to be established in relation to unexpected emotions or the surfacing of underlying issues. Cooper (1991) reports on students who leave courses as a result of their exploration of feelings through journaling. Along with trust comes the issue of privacy and confidentiality and as Moon (2006) explains the more trust the learner has with the staff member the more likely they are to feel comfortable with revealing more through the journaling process.

Technology

Computer experience can hinder or slow down participation. Students who are unfamiliar with the e-learning environment require a period of time where they become accustomed to and familiar with the programme (Ross, 1996). Some students find exploratory writing much easier by hand, particularly for new computer users or those who lack computer skills (Zagorsky, 1997), in which case the exploratory process becomes difficult, as a result students would have more self confidence in traditional learning environments (Warschauer, 1996).

Phipps (2005) portrays the e-journal from a somewhat idealistic perspective where technology comes without glitches. However, as Kwok-Ling (2001a) points out,

students have to deal with very real issues around technological difficulties such as access to computers, internet server provider (ISP) connections, internet speed, servers crashing, systems crashing even technology being lost or stolen, which is reality when studying in large institutes.

Time

Time is an issue in has raised issues around type of journal keeping. Moon (2006) identifies time as a reason for abandoning journal writing for both tutors and students. Time management is essential for successful completion of regular journal entries. Therefore, time can be allocated for self-evaluations, reflection around the learning and assessment outcomes (Hahnemann, 1986). However, it is argued that the classroom is not conducive for reflection, from a teaching perspective valuable teaching time within the classroom is lost (Moon, 2006).

The issue of time is been raised in relation to how long after the events reflective writing should take place. The longer the length of time between the event and the record keeping, the more likely the perception of the event changes, thus altering memory recall (Bleakley, 1999). Cohen, et al., (2006) assert the importance of real time diary keeping, stating that the e-journal allows for the collecting of data at more frequent occurrences rather than relying on retrospective recall of events. Phipps (2005) argues that word processing technology is more accommodating, faster in the sense of making journal entries easier to read, increasing time on task. However this is only true if the environment allows for computer access (Althaus, 1997), the student is proficient with both word processing and technology (Ross, 1996). It could be argued that making notes in a hand written journal is faster.

The Reflective Learning Journal as an Assessment Tool

Participation and completion of the e-journal could be affected by course requirements, if participation is compulsory (Meacham, 1994). However, Brookfield

(1995) asserts that journal entries cannot and should not be assessed. On the other hand Ruberg, Moore & Taylor (1996) recommend grading postings as the learner is more likely to participate. In which case the journal could be completed and submitted as a formative assessment (Miller, 1998) providing evidence of course completion.

The reflective learning journal allows the learner to assemble very individual pieces of evidence to submit for authentic assessment (Hart, 1994; Torrance, 1995), giving a broad picture of the scope and diversity of reflective learning and adding detail on self-evaluation and critical thinking needed for the work place (Moon, 2006). The ability to self assess is essential to any practitioner required to work independently, which Marzano (1993) asserts is at the heart of performance assessment. Moreover, reliable assessment tools will provide consistent results. “Self-assessment is the ability of a person to accurately evaluate or assess his/her performance and his/her strength and weaknesses...” (Woods, et al., 1988, p. 69). Specific formats of the reflective learning journal can be aligned with the performance criteria of the overall assessment to give a deeper richer response rather than a descriptive response (Moon, 2006).

As Woods et al., (1988) discuss mature self-assessment recognises that evaluation concerns the *performance* and not the *person*. When an assessment is made the judgement is not whether the student good or bad rather it is whether the performance of the task was competent or not yet competent. To emphasise this point, “self assessment should be renamed self-performance assessment” (Woods, Marshall, & and Hymak, 1988, p. 36). It is possible with journaling is to integrate assessment as part of the learning through continued reflection activities. This could be achieved through sequence or spiral curriculum where students revisit themes, concepts and materials (Light & Cox, 2001) by building up a picture week by week.

It may be considered that the reflective log is a fair assessment because of its nature; different learners can personalise reflective logs in different ways. However, for

assessment purposes it is beneficial for the tutor to specify format and structures within which learners can demonstrate their reflections (Brown, 1996). Caution should be taken when adding too much structure to the reflective learning journal. Moon (2003), provides sound arguments for unstructured or semi-structured reflection as providing deeper richer thinking. The more structure is placed on reflection the more descriptive the writing becomes, providing systematic accounts of events rather than a reflection of the deeper experience (D. J. Cohen, et al., 2006; A. Entwistle, 2000; Moon, 2003).

Interaction

Cohen et al., (2006) utilise interactive online diaries as a tool to collect large amounts of qualitative data in order to evaluate project implementation. In this situation the interaction is fostered between the diary keeper and the evaluator. The emphasis is the collection of accurate and complete data, rather than fostering an interactive learning environment. Phipps (2005) also suggests the use of e-journals to gain interaction between teacher and learner rather than between students, in fact she states that e-journaling does not promote interaction or cooperation between learners. Rather, e-journaling allows an intellectual exchange between faculty and students in an academic venue, which builds a rapport that contributes to positive learning experiences and successful outcomes. Ho and Richards (1993) utilise journals to improve team management, the teams do not share their journals, rather they serve to inform team leaders on specific issues and interpersonal and social skills. Moon (2006) briefly mentions the use of electronic journaling without expanding on effectively journaling through electronic means.

E-journaling is described as a teaching strategy that enhances face-to-face classrooms from a distance, providing opportunities for learners to express opinions, ideas and concerns about course materials that would not otherwise be shared through traditional journaling methods (Phipps, 2005). Phipps states that e-journaling allows an intellectual exchange between faculty and students in an academic venue, which

builds a rapport that contributes to positive learning experiences and successful outcomes. However, research on collaborative learning and studies of peer assessment show that students learn from peers by studying educational materials together, as well as by assessing each other's work (van den Berg, Admiraal, & Pilot, 2003). Herrington and Oliver (2002) successfully utilise e-learning to support both individually-mediated and socially-mediated reflection.

This review of literature found that while e-journaling has the dynamic function of being able to provide solitary learning spaces, as those used in traditional journaling and also the function of being able to create social spaces, where experiences can be shared the e-journal still being recommended primarily for interaction with the tutor, for example, the diary that fosters feedback between the diary keeper and the evaluator (D. J. Cohen, et al., 2006; Moon, 2006; Phipps, 2005). Whereas the e-journal in this study fosters interaction between the diary keepers, in terms of sharing experiences. While there are obvious benefits to e-journaling there are factors that can effect participation that must be considered when implementing e-learning into any programme. Such as computer literacy skills, access to computers, technical faults, instructing learners as to types of journal writing.

Summary:

The literature indicated in order for journaling to be successful the learner needs prior instruction as to the requirements of the journal and the type of writing. In an online environment other potential issues need to be considered prior to the journaling activity, such as computer literacy skills, computer access and time and technological difficulties that may occur. With all things considered the e-journal has advantages to the learner in terms of remaining connected to the tutor, giving support during the journaling process; interaction with the tutor rather than peers has been the emphasis. As discussed in the literature e-journaling has many advantages from a teaching perspective in terms of the management and organisation of the large amounts of data that journals produce. It would appear that many things need to be considered in

order to successfully implement journaling as a teaching and learning strategy. So why is it utilised, why do those that used it effectively persist? In the next section literature concerning reflective learning, mentioned earlier, that is developed as a result of utilising the reflective learning journal is discussed.

Learning through Reflection

As discussed earlier in this chapter the reflective learning journal is a teaching and learning strategy for reflection. Learning from reflection is well documented within the literature. This section of the literature review aims to summarise the theoretical principle underlying this pedagogy. As discussed in the previous section the purpose of the reflective learning journal is to record and reflect on experiences in order to make meaning and in some way learn from the experiences. Theories around learning from experience and levels of reflection are reviewed in this section.

One way of defining learning may be as a process of making meaning from interpreting a new experience, which subsequently guides understanding, action and appreciation (Mezirow, 1990a). A purpose of reflective learning is the recounting of the experience in order to correct misrepresentations and errors in problem solving. The purpose of using reflective learning in higher education can be found in general learning theories, experiential learning theories and adult learning theories and professional development.

Experiential learning

The process of reflection has been linked closely to the process of experiential learning, because as we reflect on our experiences we construct knowledge (Moon, 2004; Zepke, 2003). Kolb (1984) defines experiential learning as “a process whereby knowledge is created through the transformation of experience” (p.38). While reflection is a vital tool in experiential learning, having the experience is vital

to reflection. Kolb (1984) constructed a systematic view of experiential learning and observed four phases:

- Having the ‘concrete experience’ is the first stage
- The second stage, ‘reflective observation’, reviews the experience
- The third stage ‘abstract conceptualisation’ is the process where the experience is compared with others and conclusions are drawn
- The fourth stage ‘active experimentation’ is where new objectives are set, change is planned for and a new cycle begins

Experiential learning can start from any point in the cycle. The student must reflect on the experiences in order to construct knowledge and make meaning. Taylor (2009) states it is reflection that deepens learning through the “interdependent relationship between experience and critical reflection that potentially leads to a new perspective” (pg, 7). Therefore in an experiential learning pedagogy reflective practice is a key tool as a part of the learning process.

As Roblyer (2003) outlines Piaget’s (1937/1954) theories in cognitive development, the learner either assimilates the experience that is, fit’s the experience into his or her own existing view of the world. Or, the learner accommodates the new experience, changes their view or schema of the world to incorporate the new experience. In relation to Kolb’s theory, this takes place in the third stage; abstract conceptualisation, where experiences are compared and contrasted with existing perceptions and assumptions. Mezirow (1990a) emphasises that reflection on the experience is of most importance. However, without the third stage, abstract conceptualisation, assimilation or accommodation of the new experience cannot take place therefore a new perspective cannot be formed. The fourth stage either validates or rejects this new perspective. In order for transformation to occur each stage of the experiential process is vital.

It can be argued that the age of digital technology has developed a generation of experiential learners. Younger generations are not as cautious as older generations when learning digital technology skills (AppleEducation, 2006; Prensky, 2001). As Prensky (2001) points out, older generations are digital immigrants who have to learn the digital language at an older age; as a result there is a laying down different pathways of thinking and learning. Where as younger generations are digital natives, who learn the digital language from a young age. As an example, a digital immigrant will read a manual for a programme; where the digital native will assume the programme will teach the user.

Reflective learning

Dewey (Dewey, 1933) encourages learners to formulate their own answers to questions by assessing various perspectives and viewpoints. Dewey promotes democratic learning by seeing the knowledge being created as an "interactive process" whereby students construct understanding based on their own experiences. Interaction in this sense is the interaction with one's own experiences developing awareness to assumptions and beliefs (Taylor, 2009). Drawing on Dewey's earlier work Schön (1990) introduced the idea of the reflective practitioner as someone who is learning in the act of reflecting on their practice. The purpose of teaching this skill is to develop reflective practitioners who will eventually, not just reflect on action, but reflect in action (Schon, 1995), and in doing so problem solve on the spot. A skill, it could be argued, that is essential for clinical practice for the natural health professional.

When committing to reflective practice, Dewey (1933) identified the need to have an attitude of open-mindedness, responsibility and wholeheartedness. Open-mindedness is the ability to listen to more side than one, to give attention to other perspectives and to recognise the possibility of error in one's own judgement. An attitude of responsibility is required in order to examine the consequences of our actions. While wholeheartedness is required to keep the reflection an honest one; not just taking

what went well from the experience but being able to critique what did not go as well and why.

Moon (2004) asserts that reflection plays a vital role in student work experience and employability. Reflection in higher learning could therefore teach adult learners essential skills of self performance assessment necessary for the workplace. Boud (1997) asserts that the ability to self-assess is a core educational skill which is necessary for lifelong learning, and which it is desirable to develop as part of higher education. In doing so learners are developing independence and autonomy (Boud, 1995a) required for clinical practice.

Critical reflection

Mezirow (1990b) outlines an emerging transformation of learning; where constructing meaning through critical reflection is of great importance. He defines critical reflection for adult learners as a critique of assumptions on which our beliefs rest. Adult learners bring with them pre-suppositions that form the basis of the next learning experience. Critical reflection is a process whereby these pre-suppositions are challenged by external experiences. Brookfield (2000) and Ecclestone (1996) argue that in adult learning, people want to develop themselves to their full potential, to do this they must be able to critically examine their experiences. Ho and Richards (1993) discovered asking simple reflective questions do not necessarily develop critical reflection. Simple reflection is not enough; reflection must be critical, outward looking as well as inward.

Internal and external experience

Internal experiences are those previously learned experiences that the student brings to the situation, drawing from their current cognitive structure. External experiences are those things that happen outside of the learner (Marton & Booth, 1997) an object, idea, or concept that the learner assimilates. Apprehension is the manner in which the experience is perceived as internal or external by the person having the experience

(Moon, 2004). Apprehension, it is argued, can stimulate a much deeper, richer internal experience of the 'whole' of that experience. In making meaning from the external experience the learner will draw on internal meaning relevant to the context as a frame of reference. As discussed earlier through the assimilation of new experiences the cognitive structure accommodates. Moon (2006) asserts that as the student becomes more efficient at reflecting learning is not just about content, but learning itself, metacognition. Writing in a journal allows the learner to form relationships between the internal and external experience, how the meaning of the event relates to the internal meaning if the learner. Journal writing enhances learning, as learners read, write and problem solve they become aware of their own thinking.

It is argued that emotions have a direct effect on deep and surface learning and are essential to the reflective experiential process (N. Entwistle & Entwistle, 1997; Mezirow, 1990b; Moon, 2004). Feelings and emotions have the same effect on learning. Learners who adopt deep approaches to learning will have a positive feeling of achievement when clarity clears confusion. When learners are under pressure they will also have the intent of learning at a deep level. However, as stress builds learners revert to surface learning, clarity may not be attained and learners experience negative feelings around not achieving. The emotional experience can highlight issues to be dealt with (Boud & Walker, 1998 ; Mezirow, 1998).

However, a learner could be reflecting at a deep level and not necessarily have an emotional experience, as reflection and feelings act in an interdependent relationship to emotion (Taylor, 1997). Reflecting on how a change of nutrition has had a positive effected on ones health may not necessarily raise emotions, one may feel good as a result but not necessarily get emotional about it. However, Fisher (2003) states that you have to create the situation in order to reflect on it even if it is uncomfortable. In an online context, Dirkx & Smith (2009) purposely utilise materials that evoke emotions in facilitating transformative learning.

Transformation is the ultimately the end result of the process of deep learning. Mezirow (2009) refers to 'transformative learning' as:

the process by which we transform our taken-for-granted frames of reference (meaning perspectives, habits of mind, mind-sets) to make them more inclusive, discriminating, open, emotionally capable of change, and reflective so that they may generate beliefs opinions that will prove more true or justified to guide action. (p. 7)

It is the change in thinking and subsequent actions that are an indication that deep learning has taken place. Critical reflection on an experience allows the learner to develop an awareness of the current frames of reference that guide their actions; the learner can then accommodate or assimilate new information or skills to direct a new frame of reference.

Reflection has been criticised for the solitary nature of the process. The concern is the absence of looking out; through continually looking inwards there is the danger of becoming self-absorbed (Bleakley, 1999). In doing so learners may not become aware of required changes to pre-suppositions that guide action. The next section of the review discusses the debate that Bleakley raises between learning together and learning alone.

Interdependent Reflection fostering Transformation

There are critics of reflection who raise several issues around the solitary nature of reflective learning (Bleakley, 1999; Bray, Lee, Smith, & Yorks, 2000; Osterman & Kottkamp, 1993 ; Zeichner & Liston, 1996). As identified earlier reflective journaling is still considered a private process in relation to trust, privacy and confidentiality. However, there are those who have explored it as an interactive process, promoting individual learning and shared learning.

Separate learning

The literature reviewed so far has established that the reflective learning journal develops deep learning while learning alone. Individualistic learning (D W Johnson & Johnson, 2003), now more commonly known as independent, autonomous learning (Boud, 1988), or self regulated learning (Kramarski & Gutman, 2006) has been argued as the goal of education. Johnson and Johnson (2003) define the individualistic learning situation in which students are independent of one another and are working toward a set criteria; where their success depends on their own performance in relation to an established criteria, where the success or failure of other students does not affect their score. Learner independence is required for the successful acquisition of knowledge, as Zimmerman and Schunk (2001) emphasise, independent learners are self regulated to the degree where they are metacognitively, motivationally, and behaviourally active participants in their own learning process.

As established earlier, constructivists believe that humans construct all knowledge in their minds by participating in certain experiences; therefore learning is constructed knowledge (Dewey, 1933). However, independent learning has been criticised as an isolated way of learning for the student, a ‘solo-cognitive process’ (Steketee, 2006, p. 133). Social constructivists argue that self directed learning does not fit all learners. Collaboration or co-operation (D W Johnson & Johnson, 2003) is the interaction with peers to make meaning in socio-cognitive spaces, valuing the contributions of all (Boud, 1995b; Bray, et al., 2000). As van den Berg, Admiraal and Pilot (2003) state “...collaborative or co-operative learning and studies of peer assessment show that students learn from peers by studying educational materials together, as well as by assessing each other's work” (p. 9).

There has been a debate between solitary, independent learning and cooperative or collaborative learning in terms of which prompts higher thinking skills and therefore creates successful academic learners. Academic skills such as critical thinking skills; problem solving, evaluating, analysing, debating and critiquing among others (Krathwohl, Bloom, & Masia, 1964) are required in higher education. The higher the

level of learning the less face-to-face time is allocated and the more academic independence is required in order to complete a qualification successfully. However, there have also been significant studies that show that learning together promotes higher order thinking skills and therefore, is an essential requirement of learning in higher education and beyond into clinical practice.

Interdependent learning

Interdependent learning has been defined in several ways. Johnson and Johnson (1987) and Barnhart (1996) define interdependent learning as positive co-operative learning, whereby learners are dependent on each other for the final result, Kirschner (2006) defines interdependent learning simply as interaction, while Leach (2003) defines interdependent learning as learning together and learning alone. It is the concepts of learning together and learning alone that lack discussion in the current literature.

Theories of interdependence originate from Deutsch (1962) an experimental social psychologist whose interests were in the areas cooperation and conflict within behavioural sciences. It was Johnson & Johnson (1987) who took those theories and engaged in a systematic programme of research to test and modify Deutsch's existing theory. Over 30 years Johnson and Johnson (1987) conducted over 80 studies on cooperative, competitive and individualistic interaction. These theories have become the benchmark for social interdependence and have influenced professional areas such as business, management and education.

Cooperative learning is now more commonly known as collaborative learning (Biggs, 2006; Boud, 1995a; Bray, et al., 2000; Papanikolaou & Boubouka, 2010), although Johnson and Johnson (1987) define collaboration as only one aspect in positive cooperative group work. Johnson and Johnson (1987) differentiate interdependence from dependence and independence as follows; social dependence exists when the outcomes of person A are affected by the outcomes of person B's actions, but not vice versa. In a learning context if person A were a student and person B the Tutor

this would describe academic dependence, where the student is dependent on the tutor (or student support centre) to assist them through their course. Social independence exists when individuals outcomes are unaffected by each others actions; in a learning context this would describe an academically independent learner or individualistic learning. Social interdependence exists where individuals share common goals and each individual's outcomes are affected by the actions of others, co-operative and competitive learning. There are three types of cooperative learning groups, formal, informal and cooperative based groups.

Formal cooperative learning groups are used when the students are working together towards a common goal. They may last for only one classroom session or extend for several weeks. The purpose is for the students to realise that not only are they mutually responsible for each other's learning but they also have a stake in each other's success (Johnson & Johnson, 1998). The term 'formal' does not necessarily mean that the grade for the activity will go towards a final summative result. The tutor adopts the role of monitor of interaction and only intervenes when the students do not understand the academic task. Informal cooperative groups are temporary, ad-hoc groups that can last for a few minutes or a group activity in a classroom session. Whereas cooperative based groups are long term with a stable membership that give each other help and support, encouragement and assistance to make academic progress developing cognitively and socially.

Johnson and Johnson's (2003) social interdependence theories focus on the individual and interaction with their social environment. In the learning context they have translated this into the group learning, not the learner interacting with the social learning environment, the class. Johnson and Johnson's (2003) view of interdependent learning could be seen as a micro view of positive interdependence as it is that of the learner within the group. Johnson and Johnson's macro view is defined in relation to the learner and teacher interactions. While there is significant, credible and reliable research reporting on positive interdependence within the co-operative learning framework (D. W Johnson & Johnson, 1987; D W Johnson & Johnson, 1990, 2003; R. T. Johnson & Johnson, 1998) there are very few studies that

take a step back from the microscopic view of group work and focus on what learners do naturally; move between individualistic and co-operative learning. There is a lack of examination of the type of thinking that develops, not as a result of being dependent on each other, rather as a matter of inter-discourse; communication/dialogue between learners that is not dependent on goals or results. Johnson and Johnson (1989) define peer discourse as promotive interaction, one aspect of positive interdependence.

Promotive interaction (D. W Johnson & Johnson, 1987) occurs when individuals encourage and facilitate each others learning to reach the groups goals and promote each other's success by: giving and receiving help and assistance, exchanging resources and information, peer teaching, listening critically, challenging each others reasoning, giving and receiving of feedback, and encouraging others to achieve.

Interestingly, Covey (1989) describes a spectrum of maturity from dependence to independence to interdependence. Covey (1989) states that interdependence is a choice that only independent people can make, and the participants are generally able to produce more together than either person would be able to produce separately (dependent people do not have the free choice to enter into an interdependent relationship). It is easy to presume that learners come to tertiary education with independent skills required for academic success. However, a significant number of learners come to tertiary unable to complete tasks on their own. As Dzubak (2006) states a large number of adult learners are underprepared for tertiary learning and require academic assistance. To then place these students in a group where they are required to complete certain competencies to avoid the group failing puts added pressure on these learners. Therefore, a level of independence of thought is required. These learners could initially come to an institute and may be academically dependent on the teacher and learning support centre until they learn these skills. Johnson and Johnson (2003) found that placing underprepared learners with academically independent learners in a positive interdependent environment promoted peer tutoring improving individual skills of both learners.

There has been a divide between solitary, independent learning and cooperative or collaborative learning in terms of which prompts higher thinking skills and therefore creates successful academic learners. Academic skills such as critical thinking skills; problem solving, evaluating, analysing, debating and critiquing among others (Krathwohl, et al., 1964) are required in higher education. The higher the level of learning the less face-to-face time is allocated, an essential element when learning practical skills required for clinical practice, more academic independence is required in order to complete a qualification successfully. However, there have also been significant studies that show that learning together promotes higher order thinking skills and therefore, is an essential requirement of learning in higher education.

The Johari Window

The Johari window is an indication of aspects of our self and possibly why both self awareness and peer feedback are so important. Inventors of the Johari window (Luft & Ingham, 1955), discuss four aspects or windows of ourselves; our open self is everything known to ourselves and others, our hidden self is all that we know and keep secret, our blind self (spot) all things that others know but which we are unaware of, and the unknown self represents everything that is still unknown to ourselves and others, that which remains to be discovered.

The windows change size depending on the environment we are in at the time. When teaching self-awareness, Luft and Ingham (1955) stress that it is important to get feedback from others in order to 'open' the blind spot window, whether it is positive or negative feedback. In a learning situation the learner may be performing a new technique or practising a new skill and while it is good practice for them to sit and reflect on how they did, feedback from an observer or participant would give another perspective.

It is the ‘blind spot’ that argues the importance of getting feedback or engaging in discussion with others in reflective learning environments. This relates to Boyd and Myers’ (1988) more in depth psychological perspective of transformative learning. Human actions reflect both conscious and unconscious dimensions (Singer, 1994). As Singer (1994) asserts it is the unconscious dimensions that influence our decisions and actions, and as a result we remain susceptible to the emotions that guide the subconscious, in a sense blind-siding our decisions.

	Things I know about myself	Things I don't know about myself
Things others know about me	Open Self	Blind Self
Things others don't know about me	Secret Self (Sacred self)	Unknown Self (unlimited potential)

Figure 2.1: The Johari Window (Luft & Ingham, 1955)

The ‘unknown self’ area would benefit from both critical reflection and the development of Dewey’s (1933) attitudes of open-mindedness and wholeheartedness can be developed through feedback or discourse with others. Zepke (2003) argues that people who do not reflect much have very large unknown areas and that the key purpose of reflections is to reveal more and more of the unknown self. The Johari Window shows that in developing critical reflection, in order to foster transformative learning, learners must rely on their own skills at times. However, the drawing on the knowledge of others is not only beneficial but can be an essential part of learning. It

is sharing with others that keeps us trustworthy and honest (Dewey, 1933) with ourselves and in doing so challenges assumptions and beliefs we may not have otherwise been aware of (Taylor, 2009).

As discussed earlier, the reflective learning journal has limitations as to how interactive it is. The reflective process has been seen as primarily a solitary process, not a social interaction with the learning community. Unless formal sharing spaces are provided with the tutor or peers, sharing may not occur. Another level of interaction is with the wider community. Because of our behavioural patterns it is sometimes difficult to develop a critical perspective on our own learning, for this reason alone analysis occurring in a collaborative and cooperative environment is likely to lead to greater learning (Osterman & Kottkamp, 1993 ; Zeichner & Liston, 1996). Sharing reflections can encourage a challenging of beliefs and assumptions that learners would otherwise be unaware of; awareness of meaning perspectives and habits of mind provides a greater disposition to change (Taylor, 2009).

Additionally, it has been argued that reflection has become mantra for reaffirmation of beliefs rather than a tool for exploration and thinking otherwise (Ecclestone, 1996). Solitary, internal reflection allows the learner to reflect on action or the experience (Argyris & Schön, 1978). However, collaborative reflection, being more outward looking, reframes the experience bringing in other perspectives to challenge the original pre-suppositions. Langan, Sheese and Davidson (2009) assert that transformations are most likely to occur when the learner engages not only with the materials but other learners as well. Placing an emphasis on collaboration, deep learning, reflection, engagement with caring, positive interdependence, as the essential ingredient, gives learners feelings of support and belonging. As a result the strong sense of disconnection felt by students and faculties are replaced by feelings of support and a sense of community. Transformation is in fact dependent on students overall experience of the course.

This view is supported by theorists who see reflections as a social process (Kemmis, 1985), that collaboration enables the reflective process to become apparent (von Wright, 1992) and that communication technology can be used to facilitate socially-mediated reflection (Herrington & Oliver, 2002). Herrington and Oliver (2002) describe reflection as both an individually mediated and a socially mediated process. Cazden (1988) found four cognitive benefits to peer discourse: students are forced to confront each others ideas, students can provide mutual guidance and support, relationships are made with real audiences from which they can obtain meaningful feedback, students can experiment and construct new understandings from peer discourse. However, Frank (2003/4) and Harasim (1990) found that text-based discourse often becomes more reflective than verbal communication.

Moodle, an open source classroom management system, has specific ratings for separate and connected knowing for activities. The original ideas of the separate and connected knower come from a women's developmental perspective (Belenky, Clinchy, Goldberger, & Tarule, 1986). Belenky, et al., (1986) developed the theory of the separate knower as being objective without including emotions, defending ideas by using logic and critical of new ideas unless they are proven facts. Whereas the connected knower is empathic and sensitive to others, understanding ideas from someone else's point of view and learn through sharing experiences and ideas with others. Cranton (2006) found that the connected knower is more likely to relate to others transformative learning experience. Moodle.Org (2007) asserts for effective group work all participants need elements of both separate and connected knowing. In a discussion forum a single posting may exhibit either of these characteristics or both characteristics together, individuals can be anywhere on the continuum from the separate knower to the connected knower or both separate and connected which is ideal.

Cohen et al., (2006) found that peer e-journals encouraged participants to complete and where there were problems with retrospective recall the prompting from a peer would trigger the other participants' memory. The online diaries allow for in-depth

insights of project implementation as well as highlighting challenges encountered and the development of solutions for those challenges, insights that may have otherwise been lost.

In a problem based learning (PLB) context Papanikolaou and Boubouka (2010) utilised the web-based system, MyProject, to scaffold evidence-based arguments. The system allowed the learners to work both individually and collaboratively to promote cognitive and metacognitive knowledge. Within the PBL context, computer based communication helped learners to organise, reflect on and share their work (Dirkx & Smith, 2009), aiding explicit thinking that was visible. Students valued the opportunity for collaborative peer interaction, spending a considerable amount of effort in testing discussing and trying out alternative approaches to problem solving which greatly influenced individual's discussions. Papanikolaou and Boubouka's (2010) references to visibility of thinking were either inaccessible or the studies merely referred to visibility without providing detailed findings.

Wee Sing Sim and Foon Hew's (2010) review of empirical research on the use of weblogs in higher education show that blogging could help student learning, perceived support to learning providing different view points from both instructors and peers. Blogging allows learners to observe their own changes in growth and thinking, over fifty percent of learners thought blogs increased intellectual exchange between students.

Summary

There are very few studies that take a step back from the microscopic view of group work and focus on what learners do naturally; move between individualistic and co-operative learning, examining the type of thinking that develops, not as a result of being dependent on each other, rather as a matter of discourse. Those studies that do examine this concept are within the e-learning context and successfully illustrate peer discourse does indeed develop deep learning, promoting transformation. However,

these studies lack findings that examine the type of thinking that occurs when moving between sharing together and learning alone, and importantly the experience from the learner's perspective. With these results in mind, are educators being too cautious utilising e-journals to promote interaction between student and teacher rather than peers? What type of thinking and learning would take place between learners of an experiential reflective e-journal that fosters promotive interaction among learners, compared to the current solitary reflective journal being utilized by the case study in this project?

Chapter Three:

Methodology and Methods

Chapter Three: Methodology and Methods

“Not everything that exists can be counted,
and not everything that counts can be counted”

Albert Einstein

The approach for this qualitative interpretive research study was from an interdependent constructivist perspective due to the nature of the e-learning environment. This case study (Bryman, 2004) was a comparative study of two teaching and learning strategies; traditional reflective journal and the e-journaling in developing interdependent learning. Participants reflected on traditional journaling and e-journaling experiences.

There are two different philosophical foundations with underlying epistemologies (beliefs about origins, nature and limits of human knowledge); Objectivists, who believe that knowledge has a separate, real existence of its own outside the human mind, therefore learning is transmitted knowledge. In contrast, Constructivists believe that humans construct all knowledge in their minds by participating in certain experiences, therefore learning is constructed knowledge (Dewey, 1933; M D Roblyer, 2003b). Independent learning has been criticised as an isolated way of learning for the student, a solo-cognitive process, (Steketee, 2006, p. 133). This directly relates to the self-reflective process of journaling (Schon, 1995). Hyslop-Margison (2004) argues that technologies in learning sit in the constructivist's paradigm, specifically the internet and the World Wide Web; this raises the issue of the criticism of learning via these technologies.

From another perspective social constructivist approaches are more fitting for research involving e-learning, “for social constructivists learning is a social, collaborative activity, an interdependent rather than independent and isolated one” (Leach, 2003, p. 112). Social constructivists argue that self directed learning does not fit all, interdependence is collaboration with peers to make meaning in socio-cognitive spaces (Boud, 1995a; Bray, et al., 2000). This project investigated the movement between solo-cognitive and social-cognitive processes. The researcher values both processes rather than one over the other, therefore an interdependent

constructivist approach was taken, making meaning and constructing knowledge through independent learning as well as the shared experience.

Method

Case study

Case studies can be used to examine organisations as a whole, or facets of an organisation. As Bryman (2004) and Cohen, et al., (2007) state that a single case study or in this study ‘single school’ case study is in depth comparative reflective study. In this case, two teaching and learning strategies are being compared; traditional journaling and e-journaling in developing interdependent learning. It is important in a case study to let the events and situations speak for themselves rather than be evaluated or judged by the researcher. Hence, the rationales for utilising the case study method in this qualitative study. Participants reflected on their experiences of the traditional journaling process and e-journaling and the researcher will report the findings. To maintain the confidentiality of the participants pseudonyms have been allocated in reporting the findings.

A case study can be criticised as weak if not enough data is collected to present an in-depth picture of reality (Cresswell, 1998). Multiple sources of information ensures that the case is illustrative as well as improving the reliability and validity of findings (Burns, 2000). Therefore, this case study gathered three sources of evidence; online observations, focus group interview from students and focus group interviews from tutors. This required the researcher to be aware of the time it took to gather the data.

It is argued that generalisability is a problem, particularly within a single case study (Bryman, 2004; L. Cohen, et al., 2007; Silverman & Marvasti, 2008). A qualitative case study provides a unique example of a unique situation and can as, Cohen *et al.*, (2007) describe, “penetrate situations in ways that are not always susceptible to numerical analysis” (p,254). There is no point in generalising an intrinsic case study because of its critical uniqueness (Burns, 2000). Additionally because of the sample size a qualitative case study lends itself to depth of findings rather than breadth as in

quantitative case studies. As a result readers transfer findings making connections to their own contexts (Bryman, 2004), for example, other disciplines that engage in journaling or e-journaling as a teaching and learning tool may find aspects of this study useful.

By employing an open reflective approach that critically examines the researcher's interpretation of findings, the researcher can become aware of how their personal views influence their interpretation. The single case study has been used, whereby an in-depth examination looking at one Private Training Establishment offering qualifications in a range of Natural Therapies (Bryman, 2004). Data was collected from three classes of adult learners and their tutors who currently use traditional experiential reflective journaling procedures.

Sampling

The total population of the PTE consisted of adult learners ranging from school leavers to mature students 250 – 300 students were full time and part time from all areas of the Auckland region. Purposive sampling of the three classes and their tutors represents the total population of learners and tutors who specifically use traditional journaling methods as a teaching and learning strategy. There were 14 learners and four tutors in this sample. The tutors formed their own focus group ensuring triangulation, along with the focus groups of the learners and the online observations. As a qualitative case study is unique the focus groups are described in more detail in Chapter Four.

Design

This study will incorporate the following research tools; content analysis and focus groups as displayed in the visual model below.

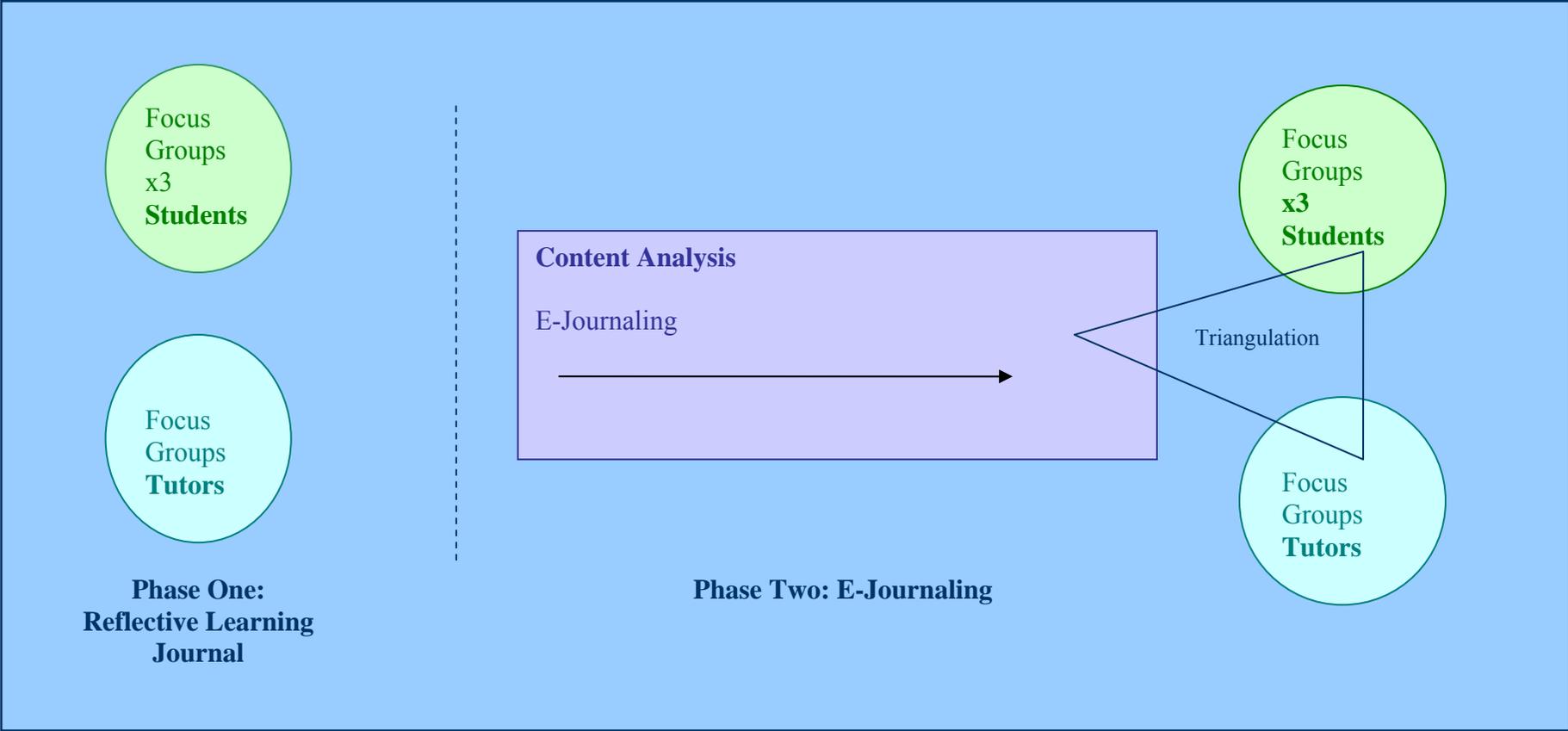


Fig 3.1: Data Gathering Design

The Research Plan

The research design is that of a consecutive comparative study. Comparative studies can run consecutively or conjointly using exactly the same design and research tools. (as shown in the diagram of the design). The research design consists of two cases, traditional journaling and e-journaling.

Phase one: Reflections of Reflective journaling

As shown in Figure 3.1, week one of the data gathering phase focused on the reflections of the learning experiences from utilising the traditional reflective journal through focus groups. Three questions were asked to gain the perspectives of the three groups of learners and another group consisting of their tutors shown in Appendix 5.

Phase two: E-Journaling

Week two to week six of the data gathering phase consisted of observations of the e-journals. Data was captured via Moodle and the content analysed using the facility provided by Moodle, ratings for interaction, and an adaption of Henri's (1992) analytical model.

After the observations data gathering focused on the reflections of learning through the use of the e-journals utilising focus groups. Three questions were asked to gain the perspectives of the three groups of learners and another group consisting of their tutors as shown in Appendix 6.

Data Analysis

Data analysis was due to begin in week one of the data gathering phase. However, this was not possible due to one group completely pulling out of the project, which is discussed in detail at the end of this chapter. Therefore organising of data took place and a search for a replacement group began. As the e-journaling process lends itself to continual data gathering, data was gathered and analysed on a weekly basis

with final conclusions drawn and an overall perspective gained in week six. Both the wait for the replacement group to gain consent, and the learners to begin their course, took some time adding another three months to the data gathering process. Initially a year was applied for in the proposal for the data gathering phase in the case of any such occurrence. Therefore, timing of the data gathering only became an issue as it delayed the data analysis process.

Content analysis was be utilised as a qualitative tool for collecting data which was the process of summarising and reporting written data; the main contents of the data and their messages (L. Cohen, et al., 2007). Content analysis is an unobtrusive technique whereby observation can occur discreetly. Because it is systematic and utilises verifiable codes and categories, content analysis has been used as an alternative to numerical analysis of qualitative data. Content analysis organised, analysed, reduced and interrogated text in a summary form through the use of pre-existing categories and emergent themes.

A group interview or focus group consists of more than one interviewee. It is suggested that a focus group consist of no more than eight participants (L. Cohen, et al., 2007). There is a reliance on the group to interact and discuss the topic supplied by the researcher in order to develop a collective view, a contrast to an individual view. Therefore, the groups of learners consisted of two groups of five and one group of four and a group of tutors consisting of four.

Learners and their tutors reflected on the current method of traditional journaling in relation to solitary learning (S1) and collaborative learning (C1). Transformative learning was questioned in the focus group. Students then participated in the e-journaling process. This process was observed, where students and tutors reflected on e-journaling in relation to interdependent learning and compared to traditional journaling through the focus group. Students and tutors focus groups were separate.

Reliability

Reliability of research is defined as the accuracy of the research tools used in a study. In qualitative research it is the fit between what the researcher records as data

and what actually happens in naturalistic settings (L. Cohen, et al., 2007) and the researcher must ensure that the reasons for collecting the data are clear (Bryman, 2004).

Content analysis

It was intended that the Gunawardena, Lowe and Andersons content analysis model (1997) would be used to compare the content as Panko and McLoughlin (2001) report this model indicates whether collaborative learning has been achieved, incorporating metacognition into the evaluation, which is essential for the evaluation of High Order Thinking (HOT). However, very quickly into the analysis it became apparent that this tool was not capturing the data the researcher could 'see'. Therefore, it was found that Henri's (1992) model was easier to adapt to fit the purpose of this study in order to capture the data the researcher could see unfolding. As Gunawardena, et al., (1997) argue each qualitative study is so unique that a new model should in fact be created to capture the data that uniquely fits the purpose of the study.

Group interviews and focus groups

Reliability in interviews and focus groups can be increased when consideration is given to the careful formulation of questions (Appendices 5, 6, and 7). The meaning of the question should be consistently clear for the interviewee and need to reflect the phenomenon being researched (L. Cohen, et al., 2007). Focus group questions were open encouraging reflection on the process of each journaling strategy in relation to the phenomenon; the critical dialectic.

Validity

Validity of research is defined as the appropriateness of the research tools used in a study. "qualitative research is not concerned with generalisation, its validity is strengthened by triangulation (L. Cohen, et al., 2007), discussed in the following section. External validity is established through thick descriptions of data from which judgments can be made possible.

Content Analysis

Henri's (1992) model has been criticised as a content analysis tool. However, as argued earlier qualitative case studies are so unique that a new content analysis tool needs to be created for each study. This is what happened in this case. Henri's model was easily adapted to incorporate the grading system used by Moodle for interaction and cognitive thinking. The adaptation showed the movement between solitary learning and collaborative learning and the types of thinking that occurred as a result.

Focus groups

Validity in interviews is strengthened if the interview questions and the categories used by the researcher are meaningful to the participants. Data analysis can minimise through coding of data, ensuring that the research questions are answered and that data is not analysed selectively (Bryman, 2004; L. Cohen, et al., 2007). Miles and Huberman's (1994) narrative matrices were an excellent tool for organising and reducing extensive amounts of data of both the focus groups content analysis.

Triangulation

Multiple collections of data ensure validity. Triangulation enabled the researcher to view the phenomenon from different perspectives (L. Cohen, et al., 2007). Triangulation coupled with sophisticated rigor thickens and deepens the interpretive base of any study, particularly if a case study method is employed (Burns, 2000). Triangulation in this study was established through using multiple methods of data collection; self-completion questionnaire, interviews and observations. Used in qualitative research to investigate different perspectives, triangulation naturally produced a different set of data. Research tools act as filters through which the environment is selectively experienced. They are never theoretical in representing the experience. Therefore reliance on one method may bias or distort the

researcher's viewpoint. Furthermore, methods that contrast with each other ensure the researcher can be more confident (L. Cohen, et al., 2007).

Methods of Data collection and analysis

A qualitative researcher analyses data by organising it into themes, concepts or similar features. New concepts are developed, conceptual definitions formulated and examined in terms of the relationships among concepts (Bryman, 2004).

In order to manage data effectively coding is essential, coding sorts data into meaningful categories for analysis (L. Cohen, et al., 2007). For this study structural coding (Saldana, 2009) was utilised as it is particularly useful for studies investigating multiple participants to gather themes of an exploratory nature. Structural coding acted as a 'labelling or indexing,' (Namey, Guest, Thairu, & Johnson, 2008, p. 141)

Miles and Huberman (2006) aim for a methodical approach; using a systematic qualitative analysis can have both validity and reliability if there are three concurrent flows of activity: (1) data reduction; (2) data display; (3) conclusion drawing and verification. Miles and Huberman's (1994) narrative matrix was used to reduce and organise the data and is used in this chapter to present the findings of the focus groups. The purpose of content analysis was to generate data to show evidence of solitary learning, then collaborative learning, second phase of solitary learning where collaborative feedback is assessed in terms of appropriateness of use or not. Finally, the purpose of interviews (tutors) and focus groups (learners) was to generate data that could be triangulated with the content analysis to ensure validity.

The use of matrix displays supported the identification of emergent themes, patterns or explanations. This was completed initially through excel spread sheet using colour coding for each of Henri's categories. These were then reduced and placed into a narrative matrix (Miles & Huberman, 1994) in order to give an overall representation response from each group to each question.

Ethical Issues

Research is necessary for the advancement of knowledge and evidenced based practice. The participants must never be treated as mere objects informed voluntary consent was gained. Pseudonyms were allocated to the participant's narrative extracts included in the findings chapter and the discussions. The participants were interacting online were coded numbers rather than names for confidentiality as the dignity and welfare of the participants was paramount.

The informed voluntary consent outlined the purpose of the study, the method of group allocation, the participant role in the study, possible benefits to self and others and the option to withdraw at any time without giving a reason (See Appendix 1). Formal consent for participation in interviews, focus groups or observations with the indication of recording or taping was gained. Voluntary consent from the training provider, students and tutors was gained (See Appendices 2, 3, 4). Transcripts were returned to the participants for verification of information.

Minor Alteration

Initially three groups of journaling students and their tutors were invited to participate. The three groups were approached two weeks prior to the first phase of data collection. The research was explained verbally; information sheets were handed out with the consent forms and the participants were given the opportunity to ask questions regarding their role in the study. Any students who wanted to participate signed the voluntary consent; anyone who was unsure was given the opportunity to think about it. At this point three groups agreed to participate consisting of two groups of five and a third group of 15 students. Two weeks later when the first round of focus groups were about to start the group of 15 no longer wanted to participate. As participation is voluntary and participants can pull out at any point without giving an explanation this meant another group had to be found. It was nearing the end of the semester therefore a new group could not be found until the new semester. Data continued to be gathered from the other participating groups and their tutors. In the new semester there was only one course implementing journaling that could be recruited; this course was a course the researcher was teaching. As discussed and agreed with the research supervisor there

was an alteration whereby the researcher became the teacher for this group. To ensure there was no participant bias, research assistance was obtained for the interviewing, and transcribing the focus group recordings and data analysis was cross checked for this group. While first perceived as a set-back for this project this minor alteration has proved to be an enriching experience which is reflected on in the next two chapters.

The Natural Therapies Profession is a relatively small profession in New Zealand. There are only 10 accredited providers offering Natural Therapies Qualifications nationally, with only three in Auckland. As this study includes tutors and students as participants, in order to protect the confidentiality of the participants a very brief description of the PTE and the programmes offered has been given.

This study was not specific to any culture. It was not anticipated that Maori would be a part of this study, however the researcher became aware of a Maori participant, therefore, the researcher sought the advice and consultation of a Maori advisor, in honour of the principles of the treaty of Waitangi; participation, partnership and protection. While this learner felt their contribution had no relevance to their cultural perspective it was still important to acknowledge and honour the culture during the process of this study.

The participants were informed of the protocols for summaries and verification. Information was shared with the participants when approval was gained. The participants will be provided with a final report. As the rights of the participants must be respected at all times; the reason for the research was made apparent and clear; the use of the outcomes of the study was explained.

Chapter Four:
The Case Study

Chapter Four: The Case study

As each qualitative case study is so unique this chapter introduces the case study and the focus groups to give the reader some insights. As explained earlier the Natural Therapies Profession is a relatively small profession in New Zealand, there are only 10 accredited providers offering Natural Therapies Qualifications nationally, with only three in Auckland. As a result, this presented an ethical issue in terms of discussing this case study in detail. As this study includes tutors and students as participants, in order to protect the confidentiality of the participants a very brief description of the training provider has been given whilst still maintaining anonymity. For this reason pseudonyms have been allocated to all participants in the reporting of and discussions of the findings.

The Private Training Establishment offered NZQA (New Zealand Qualifications Authority) accredited courses in a range of Natural Therapy subjects. Students could gain qualifications at certificate and diploma levels. The two semester intakes had approximately 200 full time, adult students and a similar number of part time students. The courses at present were 'mixed mode', whereby a course was structured with face-to-face block courses and as well as sections that were distance learning components. As a part of the establishments Charter the training provider was aligned with larger institutions who train in associated health areas. The training provider's qualifications provided pathways into degrees courses with the National Institute of Health Sciences (Australia), University of New England (Australia), Charles Sturt University (Australia) in co-operation with South Pacific College, Unitec and AUT (New Zealand).

The population of adult learners ranged from; school leavers to mature students who were completing face-to-face and distance courses full time and part time, predominantly from the Auckland region. However, there were adult learners completing courses scattered nationally as far as the south island of New Zealand. The distance learners were completing traditional distance courses; courses that were correspondence based rather than online (Guri-Rosenblit, 2005), and were also given the opportunity to have face-to-face contact.

As a part of a strategic plan to introduce technologies into learning a college wide internal Computer Skills Survey was carried out. It highlighted that out of the 58% of staff members who responded only 4% would be open to online learning. However, the difference between blended learning and face-to-face learning was marginally small; blended learning 44% and face-to-face learning 48%. The preference was for face-to-face learning. In a professional development workshop the resistance to taking on more work in order to learn the technology and change teaching strategies was high. Therefore a blended learning professional development programme as a part of the strategic development plan was designed and was put in place that was predominantly online. It was intended that teaching and learning strategies were designed and were integrated into courses where the tutors have high levels of computer skills and enthusiasm to implement online learning into their programmes. These courses were to be used as models in the professional development programme.

The Computer Mediated Communication (CMC) chosen to be implemented was Modular Object-Orientated Dynamic Learning Environment or more commonly referred to as Moodle. Moodle is a course management system (CMS), a software package designed to help educators create online courses and manage learner outcomes. Such e-learning systems are sometimes also called Learning Management Systems (LMS), Virtual Learning Environments (VLE) and Learning Content Management Systems (LCMS) (Frank, 2003/4; M D Roblyer, 2003a; Steketee, 2006). Moodle is Open Source software, which means it is free to download, use and modify. Moodle has the function to capture 'separate and connected ways of knowing' in its course rating facility. This function analysed data immediately.

Sample Selection

The size of the sample is a factor that contributes to the rigor of a case study design; the larger the sample, the more representative it is of the whole case (L. Cohen, et al., 2007). The total population consisted of approximately 300 to 400 full time and part time adult learners across five faculties. Within these five faculties three used traditional journaling as a teaching and learning tool at different stages of learning, with slightly different requirements. However, the philosophy behind this pedagogy

was the same; experiential reflective learning. All of the learners and their tutors utilising journaling in the PTE were invited to take part in the case study, which required a commitment to participate in two 30 minute group discussions and journal online in a CMC space provided rather than on paper in their traditional format. In order to gain a true representation of the computer skills of the participants in the PTE, it was not necessary for the learners or their tutors to have any prior experience of online learning. They were however, required to have basic computer skills; be able to produce a word processed document, to send and receive emails and able to browse the internet. Both the learners and their tutors were given instruction on how to use the CMC system provided.

Focus Groups

Group One

Traditional journaling was utilised with the use of a journal that learners were required to produce hard copy journals (paper). The journal was semi-structured (Moon, 2006) whereby the student records their nutritional intake daily and any lifestyle activities they are involved in. If the student made any change this was also recorded, a rationale of why the change was made is given and a reflection on the effects to the participants general health.

Group One consisted of five females; two in their twenties and three are over forty. All had the minimum computer literacy skills required, however, none of these learners had ever studied online prior to the research project. The group's tutor had used journaling for the nine years in this course. He was computer literate and used the computer everyday in work. However, he had never taught or studied in an online course.

Reflective experiential learning is an essential part of the change process. In this case the process was to make a change, record the effects of the change and reflect on the positive changes to health that were experienced. This was a continual process throughout the duration of the course. In this context journaling was a personal observation tool used to affirm the positive effects from the dietary changes made to the health of the students themselves. The intention of this experiential

pedagogy allowed the learners to relate to these positive changes when advising within clinical practice.

The journals are a formative assessment and did not receive a mark but the tutor did have to sight them and the learners were required to discuss the diary commentaries with the tutor on the last lesson of the course. The course is level 6 therefore there was the need for the students to give a rationale for the changes made. Journaling has been utilised within this course for the last ten years.

Group Two

The traditional journal for Group Two was very structured. It required a specific daily practice and reflection of practice, answering specific questions. Every fortnight, an analysis of the learners' personal observations was required whereby the learners were required to look at patterns in practices, comment on, and suggest improvements for the following fortnight.

The learners in this course were from a diverse range of ages, nationalities and backgrounds, two male and three female. One woman was in her twenties, one in her thirties and one woman and the two men were over forty. Only the twenty year old woman is New Zealand born, the other four are New Zealand residents two from the UK, and two from Europe. As with Group One all the learners had the basic computer literacy skills required to enter the college; none had taken part in any online learning programmes prior to the study. This group's tutor was computer literate; used computers every day in work and had been teaching online since the beginning of the semester.

An experiential pedagogy is utilised in this context in order to develop client interaction skills. The learners were to make regular personal observations these observations are recorded in a format that is an interview with 'self'. The purpose of journaling for this context was as a tool in teaching self awareness.

In terms of the learning outcomes, the journaling was a formative assessment activity; the journals were simply required to provide evidence that the daily practice

has taken place. This course was in the first year of a two year level 5 Diploma course.

Group Three

Group Three had been completing traditional journaling in a previous course with another tutor; the requirements were slightly different so for this purpose the two original tutors were interviewed along with the new tutor. The context of this groups journaling was not unlike the previous groups, in fact more of a combination of the two; reflection of daily practices and to observe changes. The purpose of the previous journal was to apply learning to daily lifestyle practice through personal observation. The journal had a daily log and a fortnightly analysis. Again this journal was very structured in terms of the specific information required. The journal was formative and required for evidence that daily lifestyle practice had taken place. All had used traditional forms of journaling using the hand written process.

The new tutor implemented a different journaling format. The new group were required to journal their experiences on their own performance. They were given a new environment and situation with which to work with other learners, as a scenario for professional experience, and were required to journal directly after having had the experience. The format being semi-structured requiring the student to answer three questions:

1. What went well in the session and why?
2. What didn't go so well and why?
3. What would you change next time and why?

Again the journals were formative, only the tutor got to sight them as evidence of study. This group were made up of three men and one woman. One of the males had his own computer company; this male is over 40 and is the only New Zealand born in the group. The two other males were in their twenties and both European. The female was in her forties and of Indian descent. All three had the basic computer skills required to enter the college. All four have never studied online.

This group's new tutor had studied online in several courses and implemented the CMC system at this PTE but had only been teaching online since the beginning of the year.

While the content, content and purpose of journaling differed from group to group the findings showed similarities and extreme differences between the groups. These are presented in the next section.

Chapter Five:

Findings

Chapter Five: Findings

Introduction

As described in Chapter Three, this study used a range of data collection techniques that allowed the researcher to interpret the experiences of learning through the more traditional reflective learning journal and e-journal from the participants' perspective. The objective of this chapter is to present the main findings. This chapter illustrates the participant's reflections of reflective journal writing, online observations and the experience of learning through e-journaling. Conclusions will be limited in this chapter in order to discuss them in more detail in the next chapter.

This chapter is sequentially structured according to the design of the project. Part one of this chapter reports on the findings from the first round of focus group interviews. A framework for understanding the concept of interdependent learning is induced from the espoused views of the participants provided in their first interview. Research questions two and three; gather reflections of learning experiences of reflective traditional journal writing provided by the participants and are presented with their tutor's views

Part two is set out to correspond with the design of the study presenting the findings from three forms of data; findings from the content analysis of e-journaling contributions, the learner's focus group and the tutor's focus group discussion. Part two begins with the findings from the online content analysis using a modified version of Henri's (1992) analytical model. It goes on to triangulate these with the findings from both learners and tutors focus groups regarding their experiences of learning and teaching online. Within this paradigm of research the findings are a direct result of the participant's experience, therefore quotes will be included from the e-journals and subsequent focus groups. Pseudonyms have been allocated to protect the participant's privacy.

Throughout this chapter the distinction is made between each group as the context and content of journaling was quite different, as outlined earlier in chapter four. As a result of these distinctions the figure 5.1 could be replicated three times for each group. Each group was analysed with the online observation as a starting point. The tutor's response was analysed regarding the experience of using e-journaling as a teacher and the learning they observed online in order to triangulate the data. Miles and Huberman's (1994) narrative matrix was used to reduce and organise the data and is used in this chapter to present the findings of the focus groups.

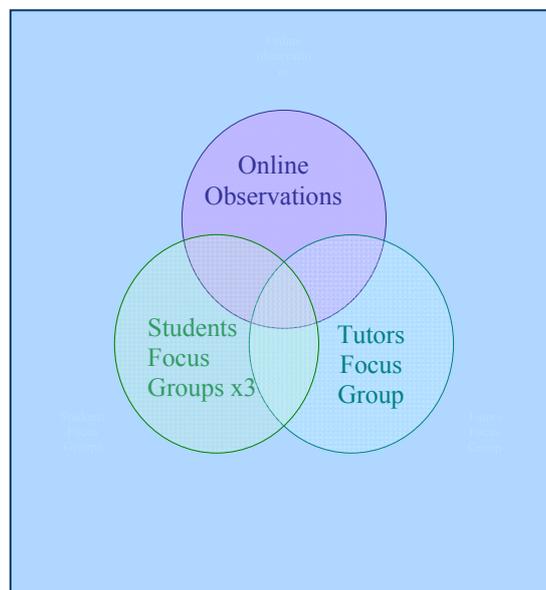


Fig 5.1: Triangulation of Data

The section in the centre of the diagram is the triangulation of data, which will be presented and discussed briefly in this chapter and expanded on in the next. The comparisons between traditional journaling and e-journaling made by the participants were analysed. Finally, issues around non-participation were identified.

Part One: Reflections of Learning through Traditional Journaling

Part one of this chapter corresponds with phase one of the data gathering process and is set out to report the findings of each of the questions as they were asked.

Defining Interdependent Learning: Question One

In response to the findings in the literature, it was important not to presume that the learners or their tutors understood the meaning of the term interdependent learning. Therefore, as a pre-discussion or warm-up style question, groups were asked what they understood of the term interdependent learning. Table 5.1 gives examples of the types of replies provided by each group and are a general representation of each group's response.

Table 5.1: Definition of Interdependent Learning

	Response	Tutor response
Group One	<i>...is interdependent learning...means to me that you are dependent on other people, so you can't do it on your own. Emma</i>	<i>Learning together, isn't it?...inter means between, together in groups. David</i>
Group Two	<i>Independent means learning alone...so this must mean learning together, inter- dependent would mean learning together. Mauro</i>	<i>...but independent means learning alone. Jean</i>
Group Three	<i>Is it learning together but also learning on your own. Daniel</i>	<i>...so interdependent learning means learning together. Connor</i>

Participants in all three groups discussed the term in order to deduce a meaning. As table 5.1 indicates; out of the three groups only one learner, in Group Three, knew the meaning of the term interdependent learning. While the question was unsuccessful for most in determining a definition, it did in fact begin discussions and 'warm-up' the conversation. Groups one and two had discussions around what independent and

dependent meant, concluding that it meant learning together to some extent. The Tutors also had a similar discussion, however Group One's tutor looked at the term 'inter' specifically and almost deduced the meaning.

Reflections of Traditional Journaling

Two groups of learners were required to make more than one change to their diet and lifestyle. The purpose of the reflective learning journal was to give a visual perspective allowing learners to observe the results of the changes they were making, not just be aware that changes were happening. The next stage in the process for the learner was to monitor how those changes were affecting their general health and well-being and make the relationship between the change and the effects on general health. As illustrated below, the findings indicate that traditional journaling has provided learners from all three groups worthwhile learning experiences.

Traditional Journaling: Question Two

When asked: **“what is your experience of learning from traditional journaling?”** each group gave responses that indicated an awareness of the purpose of the reflective learning journal and the learning process. Additionally, the learners were completely immersed in the reflective experiential learning process, as Emma's response indicates. Moreover, table 5.2 illustrates evidence of critical reflection and as a result transformation, whereby changes have actually been made and new perspectives or choices are in place. Learners indicated an awareness of the changes in perspectives demonstrating metacognition.

Table 5.2: Reflections on Traditional Journaling. Question Two

Group Name	Response	Tutor response
Group One	<i>...being present to all those different distinctions, and actually being active with them rather than passive in making changes. Emma</i>	<i>...to relate their personal changes to clinical practice. David</i>
Group Two	<i>It gives you the opportunity to notice what is changing and particularly if you look back you can see how things have changed compared to what you did before. Gioia</i>	<i>...awareness. Jean</i>
Group Three	<i>By doing or performing the practice you are learning, but then when you write it down you are learning again, you can examine the effects of the changes and relate that to clinical practice. Daniel</i>	<i>Developing awareness to changes that can then be applied to clinical practice. Ryan</i>

Traditional Journaling: Question Three

When asked “**what is your experience of learning from each other through traditional journaling?**” there was a mixed response as table 5.3 illustrates.

Table 5.3: Reflections on Traditional Journaling. Question Three

Group Name	Response	Tutor response
Group One	<i>We have 20 minutes at the end of class to interact with each other and ask what changes you have made and stuff. Yasemin</i>	<i>Absolutely ... I have found that it is the best part of learning experience that they have. David</i>
Group Two	<i>No, we don't really. We haven't yet opened the discussions...I'm not really aware of other peoples journaling because there is no formal space provided in class. Gioia</i>	<i>Yes, informally. Jean</i>
Group Three	<i>No, it really wasn't the type of information you would share. Malachi</i>	<i>I think one of the reasons why [they don't share] is because the information is very private and they are not ready to share the information. Ryan</i>

The students in Group Two were adamant that they has not learned from each other as there was no formal space provided by the tutor. However, their tutor had experienced them sharing; informally discussing their journals in and around class time. Whereas, all of the learners in Group Three and their tutor were in agreement that they felt the contents of the traditional journal were too private to share.

Group One were allocated formal time within the face-to-face classroom to share their experiences from their journals. The tutor had not discussed this during the interview; it was an unknown element going into Group One’s focus group.

Table 5.4: Common Themes from the Reflective Journals

Themes	Response	
Value	<i>I Found it fantastic (Emma, Gp1)</i>	<i>I really enjoyed the process (Isha, Gp 2)</i>
Reflective experiential learning	<i>Reflection highlights what you are doing well but it can also show you areas where you need to improve. I found it very deep thinking, (Isha, Gp3)</i>	<i>...you think OK I've learned that. By writing it down you think, OK that's what happens, and you learn from that. Gioia (Gp2)</i>
Meta-cognition	<i>You can also see the areas you are working with and the areas you are not working with. It gives you some direction actually. Emma (Gp1)</i>	<i>It makes me think clearer of my point of view. If you are thinking about what and how you are learning you can go even further. Rob (Gp3)</i>
Content	<i>We got to reflect on the changes we had made in our diet and lifestyle and how those changes affected our general health Malachi, (Gp3)</i>	<i>That's actually our tools, that out tools to get our practice up and running. You've actually done it and you can suggest from your own experience "try this", that's out tools isn't this what this is all about (the journaling and sharing). Yasemin (Gp1)</i>
Privacy	<i>No, it really wasn't the type of information you would share. Malachi. (Gp3)</i> <i>We were journaling about very private changes that would only really want the tutor to see from an expert's perspective. Daniel (Gp3)</i>	<i>No not at all. (Gp2)</i> <i>I don't feel it's anything I want to share. I know that I will share it with the tutor and I trust the tutor. Louise (Gp2)</i>

As illustrated in Table 5.4, a common finding across all groups was the enjoyment aspect of the reflective journaling process. Participants went on to relate this to the type of learning in terms of reflection, the purpose and also the level of learning, being aware of the learning process and being immersed in learning at the same time.

There were a number of examples given by the participants as to how aware they were of the changes they were making and the reflection on those changes having an impact on their learning. This affirmed the right pedagogy for the content and context of learning. Additionally, metacognition was evident; an awareness of how learning was happening was very evident through the discussion, a response that will be discussed in more detail in the next chapter.

The content of the journals were very similar regarding making changes to diet and lifestyle, also in terms of recording and monitoring changes to general health. However, due to the content within the journals Groups Two and Three felt that they had not shared their journals in a formal class situation or informally in general discussion. Expressing concern that the contents were only appropriate for the tutor to read and evaluate as the expert.

Differences

As Table 5.5 indicates, Group Two and Group Three felt that the contents of the journals were very private, this raised issues around trust and sharing. As a result the learners found the process very solitary and separate from their peers.

From a different perspective Group One were allocated time within the face-to-face class to share as the tutor found the sharing the most important part of the learning process. On further questioning the sharing time was unstructured; the learners being given 20 minutes to discuss their experiences from their journals. There were no specific requirements to be discussed.

There were many examples given by the Group One as to their experiences of learning by sharing their journals. Group One did not express any issues around privacy and trust understanding that sharing was part of the learning process.

Table 5.5: Differences in the Reflective Journal Experience

Themes	Against Sharing	For Sharing
Privacy and trust	<i>We were journaling about very private changes that would only really want the tutor to see from an expert's perspective. Daniel (Gp3) ...I trust the tutor, I'm not saying I don't trust you all .Gioia (Gp2)</i>	<i>I'm not secretive by nature but I am quite private. It's like you say about the class. It's all about learning and if you are not willing to share the stuff then it's pointless. Emma (Gp1)</i>
Sharing	<i>Currently it is a very solitary practice...all agree. Mauro (Gp2) No, not even on an informal level...it's not the type of information you would share. Malachi (Gp3)</i>	<i>We have our class interaction our group studies Isabel (Gp1) ...co's like not everyone knows as much as you do so you might say well I'm struggling with this and the offer suggestions and visa versa that's quite good. Ann (Gp1)</i>
Content	<i>We were journaling about very private changes that would only really want the tutor to see from an expert's perspective. There were a whole range of diet and lifestyle changes but some were more personal changes like bodily functions... Isha (Gp3).</i>	<i>But I've got young people in my group and it has made me think about things that I wouldn't have. Emma (Gp1)</i>

There was evidence given to support peer tutoring as a result of the sharing process and of how specific content contributed by peers had had an affect their own learning.

Conclusion:

In conclusion, while all of the learners had an understanding of the purpose of journaling they were also aware of the reflective learning process and its benefits, demonstrating metacognition. Moreover, there was an expression of enjoying the learning process. However, because of the content and the context of the journals

two of the Group Two and three did not share their learning experiences. Whereas, Group One who were given formal sharing time in class understood and gained from the shared learning experience.

Part Two: E-journaling content analysis and reflections of learning through focus groups

Content Analysis

Interpretive data, if not managed appropriately, can quickly become a chaotic mess; not only on the floor of the room in which the analysis is taking place, but also in the mind of the researcher, as there are many aspects to the meaning of each piece of qualitative data. In order to organise and manage the wealth of data produced in this study a colour coding method was used, along side a basic system of coding (Saldana, 2009). The method of computer mediated communication (CMC) content analysis has been chosen for its way of providing analysis of interpretive qualitative data in e-learning environments. As discussed in chapter three Henri's (1992) method of CMC content analysis focuses on the process of learning rather than the product. This method has been developed to analyse cognitive and metacognitive processes along with interaction. The table has been modified Henri's table to 'fit' the purpose of this study.

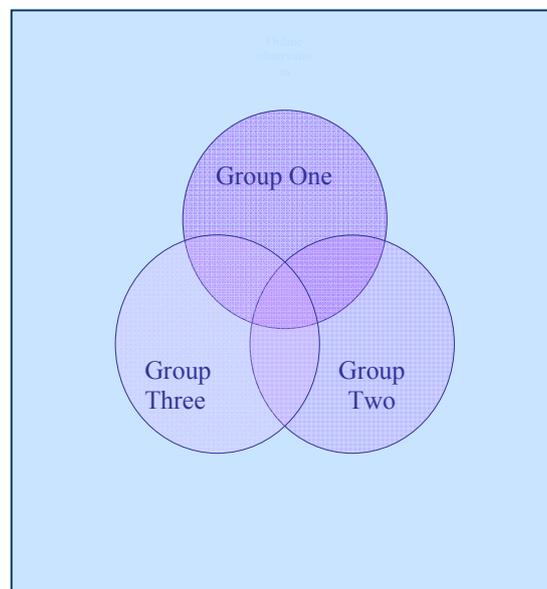


Figure 5.2: Triangulation of Online Observations of Students E-Journals

Table 5.6: Overall Online Participation

	Learner participation	Tutor participation
Group One	3 out of 5	0 out of 1
Group Two	1 out of 5	2 out of 2
Group Three	4 out of 4	1 out of 1

Table 5.5 shows the overall findings for online participation that; in Group One, three out of the five learners visibly participated while their tutor did not participate at all. In Group Two only one out of the five learner's participated while both tutors did participate. In Group Three all the learners and their tutor participated in discussions. While in Group One learners made postings and responded to each other their tutor did not participate at all. In Group Two only one participant out of the five made a posting and did not get a response from the rest of the participants in his group. The tutor's however, did respond to the one participant. Group Three had the most active participation online both learners and their tutor made regular postings.

Group One

Two learners from this group experienced difficulties with technology for varying reasons. This raised an interesting discussion in the focus groups which will be reported later in this chapter. The participation and sharing from this group while minimal was in depth and interactive. The learners in Group One were journaling and interacting online, discontinuing their face-to-face interactions. The first postings were completed in the same method as the reflective journal process; solitary and self

reflective rather than interactive. Interactions proceeded after the initial e-journal posting.

Group Two

This group did not participate in the e-journals. One student participated online; however, there were no responses from the other group members. As discussed later in the focus groups this learner would have liked to have shared his journal, however as his peers did not respond or make their own contributions there was no-one to interact with. The reluctance to participate by this group will be introduced in the next section and discussed in detail in the next chapter.

Group Three

Group Three's e-journaling came after a face-to-face interaction. Analysis of the e-journals post face-to-face interaction showed very different findings to that of Group One. During the content analysis it became evident that as a result of post face-to-face interaction the solitary e-journals went to metacognitive levels very quickly. Thinking processes were more evident online as discussed further on in this section.

Definition of Table

Table 5.7 and 5.8 shows examples of online contributions made by the participants who took part in the e-journals. The table is a modified version of Henri's (1992) content analysis. The table reflects four of Henri's five categories of content analysis. Henri (1992) refers to the participative dimension which is basically the number of messages and number of statements transmitted by one person or group. This information was easily and readily available through Moodle; therefore Henri's category was unnecessary.

The second modification was the use of terms for interaction from the grading within Moodle, rather than Henri's. The ratings on Moodle gave either a numerical rating or a rating for interaction. Moodle was chosen for this facility. The ratings on Moodle for

interaction were; mostly separate, connected and separate and mostly connected. The ratings were given at the time the postings were made, therefore it was unnecessary to rate the postings twice.

Coding in Table:

Interaction: S – separate knowing
 MS – Mostly separate knowing
 S&C – Separate and connected knowing
 MC – Mostly connected knowing – Promotive interaction

Cognitive: s – surface
 I – Inference
 J – Judgement
 St – strategies

Metacognitive
 knowledge: P – Person
 T – Task
 ST – Strategies

Metacognitive
 Skills: E – Evaluation
 PI – Planning
 R – Regulation
 SA – Self-awareness

Table 5.7: Content Analysis of E-journals Group One

Group One	Social	Inter-action	Cognitive code and evidence		Metacognitive code and evidence	
Emma	Active	MS	ST	<i>I have started with a week of Moong Soup cleansing diet, date energy drink and reading up about the philosophies etc</i>		
		S&C			SA	<i>Stress: Average. Still anxious about my work - having it work and fitting everything in but still pushing myself and not getting enough rest.</i>
		MC			PI	<i>I was interested in your comments ... so if you need some ideas about how to... that will give your best source of iron, then I'd be happy to have a conversation about it.</i>
Ann	Active	MC			SA	<i>I have given up wheat and I'm feeling a lot lighter. I don't usually eat much bread but when it's around I love it but I feel bloated and heavy afterwards so</i>
		S&C			ST	<i>I decided to leave it out of my diet and I definitely feel a lot better for it.</i>
Elizabeth	Active	MS	s	<i>...but if I do I buy this water from the health shop that is organic (O-something?). It works for me!</i>		
		S&C			SA & ST	<i>Exercise: I have done a lot less than I have in the past but I believe that my body needed some time to repair itself</i>

Table 5.7: Adapted from Henri's Analytical Model (1992)

As discussed in Chapter Three the qualitative enquiry generates large amounts of data, from each focus group in this case online dialogue. Therefore, the tables are representative of the majority of dialogue from each of the participants. For example, where the dialogue was analysed as being predominantly cognitive the table is representative of the cognitive postings. The drawback being that the reader only sees snapshots from the wealth of data produced.

Table 5.7: Contributions made by Group One

All of the contributions by Group One were active with the curriculum of the course rather than social discussions. The contributions exemplify the level of separate thinking and connected thinking. During the first phase of contributions where learners were making solitary, separate e-journal postings, a majority of the dialogue was cognitive, simple reflection.

However, during the second phase of dialogue participants began to respond to each others postings. The majority of the contributions that occurred when rated both separate and connected or mostly connected and moved to a metacognitive level. For example, Emma and Ann demonstrated cognitive thinking while making their initial separate postings. When responding to a peer they both moved into metacognition, reflecting critically. Whereas, Elizabeth's initial posting occurred during phase two of the postings and in response to her group; as a result she demonstrated metacognitive thinking throughout. During the third phase of postings, as a result of interactions the participants showed evidence of putting strategies into place and deciding on their own health requirements; transformative learning as a result of the interaction. Emma gave an example of promotive interaction, whereby she displayed interest, encouragement and support to Ann.

Table 5.8: Content Analysis of E-journals for Group Three

Group Two	Social	Inter-action	Cognitive	Metacognitive	
Daniel	Active	S		E	<i>What did not go well was, not enough time and I did not summarise the session</i>
		MC		E, ST	<i>... Also needed to set boundaries at the beginning of the session. In the next session I will be more conscious of setting boundaries when we start and ending with a summary/conclusion. It was a great exercise.</i>
		S&C		T& E	<i>Basically she noted good listening skills, confirmation by nodding head, well asked questions, constructive points to reflect on and allowed conversation to flow naturally. I felt the feedback confirmed that the approach I had taken was the right on in this case, thanks.</i>
Malachi	Active	S		SA	<i>I want to be supportive but I feel dependency takes away from ones own gain</i>
		MC		T	<i>One point Daniel made really stuck out there, how does one prepare for a mentee session? If we know the subject it should flow well.</i>
		S&C		E& PI	<i>What about getting them to inform of a few areas that they would like to discuss before the session? Maybe before the session have them email what they would like to get out of it to prepare both sides Malachi</i>
Isha	Active	S		SA	<i>It is apparent one should stay focused on the topic, and pushing ones boundaries in questioning, acting into the role isn't necessary. One should be oneself, be more real and to the point.</i>
		MS		E	<i>... disempowered the mentee by focusing on negatives. They made him feel defensive and he felt it was a little out of context/irrelevant. This didn't go well</i>
		S&C		S	<i>As the mentor could ask "am I saying this for the benefit of the other person or my own?" I thought that would be of benefit next time.</i>
Eli	Active	MC		T	<i>Not sticking to the questions all the time makes the mentee feel better understood and gives the client an impression of professionalism</i>
		S&C		E& ST	<i>I agree with the point that it depends what you are teaching and also on the students' capabilities, but creating harmony between teacher and students is one of the most important factors in my opinion ...</i>

Table 5.8: Adapted from Henri's Analytical Model (1992)

Contributions made by Group Three

Table 5.8 represents dialogue from contributions made by Group Three. This group were required to work with a peer in the mentoring process, after which they were required to reflect on their performance. Unlike Group One in the first phase of separate postings Group Three's dialogue went straight to a metacognitive level. For example, Daniel's dialogue, evaluating what went well during the session. During the second phase mostly connected deepened thinking was evident. For example, Eli's response, offering suggestions regarding the task. Within the third phase of postings separate and connected knowing indicates participants assimilating or accommodating information, weighing up whether in agreement with a peer's suggestion or not. For example, Eli agreeing with the suggestion from the peer evaluating it and forming his own opinion in relation to a strategy, while Daniel trying a new strategy evaluates the task and agrees with the suggested strategy.

Social Dimension

Henri (1992) refers to the social dimension as general socialising conversation rather than being directly linked to course content. During the analysis it became immediately evident that the learners who participated were interacting directly with the content of the course rather than making social conversation. As the analysis developed this pattern continued. This was due to the separate, self-reflective nature of an initial posting in a journal.

Interaction

As described earlier the postings were rated for interaction using Moodle criteria. Mostly separate is a way of describing a posting where the learner not interacting with other participants. Mostly connected knowing, refers to postings where the learner is referring directly to and interacting with another group member; the posting was in response to a peer and there were links to each others experience. Separate and connected knowing refers evidence in learner's discussions to learning together and learning alone, relating personal solitary experience with a peer's experience.

Group One's initial postings were separate, self-reflective based on daily practice and the response in their health. Emma and Elizabeth made journal entries that were separate. Elizabeth's entry demonstrated predominantly cognitive processing, progressing to metacognitive processing. Where as, Emma's separate postings indicated a cognitive entry progressing to a metacognitive response, this occurred throughout her postings. Interestingly, as soon as the responses became interactive dialogue showed evidence of metacognition. Ann's entry was in response to Emma and Elizabeth and was predominantly at a level metacognitive self awareness, as was Emma's response to Elizabeth.

In contrast, Group Three were making solitary entries based on their performance which had been interactive. Their discussions commenced at metacognitive levels of thinking and processing and remained at that level. There were many examples given in the postings demonstrating a higher level of thinking. As the discussions progressed deeper levels of learning became apparent. Separate postings give examples of critical reflection, when shared or read by peers there were examples of promotive interaction. Examples of promotive interaction were supportive, encouraging or peer challenged each others reasoning, offering strategies or evaluating and planning. Response from peers showed a weighing up or assimilation or accommodation of another group member's strategy or experience. For example, Eli agreed with his peer's suggestion and at the same time affirmed his own belief of creating harmony. Another example can be seen in Daniel's response to a peer's suggestion of a different approach, he took on board this new approach, during the evaluation of the approach he confirmed that it had work well, transforming his learning from one approach to another, adding to his skill set.

As stated earlier, numerous examples were provided in the postings, not only demonstrating the thinking process, but of the relationship between sharing experiences and thinking alone. The postings provided evidence of interdependent learning; the

movement between sharing experiences and thinking alone, and the progression through levels of thinking as a result.

Reflections of E-journaling: Focus Groups

As explained in chapter three; following on from the focus groups reflections of the more separate reflective journal, each group was provided with a private secure space to journal within Moodle. Instruction was provided to ensure login and navigation of the site was successful. The learners from this point on were required to journal online and each was provided with their own private group space. At the end of the e-journaling four focus groups were held with the three groups of learners and one with their tutors. The results follow.

E-Journaling: Question One

Table 5.9: Reflections on E-Journaling. Question One

	Learners response in focus group	Tutors response
Group One	<i>It was much more interesting because it was interactive. Emma [all agreed]</i>	<i>I didn't go on to have a look because I was away [on leave] for the whole time. David</i>
Group Two	<i>No, we didn't participate. Louise</i>	<i>Maybe it was because this group is mixed mode and don't see each on a regular basis they don't want to share as much. Jean</i>
	<i>I was on there for two months and nothing happened, I was like 'hello!' Rob</i>	
Group Three	<i>It was great to see each other's reflections and be able to relate to them, whether the experience related to your own or not. Daniel [all agreed]</i>	<i>I was able to observe the journals as the students were journaling, I could also see the responses from the peers as they were happening. I could see the students' journaling as it was happening rather than receive it at the end as a final piece. This meant that if someone was going off track with their learning I could intervene and make suggestions, which I didn't actually need to. I found that they were learning from each other, for example I would read a posting and go to reply but another student had responded already and given their peer helpful suggestions. Gwyneth</i>
	<i>I didn't participate but I did read others experiences. I definitely learnt from their issues.... Eli</i>	

When learners were asked “**What was the experience of learning through e-journaling?**” there was a variation between the analysis of online participation to the response in the focus groups in Table 5.9.

During the e-journaling observations it appeared that several students had not participated. In Group One, only three out of the five learners were active in the e-journals. During this phase of the focus groups it became apparent that two of the student had experienced technical difficulties. However, these students felt they had still participated and had learned from reading peers contributions; this will be reported further on in this chapter and discussed in detail in chapter six. While their tutor did not participate at all, the students gave numerous examples given of ways in which they had learned from the e-journaling process.

In contrast, content analysis of Group Three provides evidence that all learners had actively participated in the e-journal. However, in the focus group, one member felt he had not participated. This is discussed later in the chapter.

Group Two reported that they did not participate at all. During the focus group interview one learner, Rob spoke about wanting to participate and having made a contribution, however his colleagues did not respond so he gave up. At that point another participant, Gioia expressed that she would have liked to contribute but thought that no-one else was participating. It became apparent that after the focus group for the reflective learning journal two group members decided that they would not be participating, as a result the rest of the group followed suit. There was a lack of communication between the two students who wanted to participate. And while Rob did he received no response.

The tutor for Group Three gave the majority of feedback during the focus group as this tutor observed the learning continuously, and was therefore able to give a full account of the learning observed and the tutoring experience as a result. If necessary it was possible for the tutor to intervene. However, the tutor found that it was not necessary as the students were learning so well from each other. The tutor was able to monitor and observe learning experiences throughout the entire journaling process, as it was happening, not just at the end of the process as with the more traditional, solitary, reflective learning journaling.

E-Journaling: Question Two

Table 5.10 shows the responses to the second question regarding the experience of e-journaling **“did you learn from each other through the e-journaling process and if so how?”**

Table 5.10: Reflections on E-Journaling. Question Two

	Learners response in focus group	Tutors response
Group One	<i>Yes, it opened up areas I hadn't thought of before based on what others were experiencing. Emma</i>	<i>Even though I didn't get to observe in the online format I know that the sharing is the most important part of the journaling from the face-to-face sharing over the years. David</i>
Group Three	<i>Yes, definitely [all agreed]. You gain someone else's perspective. It can confirm your thoughts or not. Daniel I definitely learnt from their issues they had and that can help me prepare better for preparation. I knew the issues before hand so could integrate them with my own issues and relate them to my experience [all agreed]. Eli</i>	<i>Yes, they would reflect on their own experience and then another student would give advice or suggestions using their own experiences and the student would either take that on board or not. Gwyneth</i>

As the examples in the table indicate all of the learners and the tutors who participated agreed that through the process of e-journaling learning from each other did take place, with the exception of the one learner in Group Two who received no responses from his group. The tutor from Group One was not surprised that the learners from his group learnt so much from sharing online; he had been observing learning through sharing journals in the face-to-face class over 10 years and found it the most important aspect of the whole journaling process. In contrast, Group Three's tutor, Gwyneth, continually observed the e-journaling process of giving examples of critical reflection and students peer tutoring. Eli and his tutor from Group Three confirms the occurrence of students accommodating and assimilating information, found in the content analysis data of the e-journals.

E-Journaling: Question Three

Question three of the focus groups asked the participants to compare the two journaling processes and the learning that took place. Table 5.11 illustrates the

findings from the question **“What was the experience of learning from e-journaling compared to traditional journaling?”**

Table 5.11: Reflections on E-Journaling. Question Three

	Learners response in focus group	Tutors response
Group One	<p><i>I found the learning online a deeper experience because of the interaction which I didn't feel that I got in class to some extent. Emma</i></p> <p><i>I was apprehensive about others reading my journal and being judged. But everyone was open. It didn't make a difference whether it was writing or typing. I actually thought that I wouldn't like it [e-journaling]. Ann</i></p> <p><i>As you do more in typing format you get used to it. I found it enhanced the creative process...I found online more valuable because of the interaction. In class we found that people didn't really share. Emma</i></p>	<p><i>I'm sure it's great but I didn't go on. I prefer face-to-face. David</i></p>
Group Three	<p><i>You can always add something – I found it more reflective. You can slightly change your perception of something by reflecting on others experiences. You gain an understanding of others. You know something because you have had the experience but when you share the experience or perspective of another person it can help you gain a wider or different perspective. Daniel</i></p> <p><i>You get to experience other possibilities that you would not have if you hadn't shared the experience online, you get to see the experience. It gives you a much broader spectrum of learning. Eli</i></p>	<p><i>...from a teaching perspective it was one, easier to see the solitary process unfolding, their personal journey unfolding and two it was also easier to observe students sharing their experiences giving advise and support to each other. Gwyneth</i></p>

As the examples in Table 5.11 illustrate all learners who participated had deep learning experiences. Sharing and interacting, relating to others experiences gave them a wider perspective. This evidence confirms the finding from the content analysis; the e-journal give the learners opportunities to learn together through sharing experiences and in doing so deepens their own learning experience and as a result transforms their thinking.. While the tutor for Group One did not participate, expressing a preference for face-to-face, his learners still had a deep learning experience, even more so that when sharing their journals face-to-face. Group Three's tutor gave examples of promotive interaction present within the e-journaling discussions through students giving advice and support to each other.

Common themes

Common themes emerged between the groups that participated in e-journaling. As shown in Table 5.12 common themes emerged between the two groups from the focus group data.

Table 5.12: Common Themes amongst those who participated in E-Journaling

Themes	Group One	Group Three
Value	<i>Personally I was relaxed and I enjoyed it. Emma</i>	<i>It was great to see others reflections. Daniel</i>
Sharing	<i>More learning does take place due to people sharing. Ann</i>	<i>I definitely learned from the issues they [group] had. Eli</i>
Awareness	<i>It opened up areas that I hadn't thought of before based on what others were experiencing. Emma You have the solitary experience and then you share that and then you can think about that on your own again. Ann</i>	<i>...so I could integrate them with my issues and relate them to my experience or not. Eli</i>
Observing learning	<i>It was good to <u>see</u> the different approaches. Ann It was a different experience you could see the problem solving, helping each other with issues, making suggestions. (all agreed) Ann All our experiences were similar and it was good to see that. Ann</i>	<i>You can reflect on the whole experience because you can <u>see</u> it there in the discussions. Eli It was great to <u>see</u> each others reflections and be able to comment on them. Whether the experience related to your own or not... By sharing journaling you <u>see</u> your own process and others process, this in turn affects your own process. Daniel You can reflect on the whole experience because you can <u>see</u> it there in the discussions. You learn from their experience and their reflections. Malachi</i>
Moodle	<i>I don't feel computer literate but once I got on and got used to the programme I really enjoyed it. Emma (group agreed)</i>	<i>I found the system extremely easy to use. My background is computers and this was one of the easiest systems I have used. Daniel (Others agree).</i>
Access	<i>No or limited access so I never managed to get myself in and comment... Yes, I learnt from reading the others experience. It was great to be able to read that others were having similar experiences to me; it made me think more about what I was doing. Isabel</i>	<i>I didn't participate. But I did read other's experiences... I definitely learned from their issues. Eli</i>

All of the learners who participated agreed that they learned through the process of reading peer contributions; there was evidence not only having valued but having enjoyed the experience also. Many examples were given by both groups of ways of learning interdependently. For example, Ann gives an account of learning alone, then sharing with her peers and then thinking about what had been shared on her own.

A theme that reoccurred as much as thinking and learning was that of the participants being able to 'see' the learning process, these insights allowed learners relate peers experiences to with their own. Ann related to being able to see the problem solving, something she hadn't experience in traditional journaling or her face-to-face sharing. Through being able to observe other participants learning processes additional evidence of interdependent learning is provided.

As can be seen in Table 5.12, both groups found Moodle extremely easy to use. Even when there were problems with initial access this did not stop the learners from reading each others experiences resulting in deep learning experiences. This is discussed in more detail later in this chapter.

Differences

While there were many similarities between the groups that participated in the e-journal, two themes emerged indicating a difference of opinion, as indicated in Table 5.13.

While two students in Group One had issues with access to the e-journals, they persisted in using the system and found this form of learning enhanced their creativity. Whereas, all four learners in Group Three participated online, making frequent contributions, two students out of the four preferred traditional journaling. Although they did agree that they had learned from the process, e-journaling was not a preference, illustrated in the next section.

Table 5.13: Differences between Those who participated in the E-Journaling

Themes	Group One	Group Three
Preference	<i>As you do more of the typing format you get used to it. Process. Emma</i>	<i>This mode was easier to ignore. You have to wait for the computer to start up, connections and loading of the page. Traditional journaling is easier as you simply pick it up and start writing. Malachi</i>
Creativity	<i>I found it [e-journaling] enhanced the creative process. Emma</i>	<i>I found reflecting much more analytical online. Isha</i>

Issues with using Computers

As highlighted earlier in this section, Group Two did not participate. Several issues were raised which are identified in this section. Interestingly, while the majority of the participation in the e-journals was from Group Three, two of the learners discussed learning via a computer as not being a preference. The discussion had many similarities with that of Group Two as identified in Table 5.14.

For those who did not participate in Group Two, several issues matched those who did participate in Group Three who contributed the most in the e-journals. Issues around the health risks were discussed in both focus groups. General health around the use of computers was discussed which lead to further discussions of how unnatural computers. Learners felt that studying on the computer was in opposition to the fundamentals that the learners were studying; natural health. The participants who were concerned about health issues discussed ergonomics of computers, e.g. eye strain, sitting positions, and computer screens.

Table 5.14: Similarities amongst Participants with issues Using Computers

Themes	Group Two	Group Three
Health issues	<i>as an individual I minimize the amount of time I spend on the computer because I actually don't believe it's healthy. Louise</i>	<i>I try to spend as minimal time in front of the computer as possible; I just don't think it is healthy for you Malachi</i>
Ergonomics	<i>It's a postural thing, eyesight... There are lots of people who didn't have the types of problems that they did before. That's common knowledge. Louise</i>	<i>It's not just the ergonomics like the seating or the bending over the desk, it's reading from the screen... We are here at this college learning about health so I just don't think that we should be forced or encourage to sit for long periods in a very unnatural way Malachi</i>
EMF	<i>...it's the exposure to every thing from the computer...radiation. Louise</i>	<i>...and the electro magnetic's that are emitted from electronics. Malachi</i>
Context	<i>May some people are very, very good on the computer and they can draw lots of things, but for me it's more actually the use of pens and pencils and colour. Louise Person to person I feel it works much better like how it was taught 5000 years ago. Dal</i>	<i>We are learning about natural health and sitting in front of a computer or writing on one is not natural, I'd rather write free hand and read actual pages. I know that computers are here and are here to stay but it's like anything it needs to be in moderation, but for me that means as little as possible. Malachi</i>

Additionally, Electro-Magnetic Frequencies (EMF) emitted from computers and computer screens was a concern to these participants. These themes will be discussed in detail in the next chapter. In terms of Group Two, these issues and others discussed further on are indicators for non participation in the e-journal. While there were similarities around the issues of using computers there were also differences not only from group to group but within the groups also as shown table fifteen.

Differences

As reported earlier an indication for non-participation by members of Group Two in the e-journal could possibly have been due to privacy and also content of the journal. From a completely different perspective Group One, who had previously been given formal, sharing time within the face-to-face class found that e-journaling, was a safer environment in which to share. .

Table 5.15: Differences between Participants Using Computers

Themes	Group One	Group Two	Group Three
Safety and privacy	<i>I found it less threatening because it wasn't face-to-face there was a certain amount of anonymity; I enjoyed it more because of that aspect. Others agree. It was a safe environment to share. Isabel</i>	<i>I think there was another aspect about confidentiality like who was going to see it...I think it's quite a personal thing, a journal. Gioia</i>	<i>No comments</i>
Ease of using technology	<i>To begin with I was a bit nervous about things like access because I don't feel I'm that computer literate but once I got on and got used to the programme I really enjoyed it. Others agree. Emma No access or limited access so I never managed to 'get in' myself to make a comment, but I read the others. Isabelle Same as Isabel. Yasemin</i>	<i>Your journal you just open it and start writing, but the computer you have to log in and go into the right programme. Rob</i>	<i>Easier with traditional journaling. This mode was easier to ignore. You have to for the computer to start up, connections and loading of the page. Traditional journaling is easier as you simply pick it up [the journal] and start writing. Malachi I found the system extremely easy to use. My background is computers and this was one of the easiest systems I have used. Daniel</i>

Group Three gave no consideration to these subjects, indicating that safety and privacy were not an issue for a group who had found traditional reflective journaling a very private process. The ease of the technology utilised in this study brought up differences of opinions and experiences within both groups that use the system. Emma from Group One found that although she was not confident about her computer literacy skills she persisted and got used to the programme to a point where she enjoyed it. While her colleagues Isabel and Yasemin had technical issues, both persisted to the point where they were able to read others contributions (discussed in the next section). Rob from Group Two and Malachi from Group Three expressed a preference towards the traditional reflective journal. Both made the comparison of being able to simply pick up a traditional journal and start writing without having to wait for the computer to start up and login to the programme. In contrast, Daniel (Group Three) stated that with his experience in computer technology Moodle was one of the easiest programmes he had used.

Unseen Learners

Throughout the e-journaling observations it became evident that Group Two and two participants from Group One, had not made contributions to the online discussions. However, during the focus group interview for Group One, two out of the five students, Isabelle and Yasemin, had experienced personal computer technical difficulties; however, they persisted and gained enough access to be able to read their groups postings. Group Three's online observations and analysis showed four out of the four students participated in the e-journal as shown in table eight. During Group Three's focus group Eli felt he had not contributed at all. On further analysis he had made the least contributions, which were minimal, but his contributions were still valid. In comparing the number of contributions he had made to his peers, Eli felt that he had not participated. During the focus groups all of the three students still felt engaged in learning reading their peers contributions so they were invited back for a separate focus group as reported in Table 5.16.

On questioning the three learners for non-participation, the researcher learned that the Isabel and Yasemin had experienced computer difficulties at home, while Eli had been very busy, hence minimal postings. Even though they could not "get in" to make postings they still felt engaged in learning through reading their peers journal experiences and discussions with peers in the e-journals. Eli gives evidence of integrating others ideas and relating his peers issues to his own experience. Yasemin also discussed relating others experiences to hers which made her think and reflect more on about herself. There are several examples to support the premise that these unseen learners were still engaged in the learning process, the difference being they were unseen.

Table 5.16: Unseen Learners

	Responses
Reasons for non participation	<i>I didn't participate due to busy time. Eli</i>
	<i>No access or limited access so I never managed to 'get in' myself to make a comment, but I read the others. I still wrote a journal though. Isabel</i>
	<i>Same as Marsha technical problems because of home renovations, but when I got on and read what the others were doing it made me want to respond and give feedback. Yasemin</i>
Learning through reading others experiences	<i>I didn't participate but I did read others experiences. I definitely learnt from their issues they had and that can help me prepare better for preparation. I knew the issues before hand so could integrate them with my own issues and relate them to my experience. Eli</i>
	<i>Yes, I learnt from reading the others experience. It was great to be able to read that others were having similar experiences to me, it made me think more about what I was doing. Isabel</i>
	<i>Yasemin agreed with Isabel</i>
How did they learn?	<i>I related to their experience and could understand where they were coming from in terms of their achievements that are working towards goals with their health. Their goals may not have been the same as mine because we all have our own different goals when it comes to our own health, everybody's body is different with different health issues but we are all working towards improved health. Isabel</i>
	<i>Eli agreed</i>
	<i>Yes, it was great to read what others were doing I agree with Isabelle that my goals were not the same, but I could related to the issues. In some cases I wanted to give my experience as they could have taken the same approach. Yasemin</i>
Engaged in learning If so How?	<i>Yes definitely. Isabel (all agreed)</i>
	<i>I found I related to it as I was reading it online. I didn't feel like I actually needed to participate because I was learning anyway just from reading. We were all writing about our self and our own experiences. I put more into self through writing more than face-to-face. Isabel</i>
	<i>I usually sit back and wait to participate anyway, whatever the situation I like to hear everyone else first then I will make a comment. Yasemin</i>
	<i>Yes, it opened up areas I hadn't thought of before based on what others were experiencing. Eli</i>
Additional comments	<i>Yes... I learnt from reading the others experience. It was great to be able to read that others were having similar experiences to me; it made me think more about what I was doing. In the end I didn't feel like I needed to make comments because I was learning so much from reading others experiences. Eli</i>
	<i>I found that each person put more into it online than face-to-face. Some times face-to-face hinders something you need to voice but here people were just writing about self. I found it less intimidating, safer. Isabel (Others agree)</i>

Through reading others experiences, problems, critical reflections and dialogue with peers these unseen learners were still engaged in critical reflection, assimilating and accommodating information, whereby they were reflecting on and relating their peers experiences to their own. This was normal behaviour as, Yasemin explained that in any situation she sits back and processes information before making her points known. Isabel spoke of feeling less vulnerable in the e-journal. The unseen learners agreed that through reading, relating and critically reflecting while reading their peers contributions they has deep learning experiences.

As the examples taken from the results of the analysis for the focus group indicate deep learning experiences were taking place. All participants were more aware of learning as it was happening, with the ability of being able to view insights as they were occurring. While technology has its advantages for providing new learning experiences it still is not a preference for all learners, something that course creators need to consider when deciding to offer a course online

Additionally, there needs to be consideration for the content and the context of the course. Learners who did not participate, and two from Group Three that did, felt that online learning was not conducive to learning natural content and practices in an “unnatural” way. However, those who did participate felt they had deep learning experiences as a result not only of; sharing learning journals, also a key theme that emerged, being able to “see” learning as it was occurring. This experience was also true for those unseen learners discussed in the next chapter.

Summary

All of the learners had an understanding of the purpose of the traditional reflective learning journal and were very aware of the reflective learning process and its benefits. Moreover, there was an expression of enjoying the learning process from the majority of participants. However, because of the content and the context of the journals for two of the groups the reflective learning journal was a very solitary process. Whereas, Group One, who were given formal sharing time at the end of class, expressed how they had gained from the shared learning experience.

As stated earlier, numerous examples were provided in the e-journals. Not only did they demonstrate the thinking process, but also the relationship between sharing experiences and thinking alone. The postings provided evidence of promotive interaction, the movement between sharing experiences and thinking alone, and the progression through levels of thinking as a result.

As the results of the online analysis show, only two groups of the three groups of learners participated in e-journaling. The focus group findings illustrate why Group Two did not participate and where it appeared the learner's from Groups One and Three did not appear to be participating felt they had still learnt from the process. Those who participated in the e-journaling provided further evidence in the focus groups of interdependent learning, fostering transformative learning. These conclusions will be discussed in relation to the literature in the next chapter

Chapter Six:

Discussions

Chapter Six: Discussions

Introduction

The aim of this research was to investigate e-journaling as a strategy to develop interdependent learning. It must be remembered that in discussing interdependent learning there are several elements, this study focused on promotive interaction within cooperative based learning groups, with a particular interest in the movement between sharing together and learning alone. In order to investigate this phenomenon a traditionally solitary activity, the reflective journal was created in a social environment, where peers were easily able to read and discuss each others experiences. Experiences of learning were described from the participant's perspective. Effectiveness of the journaling process is the extent to which interdependent learning was occurring, the type of learning that occurs as a result of the movement between thinking and processing information alone and together.

In order to determine if e-journaling was effective as a teaching and learning strategy in developing interdependent learning the findings of this study will now be discussed in relation to three criteria which form the main framework of this study.

Research Questions:

1. How effective was the reflective learning journal at developing interdependent learning?
2. How effective was the e-journal at developing interdependent learning; what type of learning takes place?
3. How do the two forms of journaling compare in developing interdependent learning.

The development of independent learning skills is as equally important as developing collaborative learning skills, not just for success within the tertiary learning environments but beyond into the workplace. The literature provides evidence that both skills are being developed through computer mediated communication, within courses activities such as discussion forums. This is an important in relation to the gap in the literature between developing independent, autonomous practitioners who can collaborative with peers in problem solving situations.

While both skills can be developed in face-to-face interactions, the tutor is not always aware of discussions or the thinking process of each learner within the face-to-face class. Where as, each thread of thinking is visible in the online learning environment (Papanikolaou & Boubouka, 2010). In the e-journal solitary thinking and learning processes can be observed and assessed along with thinking process in relationship to peers (Herrington & Oliver, 2002). The dialectic between thinking alone and thinking together does not just show the thinking processes but the depth of reflection and transformation of frames of reference as a result. This research shows that when questioned all who participated were aware of and could see thinking and learning occurring during the e-journaling process. This is an important finding in relation to the development of higher order thinking and metacognitive skills (Mezirow, 2009; Moon, 2006) reinforcing the need to develop promotive interaction at some point in a session. In evaluating and assessing together the learner does not become too self absorbed in the thinking process and become blind-sided by their subconscious beliefs or the limitations of previous experiences from which they have drawn (Bleakley, 1999; Osterman & Kottkamp, 1993).

What is revealing is that e-learning does not suit all learners, depending on the context and content of the journal. This finding is significant in terms of developing e-learning courses. This is the age of technology, that cannot be disputed, however, care and consideration must be taken during the decision making process around the purpose of and during the development and design of online programmes.

This research provides evidence that even those learners who did not visibly participate online were still learning through reading, observation and reflecting on peers' experiences and interactions, still participating in the learning process. These findings dispute claims that unseen learners are lurking and that they are still in fact involved in learning.

Question 1: How effective was the Reflective Learning Journal in Developing Interdependent Learning

The Reflective Learning Journal

The reflective learning process utilised by the three groups of students was in the same context as Boud and Walker (1998) describe as a tool to reflect on practice and in Brookfield's (1995) context of moving between theory and practice. Each group's process was to perform a practice, reflect on that practice and journal privately in learning journals to submit for formative assessment as Miller (1998) recommends. As a formative assessment the journal entries were not being graded for assessment purposes as Brookfield (1995) strongly recommends. While Ruberg, Moore and Taylor (1996) recommend grading to encourage participation and compliance, evidence of course completion was enough to encourage all of the learners to actively complete their reflective learning journals.

In relation to professional practice Moon (2004) asserts that reflection plays a vital role in student work experience and employability. Reflection in higher learning could therefore teach adult learners essential skills of self-performance assessment necessary for the workplace. Boud (1997) asserts that the ability to self-assess is a core educational skill which is necessary for lifelong learning, and which it is desirable to develop as part of higher education. In doing so learners are developing independence and autonomy (Boud, 1995a). Journal writing in the case was being utilised as an experiential reflective learning tool, to allow the learners to experience the changes to their general health as a

result of changes to nutrition and lifestyle that they will eventually be recommending in clinical practice.

Interdependent Learning

As discussed in detail the Chapter Two, cooperative based groups are long term with a stable membership that give each other help and support, encouragement and assistance to make academic progress developing cognitively and socially. The three focus groups essentially formed cooperative based groups. However, for this study the common goal was to foster deep learning, metacognition and transformation. There was no reward for a goal achieved as Johnson and Johnson (2003) recommend.

As Johnson and Johnson (1987) define peer discourse as promotive interaction, is one aspect of positive interdependence. Promotive interaction occurs when individuals encourage and facilitate each others learning to reach the groups goals and promote each other's success by: giving and receiving help and assistance, exchanging resources and information, peer teaching, listening critically, challenging each other's reasoning, giving and receiving of feedback, and encouraging others to achieve (Johnson and Johnson, 1987). The discussions within the focus groups around interdependent learning indicate that while the term is still used in education the majority of students and tutors did not know the correct meaning of the term. Johnson and Johnson (2003) state that studies into interdependency were so thorough that the theory has never been questioned or altered. However, over time the original definitions have become somewhat diluted now and terms have been modified. For example, Johnson and Johnson's term, individualistic learning, is now more commonly known as independent learning (Boud, 1988), autonomous learning (Boud, 1988), self regulated learning (Kramarski & Gutman, 2006), while Belenky, et al., (1986) developed the theory of the separate knower. Cooperative is now more commonly known as; collaborative learning (Biggs, 2006; Boud, 1995a; Bray, et al., 2000; Papanikolaou & Boubouka, 2010) and the connected knower (Belenky, et al., 1986). However, from Johnson and Johnson's (2003) perspective collaboration is only one aspect of cooperative learning. The following chapter will identify and examine

the findings in relation to the literature in establishing the effectiveness of solitary and cooperative interactions within the e-journals.

In my original search for a definition of interdependent learning I found myself defining the term as the *movement between* learning together and learning alone, based in the semantics of ‘inter’, dictionary meaning of ‘between’ (Barnhart, 1996). Further examination lead to the meaning of ‘inter’ and ‘intra’. Both are derived from the Latin language, however, both have opposite meanings. Intra indicates that there is interaction *within* a group. For example, the term intramural sport refers to those games that are played between groups of students from the same school. Whereas, inter indicates that there is interaction *between* two separate groups. For example, interscholastic sports refer to those games played with other schools competing against each other. Johnson and Johnson describe positive interdependence within group work and the interaction within the group hence, intra-dependent learning, however the term does not exist. Interdependent means ‘dependent on’, which is how Johnson and Johnson (1987) define interdependent learning:

“There are two types of social interdependence: cooperative and competitive. The absence of social interdependence and dependence results in individualistic efforts” (pg. 5).

On further examination of Johnson and Johnsons (1987, 2003) studies when defining interdependent learning consistently revert back to theories of social interdependence, the individual within the society or the group. In a learning situation, this could be the learner within the learning organisation, or the learner within the class; however Johnson and Johnson consistently place the learner within group work, from my perspective this is a micro view of interdependent learning. Johnson and Johnson (2003) do look at a macro view of interdependence in the learning environment which is defined as the student interacting with the teacher, not each other.

In relation to the discussions in the focus groups one participant defined interdependent learning as I had; learning together and learning alone, interestingly the students' original profession was in computers and had been for many years. One other participant, the tutor for Group One had also taken the view of my further investigation by looking at the meaning of the Latin term of 'inter' meaning between. Other participants defined interdependent learning as Johnson and Johnson do:

...is interdependent learning...means to me that you are dependent on other people, so you can't do it on your own. Emma

Other participants simply defined it as learning together, which again relates to Johnson and Johnson's (2003) cooperative learning.

While the purpose of this study was not a meta-review as in depth examination of existing interdependent theories, there still may be a need in another study to examine these theories in relation to the evolution of communication via the internet. For example, is there now prevalence of interdependent communication via social networking sites such as, Facebook, Bebo, and MySpace? While this question is outside the boundaries of this study in examining previous theories, in relation to e-journaling, these questions and more have been raised for me as the investigator. Therefore, do Johnson and Johnson's theories need a completely new perspective and re-examination in relation to learning online.

The Solitary Reflective Experience

The reflective learning journal, while a solitary practice, two of the groups did develop metacognition (Moon, 2006). All learners were not just aware of the purpose of reflective journal writing they were also aware of the learning process; making changes, recording those changes, journaling the response as a result changes, reflecting and evaluating whether the changes have had an effect and if so, how, compared to before the

changes were made. This is an example of complete immersion in the reflective experiential learning process (Moon, 2004).

Moon (2006) describes specific formats that can be aligned with the performance criteria of the overall assessment to give a deeper richer response rather than a descriptive recall of events. Very structured criteria will not produce the richness of the deep critical reflection, merely a descriptive list of events (Hatton & Smith, 1995). Initial examination of the course packs for the requirements of the reflective journals showed that the journals were semi-structured, giving some structure in relation to performance criteria, while allowing the students to explore changes through reflection and evaluation.

For groups two and three the experience was a very independent, separate process. The students felt they had not learned from each others experiences. Discussions around why they had not learned from each other emerged from relating the contents of the journal to privacy, trust and only sharing with the tutor was they were the expert. Moon (2004) and Mayher, et al., (1983) stress the need to create safety and trust when establishing journaling as an activity. It was obvious in the responses from all three groups that trust had been established between students and their tutors and that the environment was encouraging and supportive. While the learners in Group Two were adamant that they had not learnt from each other their tutor observed sharing of experiences, informally discussing their journals in and around class time. Langan, Sheese and Davidson (2009) placing an emphasis on collaboration, deep learning, reflection, engagement with caring, positive interdependence, as the essential ingredient, gives learners feelings of support and belonging. This positive environment encouraged Group Two to shared informally. However, for Group Three the process was very solitary and private. The tutors openly discussed having not encouraged promotive interaction as they felt the learners were not ready to share. However, this group of learners was at the same stage as the other learners in their courses. Therefore, the tutor is essential in developing a sharing environment.

In contrast, for Group One traditional reflective journaling was still a solitary process, however, this group was given a formal space at the end of each face-to-face class in which to share experiences from their journals. The tutor was very aware of deep learning processes as a result of sharing. On further questioning the sharing time was an unstructured one; the learners being given 20 minutes to discuss their experiences from their journals where there were no specific requirements to be discussed. There were many examples given by the group about their experiences of learning by sharing their journals. Interestingly, Group One who shared face-to-face in class did not express any issues around privacy and trust understanding that sharing was part of the learning process. There was evidence given to support peer tutoring as a result of the sharing process.

Moon (2006) describes dialogue journals in the sense of sharing via email, finding that the majority of use was in the area of teaching practice or in schools between teachers and students, rather than student to student sharing. However, David the tutor for Group One, had observed over many years of utilising face-to-face promotive interaction between learners, valuable deep learning experiences.

I find in class that the session when they actually do sit down and talk to each other, they have 15 minutes at the end of each class to do that and I just find it invaluable, in fact I find it the most valuable part of each class, the time that they share together, yes, definitely, because they are sharing ideas and experiences. From the interchange students take away ideas to put into their own lives. They learn communication skills around problems and solutions. There is definitely critical thinking taking place as a part of the process. David.

Von Wright (1992) encourages the organisation of learners into groups as it enables an attentive awareness to reflection. This view is supported by theorists who see reflections as a social process (Kemmis, 1985), collaboration enables the reflective process to become apparent. This was reinforced by the learners in Group One, who gave several examples of awareness to reflection.

Group One not only had deep learning experiences through sharing they were also aware of their own learning and that of their peers. The group acknowledge the relevance of journaling as a tool in practice even though they are only in their first year of a three year qualification. The whole group agreed on the worth and relevance of reflective learning, and that through discussions during the sharing of experiences learning was reinforced. Group One formed a cooperative based group who communicated through promotive interaction, with no other goal than that of sharing experiences and learning from each other. While unaware of their sharing, Group Two were engaging in promotive interaction according to the observations of their tutor. Whereas Group Three and the tutors had not experience any interactions around journaling, even though Groups Two and Three discussed deep learning as a result of the reflective journaling process.

Learning from the Reflective Journal

Participants from all three groups gave examples of critical reflection, being active and present to changes occurring, aware during the reflective process rather than passive. Taylor (2009) points out that developing an awareness of the context is an essential element in fostering transformative learning.

Awareness... being present to all those different distinctions, and actually being active with them rather than passive in making changes. You can also see the areas you are working with and the areas you are not working with. It gives you some direction actually. I found it fantastic. Emma

A common finding across all groups through the traditional journaling process was the enjoyment aspect. Participants went on to relate this to the type of learning in terms of reflection from Dewey's (1933) perspective, the students were interacting with their own experiences, developing an awareness to assumptions and beliefs. There were a number of examples given by the participants of how aware of the changes they were making and reflection on those changes having an impact on their learning. This affirmed the right pedagogy for the content and context of learning. Additionally, metacognition was

evident; an awareness of how learning was happening was very evident through the discussions.

As the finding from the analysis shows, for these participants the reflective journal was a very successful tool in developing critical reflection and awareness to of the individual's perspectives. However, for the majority of the participants learning was a very solitary and individualistic learning experience. The tutor is the key to developing a positive interdependent learning environment. When the tutor encourages promotive interaction an abundance of deep learning experiences occurs. When the tutor does not encourage or foster a positive interactive learning environment, opportunities of quality peer to peer teaching and learning can be missed.

Question Two: How effective was the e-journal at developing interdependent learning; what type of learning takes place?

As established in chapter two the e-journal, otherwise known as an interactive online diary (Cohen et al., 2006), refers to a reflective learning journal (Moon, 2006) within a virtual learning environment. The virtual learning environment is created via the use of a course management system (CMS), in this case Moodle, and the internet, now more commonly known as an e-learning environment (Kwok-Wing, 2001a; M. D Roblyer, 2003). Moodle provides students with flexible learning spaces, giving learners anytime access to their course notes and tutors increasing the level of access and support. Moodle was chosen for its rating system; separate, connected and separate and connected scale. Moodle was also chosen for its dynamic aspect of being able to add several different activities such as a journal. The journal activity has the functionality of no groups for individual journal writing, separate groups and visible groups. The e-journal was given the separate group mode where by the research participants were able to see each others journal writing but the rest of their class were not (see Appendix 8).

Content Analysis

As established in the literature review and earlier in this chapter the term interdependent learning has been defined in several ways. Johnson and Johnson (D. W Johnson & Johnson, 1987) define interdependent learning as positive cooperative learning, whereby learners are dependent on each other (Barnhart, 1996), Kirschner (2006) defines interdependent learning simply as interaction, while Leach (Leach, 2003) defines interdependent learning as learning together and learning alone. From Johnson and Johnson's (1987) perspective there are three types of cooperative learning groups, formal, informal and cooperative based groups. The three groups formed cooperative based whereby each focus group had a stable membership that gave each member help and support, encouragement and assistance to make academic progress developing cognitively and socially. This was achieved through one aspect specifically of positive interdependent learning, peer discourse or promotive interaction.

Usually promotive interaction occurs when the individuals encourage and facilitate each others learning to reach the groups combined goals. Learners promote each other's success by: giving and receiving help and assistance, exchanging resources and information, peer teaching, listening critically, challenging each others reasoning, giving and receiving of feedback, and encouraging others to achieve (Johnson and Johnson, 1987). In this case study, within each focus group the learners were not working towards a common goal or reward, they were simply encouraging each other to achieve. The online analysis demonstrates examples of supporting and encouraging feedback from Group One:

Hi there, I really enjoyed reading your entry, thanks I was interested in your comments about going back to eating meat after being a vegetarian for so long. I'm not a meat eater either and have no desire to return to eating it. But as a chef and food consultant I do enjoy cooking it and writing about it so if you need some ideas about how to cook it to make it more appealing or the types of meat or poultry that will give your best source of iron, I'd be happy to have a conversation about it. Emma

The two groups that participated posted many examples of promotive interaction, with elements of empathy, supportive guidance and problem solving suggestions, as Johnson and Johnson (1998) as some of the elements. The participants confirmed these findings in the focus groups.

Moodle.Org (2007) asserts for effective group work all participants need elements of both separate and connected knowing. In a discussion forum a single posting may exhibit either of these characteristics or both together, individuals can be anywhere on the continuum. The analysis of the e-journals presented evidence of all three. Initially e-journal writing presented independent, solitary reflections.

While initial e-journal writing was quite independent the self reflections demonstrated critical reflection, self awareness and a strategy as a result of the reflection is evident, therefore deep learning processes was occurring (Taylor, 2009). The e-journals progressed to separate and connected knowing (Belenky, et al., 1986), through promotive interaction. Separate and connected knowing demonstrated, in Henri's (1992) modified analysis model elements of metacognition, such as evaluation and planning. From a promotive interaction Johnson and Johnson's (2003) perspective, Malachi suggested strategies, organising information and engaging in higher level processing. As discussions continued learners moved to and fro between; solitary, separate contributions and connected discussions and reflection remaining critical.

The Critical Dialectic

It is necessary in this section to include discussions from the findings to demonstrate the critical dialectic in relation to Kolb's cycle. There were many examples of this dialectic within the discussions. Discussion displayed evidence of critical reflection and critical thinking; evaluating, debating, critical reasoning, forming a critical dialectic. A critical dialectic: the dialectic being the movement to and fro between solitary independent learning into cooperative learning and back into independent learning again; or vice versa from cooperative learning into solitary learning and then back into cooperative learning.

For example: Eli made a solitary posting, critically reflecting on what went well and what did not go so well, Daniel responded with a strategy to Eli. To which Eli could assimilate, accommodate or reject the suggestion with his own thinking.

I agree with the point that it depends what you are teaching and also on the students' capabilities, but creating harmony between teacher and students is one of the most important factors in my opinion ...

Eli, in this case, is assured of his own opinion in response to a peer. In relation Kolb's (1984) experiential learning cycle: Eli had the concrete experience, using reflective observation he reviewed the experience, during abstract conceptualisation whereby the experience is compared with others and conclusions drawn, there was discussion and dialogue with a peer which in this case has confirmed Eli's own thoughts, his new objectives were set and the cycle continued. Had the critical dialectic not occurred in the third stage Eli may not have been so sure that his opinion was the right one. The critical dialectic at this case affirmed Eli's thinking – you know what you already know.

There were other similar examples of students engaging in a critical dialectic at the stage of abstract conceptualisation (Kolb, 1984), and affirmation (Bleakley, 1999) rather than transformation took place, whereby the learner's perspective, frame of reference was changed (Mezirow, 2009). For example, In this phase of postings Daniel's reflected on the concrete experience (Kolb, 1984), through critical reflection (Mezirow, 1990a) he was able to evaluate his performance:

What did not go well was, not enough time and I did not summarise the session.

As Daniel moved into abstract conceptualisation, where he compares the experience to his previous experiences, Malachi responds to Daniel, engaging in promotive interaction by suggesting a strategy:

What about getting them to inform of a few areas that they would like to discuss before the session? Maybe before the session have them email what they would like to get out of it to prepare both sides.

Daniel tests the new strategy with positive results.

Basically she noted good listening skills, confirmation by nodding head, well asked questions, constructive points to reflect on and allowed conversation to flow naturally. I felt the feedback confirmed that the approach I had taken was the right on in this case, thanks.

During abstract conceptualisation Daniel has another experience to draw from. In evaluating the strategy suggested by Malachi and his own previous experiences, Daniel accommodated the new experience, transforming his frame of reference for the future similar experiences. Had the critical dialectic not occurred in the third stage, Daniel may not have had a new strategy to test. In trying out the new strategy his approach changed, Daniel and his client benefited from the new strategy.

These examples illustrate that there are several theories in action here. Firstly Kolb's (1984) experiential wheel is set in motion through the students having the concrete experience. Critical reflection (Dewey, 1933; Mezirow, 1990a) is evident during Kolb's second stage, as Taylor (2009) asserts reflection is deepened through the interdependent (dependent on) relationship between experience and critical reflection. In the third stage of Kolb's cycle, abstract conceptualisation, where the learner compares and contrasts this new experience with their past experiences an intervention from a peer can deepen the learning process further. Through promotive interaction (D W Johnson & Johnson, 2003) peers can be seen to either offer support or suggesting strategies, here is where the critical dialectic occurs. During peer discourse the learner was observed as being engaged in critical thinking, reasoning skills were occurring, debating as to whether this suggestion fits with their experience or not as Piaget's (M D Roblyer, 2003b) theories found the learner either assimilates, accommodates the new information. Also observed in Eli's case the new information was rejected and his own opinion was affirmed (Bleakley, 1999). Within the critical dialectic potentially a peer can offer information that can have

the effect of opening a blind spot (Luft & Ingham, 1955) for the learner having the experience, bringing an awareness to conscious and unconscious dimensions that influence our decisions and actions (Singer, 1994) and relating to a deeper psychological perspective of transformative learning (Boyd & Myers, 1988). Demonstrated here is the depth and layers of learning that can be embedded and cultivated through one individual learning experience and that to one discussion with a peer. Moreover, this provides evidence of students totally immersed within the learning processes.

While there has been a significant focus on experience and reflection, in terms of fostering transformation essential to the independent learner, this finding highlights the need to examine the areas of abstract conceptualisation, where assimilation, accommodation or rejection can occur. Furthermore, within this process a critical dialectic with peers needs to occur in order to prevent the learner through continually looking inwards becoming self absorbed (Bleakley, 1999). As Cranton (2006) found the connected knower is more likely to relate to others transformative learning experiences, ensuring the learner develops a critical perspective of their own learning, fostering metacognition. In response to Bleakley's (1999) criticisms of critical reflection, some times, in order to learn from an experience affirmation for the unsure learners, is a key element. As Herrington and Oliver (2002) found communication technology can be successfully utilised to facilitated socially-mediated reflection. Furthermore, Papanikolaou & Boubouka (2010) found that learner's were able to work both individually and collaboratively to promote cognitive and metacognitive knowledge.

All of the learners and the tutors who participated agreed that through the process of e-journaling deep learning from each other occurred, with the exception of the one learner in Group Two who received no responses from his group, which will be discussed later in this chapter. This relates to Wee Sing Sim and Foon Hew's (2010) findings where over fifty percent of the learners felt that the blogs has increased their intellectual exchange between students.

The tutor from Group One who was on leave was not surprised that the learners from his group learnt so much from sharing online; he had been observing sharing journals in the face-to-face class over 10 years and found it the most important aspect of the whole journaling process. While this groups tutor did not participate this did not have a negative effect on his learners, even though they were all new to the e-learning environment their learning was not impacted. The literature argues that the main advantage of the e-journal is the ability of the tutor to remain in contact a, monitor and give feedback and to support the learners (Bassano, 1986; Chickering & Gamson, 1991; Phipps, 2005). However, in this case the tutor did not even attempt to login, while the learners were completely unaffected and still felt they had deep learning experiences. In contrast, Group Three's tutor constantly observed the process of peer tutoring and critical reflection and while active in other forums, did not make any comments in the e-journals.

I could see the student's journey unfolding, as it was happening rather than receive it at the end as a final piece. This meant that if someone was going off track with their learning I could intervene and make suggestions, which I didn't actually need to. I found that they were learning from each other, for example I would read a posting and go to reply but a student had responded already and given their peer helpful suggestions. Gwyneth.

All of the learners and the tutors who participated agreed that through the process of e-journaling learning from each other did take place, with the exception of the one learner in Group Two who received no responses from his group. In the focus groups Eli and his tutor confirmed the critical dialectic observed in the data from the content analysis. There were many examples given by both groups and ways of learning interdependently. For example Ann gives an account of learning alone, then sharing with her peers and then thinking about what had been shared on her own, also evidence of a critical dialectic.

All learners who participated in the e-journals and their tutors discussed deep learning experiences that had occurred independently and together. All learners agreed that learning together enabled deeper learning experiences. Interestingly as opposed to the literature this happened with no input from the tutors or without and assessment weighting or group goals. Another major finding from the discussions was the value of

being able to see learning taking place. Learners discussed how this deepened their learning experience. There was also an awareness of the critical dialectic, discussed earlier in this chapter, and the thinking that occurs as a result of promotive interaction.

Question Three: How do the Two Forms of Journaling Compare in Developing Interdependent Learning?

A limitation of the study is lack of analysis of the reflective learning journals the students were originally utilizing in order that the researcher compares the journals. However, this was a decision made prior to the data gathering phase due to issues presented in the literature. As Moon (2006) and Phipps (2005) point out it takes time to evaluate reflective learning journals. Additionally other issues had an impact on this decision such as trust (Moon, 2006). All learners discussed trust in terms of who would see their journals and sharing with the tutor only as the expert. Issues such as the learner not being able to journal while analysis for the study was occurring (Chickering & Gamson, 1991; Phipps, 2005). As Cohen, et al., (2006) point out there is the organisation of large amounts of data that need to be arranged into themes for analysis. Interestingly all of these were the advantages of the e-journal from a researcher perspective. Had the reflective learning journals been analysed Group One's sharing time would have required analysis in the study. Therefore, in the focus groups the comparison question was posed to the participants and their conclusions in comparing the two types of journals are presented in this section. As Group Two did not participate in the e-journal their contributions as why they didn't conclude this section.

Issues raised in the literature around reading and handwriting; the tutor in reading and making sense of the journal and the student in reading comments and feedback, the advantages to handling less paper work, and not having to carry around heavy journals were not raised or discussed by either the learners or their tutors. Also the monitoring, regularity of postings, recording of submissions, grouping of submissions into themes or

discussions and the ability to print if necessary as posed as real advantages to the tutor or diary evaluator as Cohen et al., (2006) found when collecting and evaluating large amounts of qualitative data are all an advantage of using the e-journal. While these issues were not raised or discussed by the participants they proved as real advantages from the researcher's perspective.

The most important feature of the e-journal would be the ability for the tutor to remain connected to the learner throughout the process. The tutor can guide or mentor the learner, prompting if necessary as Panko (2004) defines the e-moderators role. In this case study only one tutor of the two groups that participated constantly monitored the students. The tutor did not need to intervene as learners were communicating and sharing so well.

The Traditional Reflective Journal versus the E-journal in Developing Interdependent Learning

Kieler, Siegel, and McGuire (1987) found that there were many negative outcomes as a result of using computer mediated communication, for example, depersonalisation and impoliteness. This is due to the loss of personal social and behavioural cues used when people engage in face-to-face communication. However, the findings in this case study are in line with Kieler, et al.,'s (1987) more positive findings such as the filtering of the social cues altering patterns of dominance. Group dynamics changed whereby the group members participated more equally without a high dominance of interaction encountered with face-to-face group dynamics. Group One was unique as they had experienced sharing face-to-face and online. When Group One compared online sharing to the face-to-face sharing they found sharing online more inclusive of group members. One group member describes sharing online as less threatening "a safer space", Isabel.

People get excluded because their group disappear, so they are excluded from sharing, they have been into our group because their group have gone home, so it becomes quite disjointed.

Another issue discussed in comparing the two methods of journaling was compliance or completion. While absenteeism is a problem in any classroom, in the face-to-face class

students only get one chance to participate, if they are absent an opportunity to learn has been missed. However, in the e-journal attendance is much more flexible. Tutors can set a time frame in which the learners need to participate. Online, each phase of discussions lasted a week, as compared to the 20 minutes at a set time. At the beginning of the set week students would login and write their self-reflective journals, for the remainder of the week students were responding to each other. Compliance or completion of a learning journal can be an issue for several reasons, for example, issues around grading and assessment which are discussed later in this section. As Phipps (2005) and Moon (2004) point out monitoring of the reflective learning journal is difficult as the tutor may not see the journal for several weeks, even months depending on the length of time the activity is required. This aspect is an advantage of the e-journal, continued monitoring of the process. The asynchronous element of e-learning gave the students time to reflect on each others experiences and comment. With the e-journal they didn't 'miss the boat' so to speak, as they had not logged in that day.

The solitary self-reflective learning journal does not develop the element of promotive interaction in interdependent learning without several factors. Mayher, Lester and Pradl (1983) make a important point that successful journal writing will only happen in an atmosphere of trust. The environment needs to be supportive and learners need assurances as to who will view or assess the journal. Trust between staff and students needs to be established in relation to unexpected emotions or the surfacing of underlying issues. As the results from the focus groups indicate, if the climate is not trusting, supportive and encouraging of sharing, and information is considered too private to share, then sharing will not occur, as Group Three demonstrated.

*No, it really wasn't the type of information you would share. Malachi
I think one of the reasons why [they don't share] is because the information is
very private and they are not ready to share the information. Ryan, Group
Three's original tutor.*

Cooper (1991) reports on students who leave courses as a result of their exploration of feelings through journaling. Along with trust comes the issue of privacy and

confidentiality and as Moon (2006) explains the more trust the learner has with the staff member the more likely they are to feel comfortable with revealing more through the journaling process. The tutor needs to foster a sharing environment, as Moon (2004), Phipps (2005) and particularly, Johnson and Johnson (2003) suggests setting the climate for positive interdependence. For reasons other than the journal content being too private, both of the original tutors for this group did not think the learners were ready to share. Therefore an individualistic learning environment was created, where the accomplishment of goals is structured as unrelated to the goals of others (Johnson and Johnson, 2003). During the evaluation of the course packs the journal requirements were very similar to that of Group One.

In contrast Group One was encouraged to share and was specifically given space within each class in which to do so. The tutor's attitude set a climate of positive interdependence where promotive interaction was created as a part a fundamental element of journaling process. Here is an example of the tutor's attitude and how it reflected in his learners.

Absolutely ... I have found that it is the best part of learning experience that they have. David, Tutor

It was much more interesting because it was interactive. Emma

...not everyone knows as much as you do, so you might say: well I'm struggling with this and the offer suggestions and visa versa that's quite good.

Ann

Through establishing a positive interdependent environment, all learners' in Group One could give numerous examples of promotive interaction developing deeper learning, even those learners that were unseen. Langan, Sheese and Davidson (2009) assert that transformations are most likely to occur when the learner engages not only with the materials but other learners as well. Placing an emphasis on collaboration, deep learning, reflection, engagement with caring, positive interdependence, as the essential ingredient, gives learners feelings of support and belonging. This view is supported by theorists who see reflections as a social process (Kemmis, 1985), that collaboration enables the reflective process to become apparent (von Wright, 1992) and that communication

technology can be used to facilitate socially-mediated reflection (Herrington & Oliver, 2002). Herrington and Oliver (2002) describe reflection as both an individually mediated and a socially mediated process.

The journal whether online or not is an asynchronous activity; learners can take their journals with them and complete them in anytime. However, Group Two, who did not participate in the e-journal felt that time, was of the essence, when journaling:

It has to happen straight away it has to be fresh, 'cause otherwise I don't really trust it. I trust it because it was right there and then, because it wasn't affected by time. When we delay our reflection it can change. My perception is that it can change. Gioia

While Gioia argues a good point regarding time and correct recall of events, Cohen, et al, (2006) utilise e-journals for exactly that reason, finding the e-journal allows for the collecting of data at more frequent intervals, real time entries give accurate accounts rather than relying on retrospective recall. However, two learners, from group three who participated in the e-journal the most argued for the journal as quicker and easier to use, as Zagorsky (1997) found, some students find exploratory writing much easier by hand, particularly for new computer users or those who lack computer skills, in which case the exploratory process becomes difficult, as a result students would have more self confidence in traditional learning environments (Warschauer, 1996). However, all of these learners were computer literate, they had several days to become familiar with the system but as Daniel (our computer expert) stated, Moodle was the easiest system he had used.

So while the reflective learning journal and the e-journal are both asynchronous and both can allow for real time entries, if a climate of sharing is fostered by the tutor and a part of the learning process, then the e-journal allows for flexible participation.

While Group One were unique in terms of their experience of face-to-face sharing and sharing online, Group Three were unique from the perspective of having had a very

solitary and private experience and that of the group with most participation in the e-journal, where they shared the most. Eli compared the e-journal to the traditional journal in terms of sharing creating deeper learning.

Learn more through sharing journals. You have your own correlations between foods and other changes and then others have completely different correlations between their foods and changes.

By sharing Eli was now not only learning from his own experience he was learning from his peers. In doing so he made links and associations to his peers' changes, in this case they are different. Cranton (2006) found that the connected knower is more likely to relate to others transformative learning experience. As Johnson and Johnson (1987) in studies of promotive interaction student engage higher-level reasoning and attaining insights from each other. Eli's group agreed with him Daniel goes on to reinforce and expand on Eli's discussion:

You can always add something – I found it more reflective. You can slightly change your perception of something by reflecting on others experiences. You gain an understanding of others. You know something because you have had the experience but when you share the experience or perspective of another person it can help you gain a wider or different perspective.

Daniel compares the two strategies by stating that he found the e-journal more reflective, through gaining insights from his peer's reflections. Cohen et al., (2006) also found that online diaries highlight challenges encountered and in doing so allow for in-depth insights that may otherwise have been lost. As discussed in the content analysis. This experience is reinforced with Emma from Group One who could compare the e-journal with her face-to-face sharing experience:

I found the learning online a deeper experience because of the interaction which I didn't feel that I got in class to some extent. Emma

Frank (2003/4) and Harasim (1990) found that text-based discourse often becomes more reflective than verbal communication. However, Isabel found that the correlations were the same in terms of goals around achieving better health.

I related to their experience and could understand where they were coming from in terms of their achievements that are working towards goals with their health. Their goals may not have been the same as mine because we all have our own different goals when it comes to our own health, everybody's body is different with different health issues but we are all working towards improved health.

Johnson and Johnson (1987) consistently discuss in positive interdependence the group are working towards a common goal. The groups were not working together on a shared project where results of the group are allocated to all group members. So what motivated these learners to share so readily? For these participants, was the implicit common goal the health benefits?

A theme that reoccurred as much as thinking and learning was that of the participants being able to 'see' the learning process, and related this to the learning experience along with sharing. Cohen et al., (2006) online diaries allow for in-depth insights that may have otherwise been lost.

Papanikolaou & Boubouka (2010) found that along with enabling peers to reflect on each others work the online diary aided explicit thinking that was visible.

It was great to see each others reflections and be able to comment on them. Whether the experience related to your own or not... By sharing journaling you see your own process and others process, this in turn affects your own process. Daniel

While Group Two related to learning from being able to see other participant's reflections and relating this to their own experience. Cohen et al., (2006) found that online diaries allow for in-depth insights of project implementation as well as highlighting challenges encountered and the development of solutions for those challenges, insights that may have otherwise been lost.

It was a different experience you could see the problem solving, helping each other with issues, making suggestions. (All agreed) Ann

Ann related to being able to see the problem solving, something she had not experience in traditional journaling, face-to-face sharing. Through being able to observe other participants learning processes additional evidence of interdependent learning. Moon (2006) describes as the student becomes more efficient they not only learn about content but learn about learning itself, this she defines as metacognition. Computer based communication helped learners to organise, reflect on and share their work (Dirkx & Smith, 2009), aiding explicit thinking that was visible. As in Papanikolaou and Boubouka's (2010) study students valued the opportunity for collaborative peer interaction, spending a considerable amount of effort in testing discussing and trying out alternative approaches to problem solving which greatly influenced individual's discussions.

Unseen Reflective Learners

During the e-journal focus groups three participants, two from Group One and one from Group Three agreed that they had learned from the e-journals, however as the focus group progressed they spoke about not having made a contribution themselves but had learned from reading their peers journal writing and discussions. When the data was checked the participants' contributions Eli from Group One had in fact participated. On further questioning this learner compared their participation with their peers and perceived their contribution as not having been enough to warrant participation. At first it can be perceived as non compliance or completion, however at the literature points out e-learners are not always visible. These learners have been referred to as lurkers (Nonnecke & Preece, 2000; Ramirez, et al., 2007; Schild & Oren, 2005), observer-participants rather than active-participants (Ramirez, et al., 2007), and hard to involve online users (Andrews, et al., 2003).

During questioning the participants for non-participation the researcher learned that the Isabelle and Yasemin had experienced computer difficulties at home, while Eli had been

very busy, hence minimal postings. As Kwok-Ling (2001a) points out students have to deal with very real issues around technological difficulties such as; access to computers, internet server provider (ISP) connections, internet speed, servers crashing and systems crashing. Technical issues have always been an issue, even in face-to-face classrooms where, for example the computers fail start up; PowerPoint's fail open, over head projectors that do not quite show the images that have been carefully created. However, the tutor usually has a back up plan; with careful planning and organisation prior to the session technical issues can be reduce to a minimum or not used at all. To ensure that learners can participate in an online session there are off site issues, things technician and tutors only have so much control over. Now the tutor is reliant on the student to have some computer literacy skills and to be able to problems solve issues so that they can participate. If there is resistance to using technology due to hence some learners simply give up, weighing up the total allocation of marks for the online participation and deciding to forfeit those marks in the overall summative marks for that paper.

Interestingly these learners persisted even though marks were not being allocated for the journal. It was their own motivation to contribute that drove them to persist and then the learning experiences when they did, even though they could not comment themselves. Eli gives evidence of integrating others ideas and relating his peers issues to his own experience. Yasemin also discussed relating others experiences to hers which made her think and reflect more on about herself. Both examples are evidence of evidence of a critical dialectic through interdependent learning.

I didn't participate but I did read others experiences. I definitely learnt from their issues they had and that can help me prepare better for preparation. I knew the issues before hand so could integrate them with my own issues and relate them to my experience. Eli

There were several examples to support the premise that these unseen learners were still engaged in the learning process, the difference being they were unseen.

I usually sit back and wait to participate anyway, whatever the situation I like to hear everyone else first then I will make a comment. Yasemin

Yasemin provides evidence of reflective learning even in a face-to-face situation., this comment relates to Honey and Mumford's (1982) reflective learning style, which they describe as the learner who observes and ponders experiences from different perspectives, gathering information first hand and from others prior to coming to a conclusion. They take a back seat in meetings listening to others, weighing up what is being said before making their own points. In a face-to-face class the learner would be visible whereas in the e-journal the reflective learner is not visible. Moodle has a function that allows the tutor to observe activity reports for each individual learner. The activity reports show when a student has viewed a post but not made a comment. With this function it could be possible to assess whether the learner was actually observing and reflecting or had stopped participating altogether.

I found I related to it as I was reading it online. I didn't feel like I actually needed to participate because I was learning anyway just from reading. We were all writing about our self and our own experiences. I put more into self through writing more than face-to-face. Isabel

All three learners agreed that they felt as though they were still participating through reading the peers journals and discussions. The term lurker does not imply that the person is not actively participating but lying in wait or loitering, which has a negative connotation. All of the unseen learners in this study felt engaged in learning. Therefore, a more suitable term would be reflective observers.

Issues around e-Learning

Health Issues

The participants were not just learning about health, they were learning about ways of staying healthy and promoting wellness through traditional philosophies that underpin approaches to natural health. Therefore, the issues surrounding computers and the over use were well known by all participants raising poignant discussions within the focus

groups. These findings were unanticipated going into the study; therefore this section introduces new literature in relation to the focus group discussions. Group Two, who did not participate in the e-journal, raised several concerns around e-learning, and one participant in Group Three (the group with most interaction), also felt very strongly about these issues.

General health in relation to the use of computers was discussed which lead into discussions around what exactly the health risks are.

As an individual I minimize the amount of time I spend on the computer because I actually don't believe it's healthy. Gioia

As Kwok-Wing et al (2001a) states both teachers and students are spending increasingly longer times in front of the computer in order to complete their work. He goes on to caution teachers about the issues related to their own well-being and that of their students. The health risks involved with over use which range from eyestrain, wrist and shoulder pain to musculoskeletal injuries (Laeser, Maxwell, & Hedge, 1998). The Ministry of Education (Ministry of Education, 1998) states that the use of laptops in schools where learners are expected to use a small key board, trackball or pointing device for extended periods are at a greater risk of developing Occupational Overuse Syndrome (OOS). The participants were very aware of the health issues surrounding the long term use of computers. This is reflected in the participants concerns.

It's not just the ergonomics like the seating or the bending over the desk, it's reading from the screen... We are here at this college learning about health so I just don't think that we should be forced or encourage to sit for long periods in a very unnatural way (Malachi)

Interestingly the participants who were very opposed to long term or over use of computers linked their dislike in relation to computers not being conducive to, and the use being unnatural not fitting the context of their natural therapies practices they were studying.

It's the environment, the computer doesn't belong in the environment, of our practice, the environment is a place of essential oils, calmness, no clutter, having a computer in there is like putting a wolf in the chicken coupe, it just doesn't fit. Mauro.

Two of the groups of participants were very aware of the issues surrounding the health risks of Electromagnetic Frequencies (EMF's) or Radiation (EMR) that are emitted from computers and monitors.

*...it's the exposure to every thing from the computer...radiation, Gioia.
...and the electro magnetic's that are emitted from electronics. Malachi.*

On review of the literature around EMF's there has been concern over the health risks of EMR since the late 1980's (Brodeur, 1989). In response to growing public concern in 1998 the World Health Organisation (2011) launched an international project to address the concerns of the increasing number of lower level frequencies found in homes. While it is now recognised that EMF's are possibly carcinogenic to humans (Gaudin, 2011) from cell phone use, other sources are still hotly debated. While numerous websites report research around the health risks of EMF's and radiation from cell phones to power lines and computers the World Health Organisation offers guidelines around computer and laptop usage.

Group Two would not participate in the online journal the reasons being from a privacy and trust perspective. As Taylor (2009) points out the tutor may have needed to create a community in which it is safe to share. Group Two also discussed the context of "sitting in front of the computer or writing on one is not natural. I'd rather write free hand and read actual pages" as Malachi points out. While Louise discusses the use of drawing, for her it the use of pens, pencils and colour. Dal referred to the philosophies she had learned, preferring a more traditional approach.

When a profession has fundamental philosophies that underpin the way courses are delivered, the points above are very valid. Does the e-learning environment and instructional designs reflect the philosophies of the content being delivered?

Summary

As comparisons were not made with the traditional journal it is hard to compare entries for depth of critical thinking. However, what were compared were the learner's experiences. Findings indicate that unless the tutor fosters a positive interdependent environment and provides spaces for promotive interaction, deep learning may not happen. All learners who participate agreed that e-journaling developed deeper thinking, through insights that developed an awareness to peer perspectives and insights to how they themselves learn and how others learn. When promoting positive interdependence goals are not necessary in this case students shared generously despite not having a common goal other than the benefits to their health and learning. Sharing with others that keeps us trustworthy and honest (Dewey, 1933) with ourselves and in doing so challenges assumptions and beliefs we may not have otherwise been aware of (Taylor, 2009), opening up blind spot that we may have otherwise been unaware of.

Limitations of the study

A limitation of the study is lack of analysis of the reflective learning journals the students were originally utilizing. The decision not to analyse the original reflective learning journals was made prior to the data gathering phase due to issues presented in the literature. As Moon (2006) and Phipps (2005) point out it takes time to evaluate reflective learning journals. Additionally other issues had an impact on this decision such as trust (Moon, 2006). All learners discussed trust in terms of who would see their journals and sharing with the tutor only as the expert. Issues such as the learner not being able to journal while analysis for the study was occurring (Chickering & Gamson, 1991; Phipps, 2005). As Cohen et al., (2006) point out there is the organisation of large amounts of data that need to be arranged into themes for analysis. Interestingly all of these were the advantages of the e-journal from a researcher perspective. Had the traditional journals been analysed the outcomes Group Ones sharing time would have to have been included in the study.

Chapter Seven:

Conclusions and Recommendations

Chapter Seven: Conclusions and Recommendations

While the purpose of this study was not a meta-review as in depth examination of existing interdependent theories, there still may be a need in another study to examine these theories in relation to the evolution of communication via the internet. For example, is there now prevalence of interdependent communication via social networking sites such as, Facebook, Bebo, and MySpace? While this question is outside the boundaries of this study in examining previous theories, in relation to e-journaling, these questions and more have been raised for me as the investigator.

- Therefore, Johnson and Johnson's (2003) theories may need a completely new perspective and re-examination in relation to learning online.

From the researchers perspective none of the analysis models suited this research. Gunawardena et al., (1997) very rightly state that each qualitative study examination of computer mediated communication is so unique an analytical model should be developed to extract relevant findings for that study. In this case Henri's (1992) analytical model was the easiest to modify and even with the modifications it had its limitations.

- I strongly recommend that in further studies researcher develop or adapt analytical models to align with the interactions and learning, in order to capture essential data required for answering the research question.

As highlighted in the previous chapter, the limitation of the study was a lack of analysis of the reflective learning journals the students were originally utilizing in order that the researcher compares the journals for depth of learning. This was a decision made prior to the data gathering phase due to issues presented in the literature around analyzing large amounts of hand written data, gaining trust from the participants, participants not being able to write while the journal is being analysed.

- A recommendation for a larger study where journal writing of both types of journals and observations in sharing journals can be analysed and compared in which more probable conclusions to be drawn.

Both the more traditional reflective learning journal and the e-journal can develop interdependent learning. However, the e-journal is much easier in monitoring of journal entries, management of paper work and data, and the support of students. As the finding from the analysis show, for these participants the reflective journal was a very successful tool in developing critical reflection and awareness to of the individual's perspectives. However, for the majority of the participants learning was a very solitary and individualistic learning experience. The development of independent learning skills is as equally important as developing collaborative learning skills, not just for success within the tertiary learning environments but beyond into the workplace. This is an important finding in relation to the gap in the literature between developing independent and cooperative learners.

- As a result of this finding I would recommend that both activities are planned within sessions, where an activity could begin with independent thought and progresses to shared thinking, at the end time is allocated for self-reflective thought around the activity.

From Kirschner's (2006) perspective interdependent learning is simply interaction. Where as Leach (2003) defines interdependent learning as learning together and learning alone. This research has proved that both are true, learners do not require goals or rewards to share, as in Johnson and Johnson's (2003) theories, promotive interaction in a positive interdependent environment was enough in this case study to encourage students to share. However, the tutor was the key in fostering the sharing environment. Educators may need to relearn and rediscover Johnson and Johnson's theories in relation to the e-learning environment today. Professional development workshops specific to positive interdependence would be of an advantage in educating tutors and e-moderators

to the benefits of sharing together and reflecting alone, fostering transformation through interdependent learning.

When promotive interaction is encouraged in the e-journal a critical dialectic develops at an essential stage of the experiential reflective learning cycle (Kolb, 1984), abstract conceptualisation. When the critical dialectic occurs at this stage of Kolb's cycle the sharing of experiences give learners new perspectives that foster transformation. While there has been a significant focus on experience and reflection, in terms of fostering transformation essential to the independent learner, this finding highlights the need to examine the areas of abstract conceptualisation, where assimilation, accommodation or rejection can occur. Furthermore, within this process a critical dialectic between peers needs to occur in order to prevent the learner from becoming self-absorbed through continually looking inwards (Bleakley, 1999). As Cranton (2006) found the connected knower is more likely to relate to others transformative learning experiences, ensuring the learner develops a critical perspective of their own learning, fostering metacognition.

- I strongly recommend spending the time to foster trust and support to encourage learners to reflect together and develop trust in learners that they will learn from each other.

While both skills can be developed in face-to-face interactions, the tutor is not always aware of discussions or the thinking process of each learner within the face-to-face class. Where as, each thread of thinking is visible in an online learning environment. Solitary thinking and learning processes can be observed and assessed along with thinking process in relationship to peers. This dialectic between thinking alone and thinking together does not just show the thinking processes but the depth of reflection and transformation of frames of reference as a result. This research shows that when questioned all who participated were aware of insights occurring through observing thinking and learning during the e-journaling process. This is an important finding in relation to the development of higher order thinking and metacognitive skills. Furthermore, This is an

important finding as it reinforces the need to include promotive interaction at some point in a session, in evaluating and assessing together the learner does not become too self-absorbed in the thinking process and becomes blind-sided by their own subconscious beliefs or limitations of previous experiences on which to draw from.

- I recommend that any type of reflection on performance be given an online space. Ideally within a social space as learners will not only see their own insights but get to experience each other's widening the learning experience.

While both self-reflective and cooperative skills can be developed in face-to-face interactions, the tutor is not always aware of discussions or the thinking process of each learner within the reflective learning journal, or while many groups share discussion at the same time. Whereas each thread of thinking is visible in the e-journal. This is an important finding in relation to student support and monitoring through, what can otherwise be, a very solitary process. Interestingly in the literature reviewed only references were made to insights (Cohen, et al., 2006, Johnson & Johnson, 1987), while Papanikolaou and Boubouka (2010) refer to the visibility of thinking, again it was only mentioned, their references were either inaccessible or again only mentioned, rather than examined this phenomenon.

- As this was a major theme within the discussions this phenomenon requires deeper examination in relation to the higher order thinking, metacognition and transformation.

Moodle was extremely easy to use even for those who had never participated in an e-learning course before. However, another finding was that technological issues are real in every course. While educators do everything in their power to prevent these issues they are still occurring. What is revealing is that e-learning does not suit all learners, depending on the context and content of journal. This finding is significant in terms of developing e-learning courses. This is the age of technology, that cannot be disputed, however, care and consideration must be taken during the decision making process

around the purpose of and during the development and design of online courses. Educators need to ask; what is the purpose of placing a course online? Does the e-learning environment reflect the nature of the content being delivered? Who do we want the student to interact with, the tutor, the content, activities within the system, peers or the wider e-global community, or a variety of all of these interactions? This research provides evidence that even those learners who did not visibly participate online were still learning through reading, observation and reflecting on peers' experiences and interactions. They are in fact engaged in the learning process.

- Moodle allows the e-moderator to monitoring visits to activities and forums. A recommendation would be to check the activity reports before assuming that a learner is not engaged with the programme. Give learners time to reflect and process new information or requirements of activities. If need be, unseen learners could be contact via email in order to establish reasons for non-participation and to reassure and encourage the learner to participate.

Final Points

This project revealed that when a climate of positive interdependence defined by Johnson and Johnson (2003) is encouraged by the tutor, e-journaling is an effective teaching and learning strategy capable of deeply engaging the learner, developing a critical dialectic between learners that fosters transformation.

Contrary to the literature, learners do not need goals or rewards to either engage with each other or to motivate learners to complete courses online.

Any course seeking to enhance journaling would be advised to train staff in promotive interaction and take the leap of trusting learners to engage with each other.

Appendices:

Appendix 1: Participant Information Sheet

Appendix 2: Consent Form – Principal

Appendix 3: Consent Form – Students

Appendix 4: Consent Form – Tutors

Appendix 5: Reflective Learning Journal Focus Group Questions

Appendix 6: E-Journal Focus Group Questions

Appendix 7: Reflective Observers Focus Group Questions

Appendix 8: Moodle E-Journal Functions



Appendix 1: Participant Information Sheet

INFORMATION SHEET

Title of Thesis:

E-Journaling: a strategy to develop interdependent learning

My name is Mary Hayes. I am currently enrolled in the Master of Education degree in the Department of Education at Unitec Institute of Technology and seek your help in meeting the requirements of research for a Thesis course which forms a substantial part of this degree.

The aim of my project is to explore the effectiveness of e-journaling as a strategy in developing interdependent learning

I request your help in the following way.

Procedure:

Participants will be required to attend a focus group meeting, lasting approximately 20-30 minutes, at a time that is mutually suitable, to discuss experiences of reflective journaling. Participants will then continue journal writing online in a secure e-journal. After which, participants will be required to attend a focus group meeting, lasting approximately 20-30 minutes, at a mutually suitable time, to discuss experiences of e-journaling.

Confidentiality:

Information collected from participants will be confidential to the research and will not be identified in any publications resulting from it. Neither you nor your organisation will be identified in the Thesis. I will be recording your contribution on voice recorder and will provide a transcript (or summary of the findings) for you to check before data analysis is undertaken.

Findings:

The findings from the research will be published and a copy will be in the Unitec library, Carrington Road, Mount Albert. At the completion of the study a summary of the findings will be sent to all participants.

Participant's rights:

If you agree to participate in this research, your rights are as follows:

- You may refuse to answer any questions about the study at any time during participation
- You may ask any questions about the study at any time during participation

- You may provide any information to the understanding that your name and the name of your school will not be used unless you give permission to the researcher
- You will be given access to a summary of the findings of the study when it is complete
- Agree to participate in the study under the conditions set out in the information sheet

I invite you to attend and hope that you agree to take part and that you find this participation of interest.

If you have any queries about the project, you may contact my supervisor at Unitec Institute of Technology.

My supervisors are Dr Karen Dobric or Dr Mary Panko and they may be contacted by email or phone at:

UNITEC New Zealand
School of Education
Private Bag 92025
Auckland

Dr Karen Dobric
Phone: (09) 815 4321 ext: 8524
Or
Dr Mary Panko
Phone: (09) 815 4321 ext: 8552

Email: kdobric@unitec.ac.nz

Email: mpanko@unitec.ac.nz

Yours sincerely

Mary Hayes
Mobile: 021 665 260
Email: edu.conz@vodafone.co.nz

UREC REGISTRATION NUMBER: 2008: 846

This study has been approved by the Unitec Research Ethics Committee from June 11th, 2008 to June 11th, 2009. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Committee through the UREC Secretary (ph: 09 815-4321 ext 6162). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.



Appendix 2: Consent Form – Principal

CONSENT FORM – ADULTS - Principal

DATE: June 20th, 2008

TO: [participant's name]

FROM: Mary Hayes

RE: Master of Education

THESIS TITLE: E-Journaling: a strategy to develop interdependent learning

I have been given and have understood an explanation of this research and I have had an opportunity to ask questions and have had them answered. I understand that neither my name nor the name of my organisation will be used in any public reports. I also understand that I will be provided with a transcript (or summary of findings if appropriate) for checking before data analysis is started and that I may withdraw myself or any information that has been provided for this project up to the stage when analysis of data has been completed.

I agree to take part in this project.

Signed: _____

Name: _____

Date: _____

UREC REGISTRATION NUMBER: 2008: 846

This study has been approved by the Unitec Research Ethics Committee from June 11th, 2008 to June 11th, 2009. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Committee through the UREC Secretary (ph: 09 815-4321 ext 6162). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.



Appendix 3: Consent Form – Students

CONSENT FORM – ADULTS - Students

DATE: June 20th, 2008

TO: [participant’s name]

FROM: Mary Hayes

RE: Master of Education

THESIS TITLE: E-Journaling: a strategy to develop interdependent learning

I have been given and have understood an explanation of this research and I have had an opportunity to ask questions and have had them answered. I understand that neither my name nor the name of my organisation will be used in any public reports. I also understand that I will be provided with a transcript (or summary of findings if appropriate) for checking before data analysis is started and that I may withdraw myself or any information that has been provided for this project up to the stage when analysis of data has been completed.

I agree to take part in this project.

Signed: _____

Name: _____

Date: _____

UREC REGISTRATION NUMBER: 2008: 846

This study has been approved by the Unitec Research Ethics Committee from June 11 2008 to June 11th, 2009. If you have any complaints or reservations about the ethic conduct of this research, you may contact the Committee through the UREC Secretary (p 09 815-4321 ext 6162). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.



Appendix 4: Consent Form - Tutors

CONSENT FORM – ADULTS - Tutors

DATE: June 20th, 2008

TO: [participant's name]

FROM: Mary Hayes

RE: Master of Education

THESIS TITLE: E-Journaling: a strategy to develop interdependent learning

I have been given and have understood an explanation of this research and I have had an opportunity to ask questions and have had them answered. I understand that neither my name nor the name of my organisation will be used in any public reports. I also understand that I will be provided with a transcript (or summary of findings if appropriate) for checking before data analysis is started and that I may withdraw myself or any information that has been provided for this project up to the stage when analysis of data has been completed.

I agree to take part in this project.

Signed: _____

Name: _____

Date: _____

UREC REGISTRATION NUMBER: 2008: 846

This study has been approved by the Unitec Research Ethics Committee from June 11 2008 to June 11th, 2009. If you have any complaints or reservations about the ethic conduct of this research, you may contact the Committee through the UREC Secretary (p 09 815-4321 ext 6162). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

Appendix 5: Reflective Learning Journal Focus Group Questions

Focus Group Questions

Reflective Learning Journals

Students

- 1) What does interdependent learning mean?
- 2) What was your experience of learning through reflective learning journals?
- 3) Did you learn from each other through the reflective learning journal process?

Tutors

- 1) What does interdependent learning mean?
- 2) What was your experience of teaching through reflective learning journals?
- 3) Did you observe students learning from each other and if so, how?

Appendix 6: E-Journal Focus Group Questions

Focus Group Questions

E-Journal

Students

- 1) What was your experience of learning through the e-journal?
- 2) Did you learn from each other through the e-journal process?
- 3) How does the reflective learning journal experience compare to the e-journal experience?

Tutors

- 1) What was your experience of teaching through the e-journal?
- 2) Did you observe students learning from each other and if so, how?
- 3) How does the reflective journal experience compare to the e-journal experience from a tutors perspective?

Appendix 7: Reflective Observers Focus Group Questions

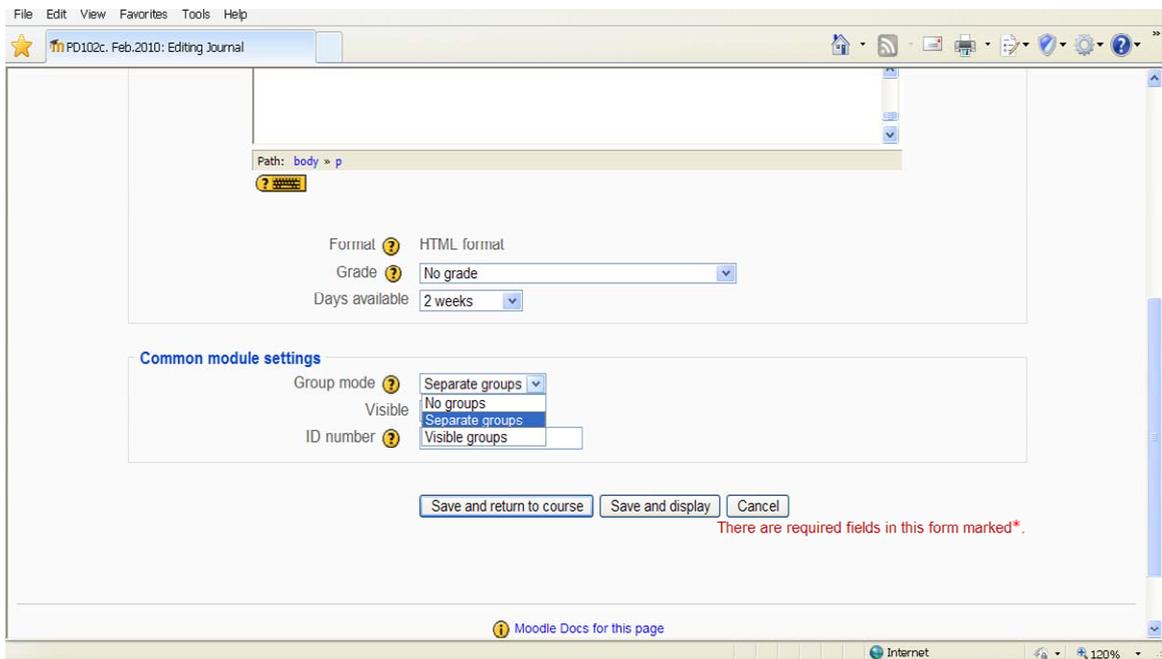
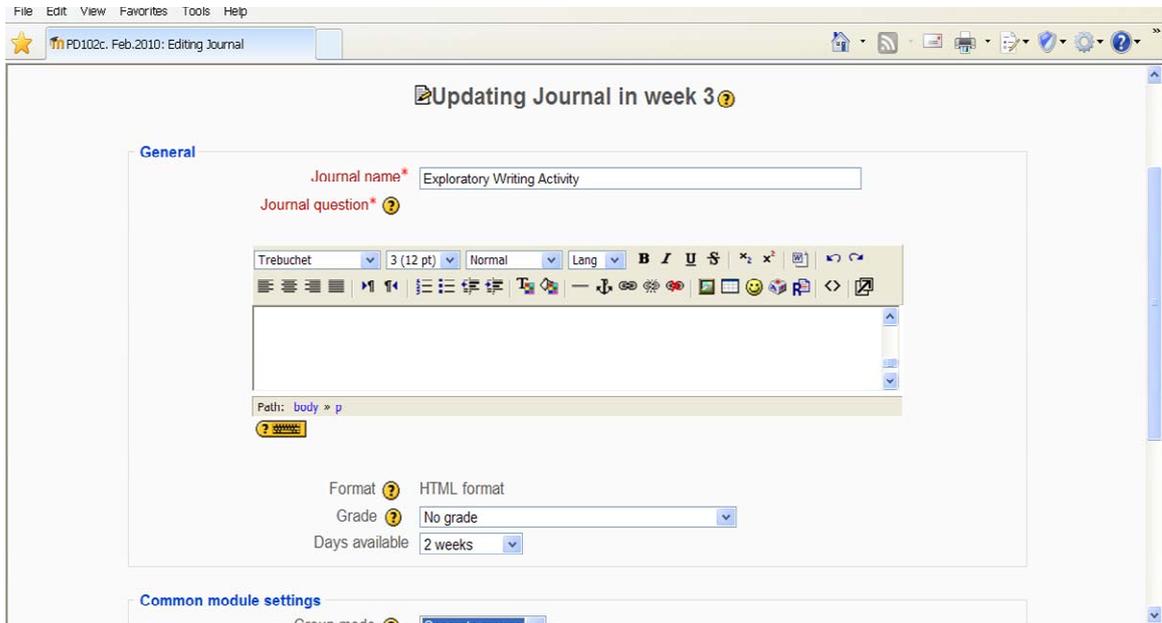
Focus Group Questions

Reflective Observers – Additional Questions

- 1) Why didn't you participate?
- 2) Even though you didn't make a comment did you learn anything from the reading?
- 3) How did you learn?
- 4) Did you feel you were still engaged in learning?
- 5) How?

Appendix 8: Moodle E-Journal Functions

Moodle Journal Interaction Functions



*This is an example of the journal writing functions on Moodle and is not specific to this case study therefore the course code is irrelevant.

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