DOCTOR OF PHILOSOPHY

Learning from adverse incidents: using action research cycles to generate individual and organisational knowledge

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Award date:
2010

Awarding institution:
Bangor University

LEARNING FROM

ADVERSE INCIDENTS

USING ACTION RESEARCH CYCLES TO GENERATE INDIVIDUAL AND ORGANISATIONAL KNOWLEDGE

Thesis submitted in fulfilment of the requirements for the Doctor of Philosophy in the University of Wales, December 2010

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ACKNOWLEDGEMENTS

The studies that make up this thesis were funded by the Research Institute for Enhancing Learning (RIEL) in Bangor University. The opportunity to conduct the studies was made possible because of a project funded by the ESRC and the NHS in Wales; the project was based in the RIEL and was designed to explore the potential a new risk management curriculum may have on risk management practices.

I would like to thank Dr. John Fazey who was Director of the RIEL, for encouraging me and giving me the chance to pursue my research interests. I would like to thank Dr. Richard Edwards for his humour, insight and knowledge. I would like to extend my gratitude to all who gave up their time to participate in the studies, especially to colleagues from the government, public, voluntary, and third sectors who were prepared to discuss and refine my thoughts in relation to learning from adverse incidents. My appreciation is offered to Professor Michael Eraut for his interest in this research and for giving permission to use and adapt his work on speed and the mode of cognition.

Completion of this thesis was achieved with the support and dedication of Dr. Sion Williams who became my PhD supervisor in 2008 and worked with me to the end; the final presentation of this thesis was also due to the thoughtful feedback of my examiners, Professor Jo Rycroft Malone and Professor Donna Ladkin.

DEDICATION

This thesis is dedicated firstly to my family, James and Kate, their tolerance, patience and unwavering support made it possible for me to complete this body of work, and secondly to Milo who provided companionship during the long periods of working alone.

SUMMARY

This thesis represents a body of work which is about individual and organisational learning from adverse incidents, the context of the studies was the National Health Service (NHS). The thesis presents a series of exploratory studies which were undertaken in order to discover whether NHS staff had a disposition to learn from adverse incidents and whether their employing organisations were indicative of a supportive learning environment. The studies began with the premise that failing to support NHS staff to learn from adverse incidents contributed to their occurrence and re-occurrence.

This thesis makes a contribution to the scientific community in a number of ways; firstly it relates findings from exploring deep approaches to individual and organisational learning from adverse incidents. Secondly the thesis highlights the role of educational leadership as a mechanism for overcoming organisational barriers to learning from adverse incidents. Lastly and most importantly the thesis demonstrates that while progress is being made to educate staff towards achieving greater patient safety, there is much to be gained from concentrating educational efforts on supporting learning *in* the workplace. To this end the thesis illuminates how workplace learning from adverse incidents can be viewed as a source of *positive* learning for both the individual and the organisation and, presents findings from a new piloted approach to learning in which the student/participants came to view learning from adverse incidents as a positive experience. The thesis concludes with a range of tools specifically designed to support NHS staff in the workplace to learn from adverse incidents.

FOREWORD

The research in this thesis was undertaken alongside that conducted through a jointly funded ESRC and NHS Knowledge Transfer Project (KTP). The focus of the project was to develop new risk management curriculum designed to enhance the risk management practices of NHS staff. Those involved with the project contributed to the development of curriculum, the e-learning software and also to the wider Learning Community (LC). The project and the LC became known as risk-*e*. My particular role in relation to the project was that of academic lead; as such I had overall responsibility for the project and oversaw the project research. As Research Fellow in the School of Education, I also conducted research independent of the risk-*e* project. This was funded by the research department and centred primarily on individual and organisational learning; I had at this point in my research career developed a professional interest in the potential to learn from adverse incidents.

The research undertaken to develop the risk-*e* LC was guided and shaped by the principles of becoming a Learning Organisation (LO), this research and the studies that identified approaches to learning from adverse incidents and ways in which to overcome barriers to learning from adverse incidents, were separate from the risk- *e* project and forms the body work within this thesis.

INTRODUCTION

Given the reflective nature of this thesis it is appropriate at this stage to provide a brief reflexive narrative that will convey an explanation as to how and why I became involved in this area of study. I commenced my PhD studies employed as a Research Fellow in Bangor University at a point in my career where the culmination of my professional and personal life experiences converged. My professional work had included years studying and ultimately teaching health care law, gaining teaching and research qualifications and working as a clinician in a variety of clinical contexts (ultimately as a nursing sister). My appointment in the Research Institute in the School of Education facilitated the undertaking of exploratory studies into NHS risk management education. I suspected if health care practitioners were better informed, educated and supported in the management of risk then fewer adverse incidents were likely to occur. The idea inspired a journey in the collaborative design, development, delivery and study of a new curriculum that was 'housed' in an ESRC funded project that became known as 'risk-*e*' project. This thesis presents a series of interrelated studies and findings that were separate from but conducted alongside the risk-*e* project. The specific outcomes of these studies contribute to the academic literature in terms of what we know about pedagogy and how this manifests with regard to individual and organisational learning from adverse incidents, and culminates with the provision of practical tools to facilitate learning from adverse incidents for the practitioner community:

Chapter 1: Context, Adverse Incidents, Learning and the risk-*e* project

This chapter explains the relationship between the KTP and studies in this thesis, introduces the background to the studies, provides an explanation of the term 'adverse incident' in the context of the National Health Service (NHS), and presents the overarching conceptual framework that is referred to in each of the studies.

Chapter 2: Literature Review

This is a review of the literature that begins with an overview of leading pedagogues and demonstrates how our understanding of how we learn has developed over time.

The chapter proceeds with a critical appraisal of the literature relating to Organisational Learning (OL) within and outwith the NHS and progresses to discuss factors that have shaped 'Learning Organisation' (LO) principles and processes in the NHS. The chapter concludes by discussing ways in which the NHS supports staff to learn from adverse incidents.

Chapter 3: Methodology and Methods

This describes the main characteristics of Action Research (AR) which was adopted as the overarching thesis methodology and provided a framework for each of the studies. Housed under the AR framework are Action Science (AS), Organisational Learning (OL), Action Learning (AL) and 'Framing' which are discussed in terms of supporting methodologies and methods which were used to aid data analysis and influence learning.

Chapter 4: Research design and development of the AR cycles

The research design chapter presents an overview of the data collection methods and analysis approaches used within each of the respective studies. The design reflects the conceptual framework and presents the operational framework within an AR cycle.

Chapter 5: The Action Research Cycles and Studies

This chapter commences with an overview of each of the AR cycles and is aided by the visual depiction of the studies over the study period. The chapter proceeds to present the interrelated studies that make up the thesis under the each of the three AR cycles.

<u>First Cycle: the risk-*e* studies</u>

The first study in this cycle (Study One) had two phases. The first phase explored the development of risk-*e* as a LO identified through participation in an emerging learning community, the second phase looked for evidence of a learning culture evidenced through student/participant approaches to learning.

The second study in this cycle (Study Two) sought to discover how learning could be used as a vehicle for change.

Second Cycle: the change in practice studies

This chapter describes the conduct of two studies that were directed at changes in practice. The first in this cycle (Study Three) examined espoused theories and theories in use and in so doing uncovered barriers to change. Study Three was undertaken in two phases, phase one involved field observations of risk management network meetings and peer teaching practice, phase two developed from this and pursued an observed disconnect in espoused theories and those in use through the mechanism of qualitative interviews.

The second study in this cycle (Study Four) focused on 'reframing' the learning experience by developing educational leaders as change agents. Reframing was intended to overcome some of the barriers experienced by the student/participants in bringing about changes in practice. Study Four has two phases, phase one examined the espoused educational leadership theories of the student participants, phase two explored how these theories were operationalised using a constructed 'field' (international research conference) in which learning was accorded a positive 'value'.

Third Cycle: the developmental studies

The Third Cycle houses Study Five which has three phases and leads to the tools that were developed from the PhD. Phases one and two are part of a proof of concept pilot known as Quality Improvement through Questioning and Analysis (QIQA). The first phase involved propositional knowledge and re-framing learning within a 'safe learning' environment. The second phase involved participating in a simulated dual learning and reporting system, this was designed to reframe negative connotations of learning from adverse incidents towards a positive learning experience.

The third phase in this study involved significant theoretical reviewing and refining of the data analysis tool developed in Study Two, this resulted in the production of a 'deep' learning tool designed to support the practitioner in the field in which adverse incidents occur.

Chapter 6: Findings

This chapter draws together the findings from the First and Second AR Cycles (studies One to Four) in order to present the barriers risk- *e* encountered as an emerging LO. The findings demonstrate how the challenge of overcoming these barriers informed and shaped each consecutive study.

Chapter 7: Development of tools for individual and organisational learning

This chapter presents the findings from the three phases in Study Five and demonstrates how the new knowledge and insights gained into how individuals and organisations learn from adverse incidents have culminated in the production of PhD tools.

The PhD tools presented comprise of a teaching intervention tool and a dual reporting and learning tool developed through QIQA and, the Whole System Learning Indicators (WLSI) tool. These are ultimately brought together as an approach to learning from adverse incidents formulated on a deep approach to organisational learning from adverse incidents. This is called the Whole Systems Learning in Adverse Incidents (WSL: ai) programme.

Chapter 8: Discussion and recommendations

This final reflexive chapter commences with an appraisal of the methodology and methods used, discusses them in terms of the strengths and weaknesses of the research design and makes suggestions for improvement when conducting future research. The chapter proceeds to discuss the thesis findings and PhD tools in the context of a contemporary literature review and concludes with a series of policy and practice recommendations.

CHAPTER 1: CONTEXT, ADVERSE INCIDENTS, LEARNING AND THE RISK- E PROJECT

"Experience is the name that everyone gives to their mistakes"

Lady Windermere's Fan, Oscar Wilde (1893)

1 Introduction

This thesis is a qualitative study (Guba and Lincoln, 1989) involving individual and organisational learning. The context is set in the National Health Service (NHS); the participants to the first four studies were employed by the NHS, and, at the time each study was undertaken were Bangor University students. As students they were enrolled on a newly developed University programme that combined propositional knowledge of risk management with teaching and learning, and experiential episodes in which the participants practiced the art of teaching risk management. They represented two student cohorts, the first student cohort (N=13) participated in PhD Studies One to Four, the second student cohort (N=11) participated in PhD Studies Three and Four. PhD Study Five involved the participation of new student/participants (N=20 anaesthetists) who agreed to 'test' a teaching intervention (phase one) and a dual approach to reporting and learning from adverse incidents (phase two). The first two study phases were incorporated into Quality Improvement through Questioning and Analysis (QIQA), phase three of Study Five saw the development of a set of deep learning indicators produced to support practitioners in the field (Biggs, 1999; Entwistle and Ramsden, 1983; Marton and Saljö, 1976). All students are identified as 'student/participants' throughout the studies.

The studies in this thesis were made possible because of a Knowledge Transfer Project (KTP) that had been funded by the Economic Social Research Council (ESRC) and NHS, this project was known as risk-*e*. The risk –*e* project had been undertaken to find new ways to improve the risk management knowledge and skills of NHS practitioners. The studies in this thesis complemented those undertaken for the risk-*e* project and recruited the risk- *e* students as participants to the PhD studies; they

are however distinct from the research undertaken for the risk-*e* project which focused on developing new risk management curriculum and new risk management e-learning software.

The main research question for this thesis focused on whether students had the ability to develop and inculcate an approach to learning that would enable them to contribute to the delivery of government and organisational policies regarding learning from adverse incidents. The ability to understand how we learn from adverse incidents and create a culture and environment in which learning is possible is a considerable influencing factor in the field of organisational learning and change. This provided the impetus for developing tools for practitioners in the field in the last study. Finding ways in which to support individual and organisational learning from adverse incidents [1] is the most important feature of this thesis.

The underpinning methodology used throughout the PhD studies was Action Research (AR) (Lewin, 1946, 1947, I and II); this meant that the studies flowed in iterative AR cycles, each one building on the previous while drawing on the constructivist (Guba and Lincoln, 1989) paradigm. The shared philosophical underpinnings of AR and Constructivism (Appleton and King, 2002) meant that this structure enabled the location of new knowledge about how student/participants were constructing learning from adverse incidents. Constructivist analytical techniques adopted in the studies included honouring the authenticity and world view of the other (Meadows, 2010; Steier, 1991), gaining a common understanding of that world view through the use of conversation, participant observation, interviewing, iteration, confirmation and disconfirmation of what was thought to represent a co-constructed reality (Schwandt, 1994). It was through collaborative processes that University students became student/participants and knowledge was co-constructed through the shared meanings and understandings of the social situation (Lewin, 1947 I and II).

1. The definition of adverse incident incorporates those in the Department of Health report *An Organisation with a* Memory which states it as being, *'An event or omission arising during clinical care and causing physical or psychological injury to a patient'*; and that promulgated by the Medicines and Healthcare products Regulatory Agency which states, *'An adverse incident is an event that causes, or has the potential to cause, unexpected or unwanted effects involving the safety of patients, users or other persons'.*

These processes may ultimately have changed the cognitive schema or 'form'[2] (Eisener, 1991) with which student/participants viewed the world, and contributed towards their development of apperception (Eisener, 1991) and expertise (Benner, 1984; Eraut 1994) in the reduction of adverse incidents. The research methods adopted for the PhD included data collection using qualitative interviews and questionnaires, field studies and participant/peer observation, as well as a reflexive analysis of significant episodes that assisted with sense making of data. New knowledge was also fed into teaching and learning materials (Boud and Walker, 1998) for the benefit of the whole of the risk-*e* Learning Community (LC) (Raven 2003; Senge, and Scharmer 2001).

1.2 Background and context

In order to understand the significance of why learning is important when there has been an adverse incident an explanation of adverse incidents in the context of risk management in the NHS is provided below. The chapter then explores barriers to learning from adverse incidents, different approaches to learning from adverse incidents and finally introduces the risk-*e* project.

1.2.1 What is an adverse incident?

According to Heinrich (1941 the sequence of an adverse incident (supra) has five key factors, these are:

1. Ancestry and social environment
2. Fault of person
3. Unsafe act and/or unsafe mechanical or physical hazard
4. Accident
5. Injury

Investigations into the causes of adverse incidents are often called Root Cause Analysis (RCA), RCA usually discover not one person to be at fault but a catalogue

2. Form is a schema dependent on the cognitive act by which experience is funnelled or sorted through the ability to nuance differences and detail born out of familiarity with the phenomena.

of events that conclude in disaster. Reason (1990) calls this the 'Swiss cheese' model of system accidents where, despite controls put in place to prevent harm, a variety of risks eventually line up to make the system unstable and ultimately collapse. An example of this happening in practice was the deaths of children at the Bristol Royal Infirmary (BRI) while undergoing heart surgery. The BRI Inquiry chaired by Sir Ian Kennedy presented damning findings of a system that was fundamentally flawed and compounded by a lack of openness about clinical performance. While laying responsibility for what went wrong with the clinicians and managers concerned, the Inquiry also acknowledged high quality practice and asked that we learn from what had happened stating *'we must all learn 'to treasure mistakes, because of what they can teach us for the future'* (Kennedy, 2001 p.272). Recommendations from the report included a *'duty of candour'* from NHS staff with the public when dealing with adverse incidents (Kennedy, 2001, p.281). Other suggestions were a supportive learning culture from adverse incidents for NHS staff and multidisciplinary student learning groups to facilitate Organisational Learning (OL) from adverse incidents. In addition the Inquiry highlighted the need for curriculum to include both how to understand the nature and error of mistakes and how to learn from them (Kennedy, 2001).

Adverse incidents are not confined to the NHS. Examples of 'disasters' outside the NHS from which lessons can be learned include the oil industry (Piper Alpha disaster) and the travel industry (Ladbroke Rail Crash). The Piper Alpha disaster occurred in July 1988. A subsequent investigation led by Lord Cullen (1990), listed in his report a hundred and seventy failures of which more than 30% were latent incidents. These included physical, systemic and some procedural working practices, most were known about way before the disaster happened. A total of 167 workers died.

The Ladbroke Grove Rail Crash (the Paddington train crash) occurred on 5th October 1999 at Ladbroke Grove, London, England. A three-car diesel train operated by Thames Trains collided with a First Great Western High Speed Train which had three passenger carriages. Thirty one people were killed and over five hundred and twenty were injured as a result of the collision. Lord Cullen subsequently conducted a public enquiry which identified latent conditions and insufficient training which contributed to an unsafe system.

1.2.2 Risk Management and Adverse Incidents in the NHS

> *Risk management is an integral part of good management practice. It is an iterative process consisting of steps, which, when undertaken in sequence, enable continual improvement in decision making.*
>
> (AS/NZS Risk Management Standards 4360: 1990 p.3)

Risk management (RM) is considered to be 'applied common sense' (Bannister and Bawcutt, 1981), it is a means of reducing the risks of adverse incidents occurring in organisations by systematically assessing, reviewing and then seeking ways to prevent their occurrence (Scally and Donaldson, 1998). Health care is however, by its very nature of complexity and unreliability a risky business making only a proportion of adverse incidents avoidable (NHS Executive, 1996). Factors that influence risk management practice include a person's attitude and behaviour towards risk, motivation to manage risk effectively, stress and its effect on risk management, perceptions of risk, personality traits and team interaction (Glendon and McKenna, 1995). 'Good' risk management might mean an individual is proactive and highly motivated towards their own and others risk management practice, they might also be knowledgeable about what constitutes acceptable and unacceptable risk behaviours and influencing factors. Prevailing views on how best to ameliorate poor risk management practices include encouraging safe behaviour (Glendon and McKenna, 1995) and to design a system that minimises accidents (Culvenor, 1997 (a) and (b)). Such a system would use 'controls' that prevent humans performing a negligent or careless act, fundamentally important to risk management is the creation of a safety culture (Helmreich, 2003). The introduction of a management culture in the NHS was primarily concerned with financial and organisational management (Griffiths, 1983, *Working for Patients*, DoH 1989). Society's expectations (*The Patient's Charter* DoH, 1992; *Citizen's Charter* DoH, 1993) led to better access to information and high profile medical negligence cases, this contributed to a perceived need for quality assurance which became known as Clinical Governance (Scally and Donaldson, 1998); by 1993 the NHS Executive stated that in order to protect both public and staff and safeguard the NHS against adverse incidents, RM needed to be central to all practices across the whole organisation. RM in the NHS advanced in 1997 with the

election of a labour government, whose vision for NHS reform incorporated a new legal duty of quality. The government white paper *New NHS Modern and Dependable* (1997) aspired to ensuring clinicians would be *'doing the right things, at the right time, for the right people, and doing them right - first time.'* (DoH, 1997 p. 17).

In Wales the Welsh Assembly Government (WAG) paper, *NHS in Wales: Putting Patients First (1997) and A First Class Service - Quality in the new NHS (1998),* followed the modernisation agenda set by the NHS in England and focused on quality improvements. Clinical responsibility for quality was handed to clinicians and managers, NHS Trusts would remain responsible for operational management but would have their statutory duties amended to include responsibility for *'the delivery of national and local health care objectives and quality standards'* (*NHS Wales Putting Patients First*, 1998 p.62) , WAG retained powers of 'intervention' should there be serious failure. The resultant quality framework was brought under a clinical governance system; this prioritised the meeting of clinical standards through continual process improvements and was backed by a statutory duty for quality for NHS trusts (DoH, 1997). The system incorporated setting acceptable standards of care, national priorities for care delivery and the establishment of organisations that would scrutinise, control and audit what went on in the NHS (McSherry and Pearce, 2002). Key legislation in the form of *The Health Act [1999]* introduced the Commission for Health Improvement (CHI), which had a monitoring, investigative role, and the *Government of Wales Act [1998] s63 (1)(e) and s63(2)*, which saw the establishment of both the Healthcare Inspectorate for Wales (HIW) and the Commission for Healthcare and Audit Inspection (CHAI). Standards of care were established through the National Institute of Clinical Excellence (NICE) and National Service Frameworks (NSF's), these were delivered locally through mechanisms for Clinical Governance. In order to sign off the statement of internal control that was a necessary part of Clinical Governance, Trusts were given a responsibility to ensure RM process. They were also tasked with developing an open learning culture that would ensure that incidents would be reported and lessons learned from them (*Clinical Governance Reporting Processes* (Guidance) DoH 2002).

The Clinical Negligence Scheme for Trusts (CNST) in England and the Welsh Risk Pool (WRP) in Wales were set up in 1996 to have a risk pooling function, RM quality

assurance and awarding systems. These systems required documentary evidence of the quality of NHS care provided and are audited to reflect RM capability. Both the CNST and the WRP adopted the Australian/New Zealand Standards (1999), a generic guide that demonstrates risk management process. The 'Standards' (known as Controls Assurance Statements (CAS) became the practical application of Controls Assurance and in 1999 the WRP and the WAG made a joint decision to develop the Welsh standards in line with the English CAS. The WRP expanded on the original CAS, resulting in a comprehensive 38 Welsh Risk Management Standards (WRMS). The WRMS used a 'hierarchy of control' which in essence meant;

1. Reducing hazard at Source;
2. Containing hazard at source;
3. Separation of hazard and people (by barriers, distance and so on);
4. Protecting the worker with PPE or relying on safe behaviour;
5. Post event strategies.

(Culvenor, 1997 (a) p. 56)

Despite the RM systems and processes in place there is a general consensus that adverse incidents are however inevitable (Glendon and McKenna, 1995; Reason, 1990; Culvenor, 1997 (b)). Using combined 'controls' as an efficient and cost effective way to prevent adverse incidents (Glendon and McKenna, 1995) remains insufficient, this is because controls that are designed and implemented are done so by humans who are prone to making mistakes (Reason, 1990; Bannister and Bawcutt, 1982). Although adherence to risk management standards and the application of sound professional and clinical standards through clinical governance was considered the foundation of quality and common sense, these government led initiatives and interventions did not bring the numbers of adverse incidents down, instead Figureures from 1970 onwards demonstrate increasing incidence and associated costs. In the decade between 1970 and the early eighties the cost of settling claims increased by just over four hundred per cent. From the eighties to the mid nineties costs had risen by over seven hundred and fifty per cent from fifty three million in 1990 to

approximately four hundred and fifty million in 2001/2002 (DOH 2003). In 2000 it was reported that there was a potential 'time bomb' of waiting claims of around 2.4 billion. Annual research Figureures into adverse incidents estimated:

- 400 people die or are seriously injured in adverse incidents involving medical devices
- nearly 10,000 people are reported to have experienced serious adverse reactions to drugs;
- around 1,150 people who had been in recent contact with mental health services commit suicide;
- nearly 28,00 written complaints are made about aspects of clinical treatment in hospitals.

(DOH, *An Organisation with a Memory*, 2000 p.5)

Around five percent of the eight and a half million patients admitted to hospitals in England and Wales each year experience an adverse event which may be preventable with the exercise of ordinary standards of care. The exact number of how many of these incidents lead to death is not known but it may be as high as two hundred and fifty thousand people a year (Kennedy, 2001). In 2003 the cost of litigation in Wales accounted for around £35,000,000 (Welsh Risk Pool, 2003). The number of complaints received in North West Wales has remained static over the last three years; but litigation in Wales increased by twenty five percent over 3 years, resulting in an increased insurance premium payable to the Welsh Risk Pool of 33%.

As an international problem, the UK was not alone with escalating adverse incidents and associated costs. The Harvard study in America (Brenan, *et al*, 1991) demonstrated that four percent of admissions in New York State, resulted in seventy percent of individuals suffering some form of disability. The Institute of Medicine (IOM) in America published *To Err is Human* (Kohn, Corrigan and Donaldson, (2000, AHRQ 2005) which identified between four hundred and forty four thousand and ninety eight thousand deaths were a result of medication errors and more people died as a result of adverse incidents than car accidents. *Making Amends* (2003)

identified America as experiencing the worst of it, due to the adversarial climate, defensive practices, escalating costs of settlement and insurance, which at that time was estimated to cost 0.2% of GDP (compared to 0.04% in the UK). An Australian (Wilson, *et al*, 1995) study on the quality of provision of health care discovered adverse incidents in 16.6% of admissions resulting in 13.7% suffering permanent disability and 4.9% resulting in death, fifty one percent of these were considered to have been preventable. In Denmark (Schioler, *et al,* 2002) a retrospective study of medical records demonstrated out of one hundred and fourteen admissions one hundred and seventy six adverse incidents were identified. Preventability was identified in over forty percent of these and thirty of the admissions resulted in either permanent disability or death. In New Zealand a national survey identified that in 1998, in thirteen public hospitals adverse incidents were associated with 12.9 percent of admissions. Approximately thirty five percent of the adverse incidents were classified as highly preventable (Davis *et al*, 2001). While the UK promulgates a less adversarial approach *(Making Amends,* 2003*)* to dealing with adverse incidents, anecdotal evidence reported by the WRP and wider NHS staff suggested evidence of a blame culture which impeded organisational progress towards active learning from adverse incidents. The WRP gave as an example the recurring and potentially fatal confusion over the dosage of oral methotrexate used in the treatment of arthritis in the General Practice setting.

In 2000 the NHS Plan launched measures to tackle some of the problems so far identified. These were taken up in 2002 by the General Medical Council (GMC) who required inadequately performing doctors to provide revalidation evidence in order to be deemed fit to practice which demonstrated they had learned from adverse incidents. In 2001 the National Patient Safety Agency (NPSA) was established by the DoH to implement and operate a mandatory National Reporting and Learning System (NRLS), learn lessons from errors and offer solutions and examples of good practice. It was also tasked with the target of reducing by forty percent the number of serious errors in the use of prescribed drugs by 2005. While the government acknowledged that complex health care was risky and adverse incidents inevitable, (*Building a Safer NHS,* 2001), it also recognised that much of what was 'inevitable' could be ameliorated through a learning culture and co-ordinated approach to reporting and learning from adverse incidents. *Making Amends (*2003*)* reiterated the need to learn

from mistakes and went a step further, while acknowledging the impact of adverse incidents on patients, it stated that adverse incidents experienced by *NHS staff* is also traumatic and that the psychological impact of the event on many is compounded by a protracted, adversarial legal process (DOH, 2000).

1.3 Barriers to Learning from adverse incidents

The NHS is a complex environment (Vincent, 2001 a) fragmented into multiple services, with many ambiguities across roles and functions, numerous funding, regulatory and governance interfaces. There is a culture of perfection geared towards saving lives and professional territorialism. It is a 'high risk' area of employment, where, in spite of often severe staffing crisis (Hawley *et al*, 1995; AHRQ, 2000), health workers are still required to work responsibly and be accountable for their professional practice (Tingle, 1997; Jones, Britain and West, 2000; Dimond, 1995). The management of risk is often challenged by inner personal and professional conflict (Hart and Hazelgrove, 2001) that results in suboptimal teamwork (Grieves, McMillan and Wilding, 2006), poor communication, a lack of vigilance resulting in failure to notice changes in patient condition (Benner, 1984) or lack of planned contingencies in treatment. These problems are not restricted to the NHS and parallel those found and subsequently learned from in the aviation industry (Helmreich, 2003). Inner conflict is often due to the loss of self esteem, status or respect when professional knowledge and expertise is questioned, seen as outmoded or out of date, and, results in disaffection for work contributing to the recruitment and retention crisis facing the health service (Jones, 1999; Hawley, *et al*, 1995; Morris, 1997).

The report *Organisation with a Memory* (2000) uncovered much to shed light on why NHS organisations have organisational amnesia (Senge, *et al,* 1995). Barriers to learning from adverse incidents included a focusing on immediate problems and superficial causes rather than fundamental and perhaps less obvious reasoning (Nicollini, *et al,* 2009), also NHS staff were perceived as holding rigid beliefs, values and assumptions which restricted their ability to learn. NHS organisations were rife with communication failures, denial and blame cultures (Huntington, Gillam and Rosen, 2000), where staff lacked the ability to see the system as a whole and morale was often desperately low. Other barriers to learning included tensions between learning and control of complex systems which become magnified by fear (Alberti,

2001) of legal liability, blame cultures and punishment (Vincent, 1997; Kennedy, 2001).

Other constraints to the openness required in the reporting and learning from adverse incidents include personal trauma coping with an incident and peer pressure to keep incidents out of the 'public' domain (Eraut, 1994; Alberti, 2001; Pearn, Mulroony and Payne, 1998). The social environment also influences learning (Eraut, 1994) as it is shaped by professional codes, policies, organisational agendas and resources that are extrinsic to the individual but have a clear effect on the scope the individual has to manage adverse incidents. Barriers to individual and organisational learning are many and may result in knowledge not being shared due to a perceived threat of disciplinary action (Alberti, 2001; Vincent, 2004). Constraints may also lie in situations which involve 'crisis management' for which there has been no subsequent de-briefing and group learning (Eraut, 1994). This may result in knowledge and insight into adverse incidents becoming internalised and without dialogue with others future practice is at risk of being based on inaccurate models of the required standard of care (Eraut, 1994). Issues surrounding learning from adverse incidents may be partly resolved by individuals accessing informal networks and groups (Eraut, *et al*, 1998), certainly support gained by discussing an adverse incident with colleagues outside of the formal reporting structure should not be underestimated. Eraut, *et al*, (1998) recognised these informal networks may possess stocks of knowledge that could be drawn on to better understand how adverse incidents occur and reoccur.

1.3.1 The systems approach to learning from adverse incidents

The systems approach to learning invokes a practice that requires the NHS to firstly investigate the system surrounding an adverse event rather than the individual who has been involved (Vincent, 1997). In contrast however the reverse often happens (*Organisation with a memory,* 2000), which results in looking for a person to blame and promotes a consensus that adverse incidents are because of *'aberrant mental processes, negligence and recklessness*' (Reason, 2000 p.768). This has resulted in the call for a widespread (Vincent, 2001 b; Alberti, 2001; Reason, 2000; Kennedy, 2001; Helmreich, 2003; NPSA, 200 (a)) use of a systems approach in order to target underlying systems failures instead of individual staff members (NPSA, 2005 (a)).

The systems approach stems from Organisational Learning techniques used to improve organisational performance, developed and endorsed by Senge (1990; Senge, *et al,* 1995), Argyris (1994), Kafman and Senge (1995), it is deemed to empower individuals to:

- Learn from past mistakes;
- Question and share ideas;
- Focus on collective learning in an environment of openness and trust;
- Become adaptive and dynamic;
- Understand the system as a whole.

An example of the NHS taking a systems approach to learning from adverse incidents is the systematic collection of information about adverse incidents from within all NHS organisations through Accident Incident Reporting (AIR) (Kennedy, 2001). Anecdotal evidence suggests that blaming is deeply routineised however as NHS staff now 'blame the system' rather than seeing their part to play in its design and application.

1.3.2 A learning culture that supports learning from adverse incidents

Ruchlin, Dubbs and Callahan's (2004) discussion of safety cultures draws on high reliability organisation theory (Perow, 1984; Reason, 1990) to posit four subcultures essential to safety culture effectiveness; these are a reporting culture, a just culture, a flexible culture, and a learning culture. Learning is seen as key to creating and sustaining a safety culture and is the *'most important defence against preventable harms* (Small and Barach, 2002 p.1464). The learning culture in the NHS has the potential to encourage individuals to be proactive about adverse incidents through creative thinking (Culvenor, 1997 (a)), anticipating adverse incidents through vigilance (Kennedy, 2001) and the identification of latent system failures before, rather than after, an adverse event occurs (Lawton and Parker, 2002). Learning processes need to include those that support NHS staff to 'unlearn' (Rushmer and Davies, 2004). This means breaking out of routineised practices which include ways of learning, and engaging learners (NHS staff) in such a way so they find themselves in the unfolding incidents, anecdotes and stories that surround adverse incidents. This process brings to the fore learning triggers that are powerful features of pedagogical

practice (Marsh, Sproul and Tamuz, 2003), evoking meaning and drawing on the experience of teachers and learners alike. Unlearning would involve using processes where deep assumptions and beliefs are challenged (Argyris and Schön, 1974), which would expose common behaviour patterns that feature omission and commission in work routines (AHRQ, 2005). While much guidance has been written on the principles of clinical governance, and Trusts adopt the strategy of Controls Assurance, there remains a skill and knowledge gap for clinicians in relation to learning from adverse incidents which impedes the progress of realising the clinical governance strategy (DOH, 1999; Ham, 2004).

1.4 The risk-*e* project and the studies in this thesis

The risk–*e* project, conducted under the umbrella of a KTP, was funded jointly by the ESRC and the NHS in Wales via the Welsh Risk Pool (WRP). A KTP is a government funded programme that offers the opportunity to industry, to benefit from the 'expertise' of a 'knowledge partner' through a higher education, further education or research institutions. Knowledge transfer is channelled through the placement of suitable high calibre graduates (known as Associates) within a host organisation on a project that can last for up to three years. Associates receive supervision from both the academic 'expert' and the industry 'expert' in order to 'transfer technology' from one to the other. Projects are funded partly by the seventeen government funding organisations that are managed by the Technology Strategy Board and partly by the industrial partner. A formal application is submitted in a competitive tender on a rolling programme (see Appendix 3).

For the risk-*e* project the 'knowledge partner' was represented by the Research Institute for Enhancing Learning (RIEL) and the School of Informatics (SI), University of Wales, Bangor (UWB). The RIEL research portfolio included expertise on learning from adverse incidents, Continuing Professional Development (CPD), human resource development and skills need analysis. SI had a successful record in the design of computer software and the transfer of technology within the field of computer science. The KTP was the first collaboration between RIEL and the SI, and was the first time that either department had been involved with a project partnering the NHS.

The WRP was the industrial Partner to the project. The WRP is a national organisation that had a client base of twenty NHS regional authorities comprising: Health Trusts, Ambulance Trusts & Health Authorities. It functioned as a health risk pooling organisation with two main responsibilities. Firstly a re-imbursement purpose for compensatory claims against Welsh NHS organisations, including claims for clinical negligence, staff injury and other general risk. Secondly, a regulatory purpose to promote and maintain high quality risk management using audit to measure compliance with WRP standards.

The risk-*e* project had projected outcomes that included an accredited risk management programme incorporating a 'blended' traditional (face to face) and virtual (e-learning) delivery. The latter was an attempt to overcome barriers of access to education caused by workload and rural location of many students in the NHS in Wales (Jones, Britain and West, 2000). It was hoped that if learning could be accessed during work time, during evenings and weekends, staff would be able to maximise on their learning opportunities. The WRP were currently providing education and training in risk management to their NHS clients using external consultants; this proved costly and was fragmented in terms of developing a recognised cadre of risk management experts. Also, while the WRP had developed a good relationship with consultants to provide training, the training itself had not been quality assured by an educational institution and any knowledge about the impact of existing training provision on practice was not known. The project involved the employment of two KTP 'Associates' who would work on an inter-linking programme involving Associate One (health scientist) and Associate Two (computer scientist) in the development of University accredited education and training in healthcare risk management.

Action Research (AR) (Lewin, 1947 I) was chosen as the overarching research methodology for the thesis and the risk-*e* project as it was deemed to help practitioners make sense of problems encountered in practice and through collaborative working achieve shared goals (Lewin, 1946). AR also had the potential to ensure maximum impact from activities due to inherent 'change agent' facets (Lewin, 1952; Berger and Luckmann, 1966; Hartley, Benington and Binns, 1997). As an effective route to knowledge development AR also made clear the process of

enquiry (McNiff, Lomax and Whitehead, 1998), which was essential in building a knowledge base about how staff were learning from adverse incidents and what was happening in risk management practice. AR forms the foundation of many approaches to organisational change and in a healthcare setting it had been used successfully in a variety of change programmes (Iles and Sutherland, 2001). For the studies within the thesis the AR methodology was augmented with Argyris and Schön's (1978) Action Science (AS), which made possible the seeking out of 'espoused theories from theories in use' (Argyris and Schön, 1978). Theories and practice relating to Organisational Learning (OL) (Senge, *et al,* 1995) were drawn on to give a 'systems' perspective of what was happening across the NHS. Frame theories (Goffman, 1974) were incorporated so as to determine and influence the fields in which risk-*e* and student/participants operated. For the risk-*e* project Action Learning (AL) (Revens, 1982) was used to aid curriculum development and teaching practice (Schön, 1983, 1991).

1.5 Conceptual framework for the thesis

The conceptual framework for this thesis (see Figure 1) is based on the broad ideas and principles taken from relevant fields of enquiry that pertain to deep approaches of individual and organisational learning. As a construction of personal and professional knowledge (Guba and Lincoln, 1989) it sensitised my focus to notice particular occurrences in the phenomena under study. The situation under scrutiny was the increasing injury and distress caused by adverse incidents to NHS patients and staff (*Organisation with a Memory*, 2000) and cost to the NHS resources as a whole. The emerging hypothesis was that this situation could be addressed if ways were found for NHS staff to learn from adverse incidents. The guiding principles were to explore how pedagogy may help us to understand how individuals and organisations were learning from adverse incidents.

As a reference point the conceptual framework helped to locate research questions from contemporary theories about learning; these include those associated with approaches to learning. At an individual level approaches to learning include the deep and surface approaches (Marton and Saljö, 1976; Biggs, 1987) that students adopt in order to pass exams. Adult learners generally are deemed to be 'deep learners' (Knowles, 1984; Fontana, 1996; Imel, 1998) as they often come to learning with a

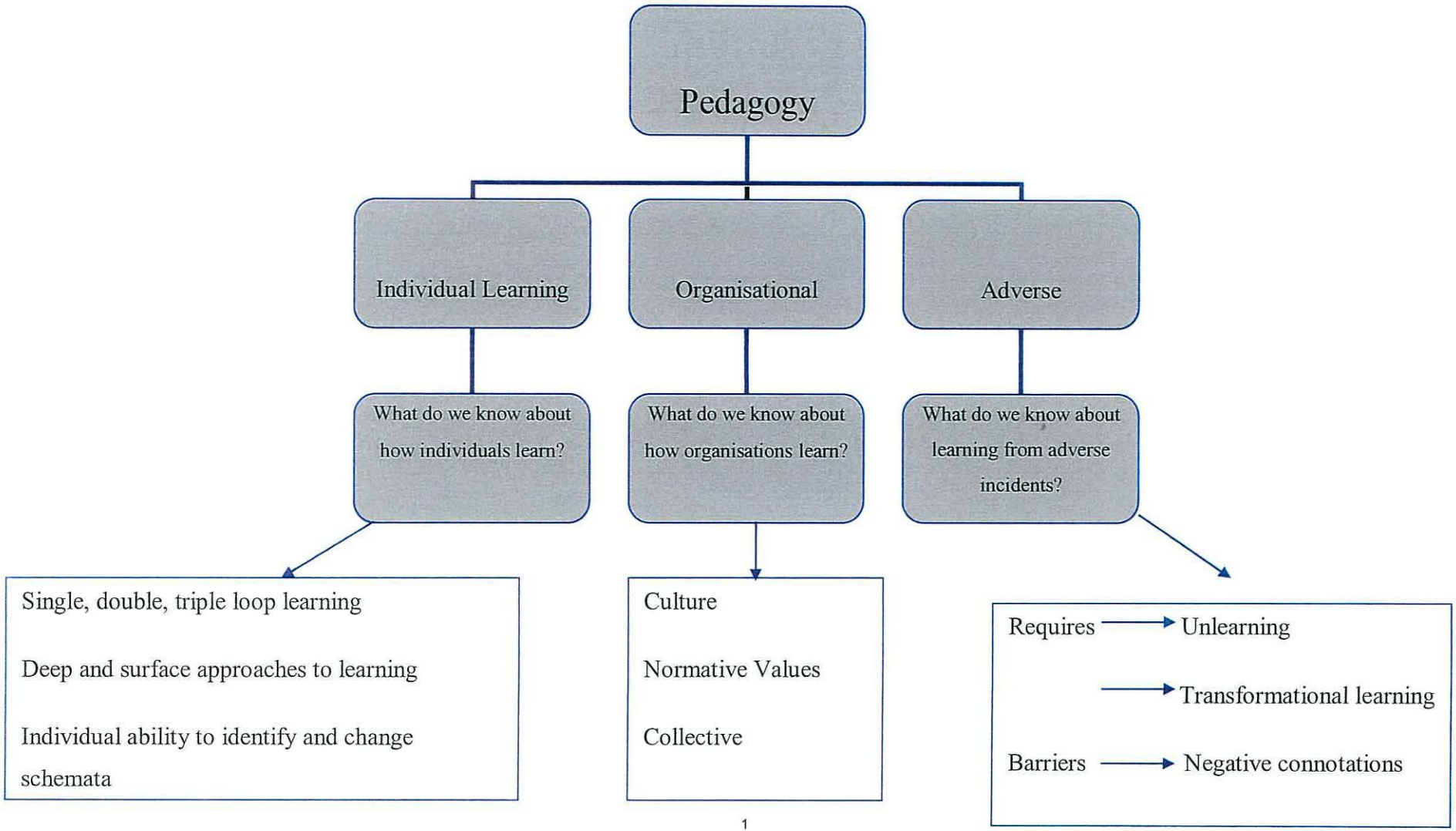
desire to understand rather than accumulate information. This type of learning often involves Transformative Learning (TL)(Meizerow, 1991) which requires the learner to relate learning to direct life experiences and critical reflection through rational discourse (Mezirow, 1991). TL incorporates *'intuitive, creative, emotional process'* (Grabov, 1997 p.90), it is the opposite of surface or 'rote' learning, which is deemed 'single loop' as there is no requirement to reflect and test existing knowledge and relies mostly on a good memory and regurgitation of facts (Bransford, *et al,* 2000; Squire, 1997). Surface learning requires no real understanding and often results in loss of knowledge soon after acquisition due to memory lapse (Mayer, 2002), surface learning also leads humans to repeat errors as there are no opportunities for learners to detect and reflect (Eraut, 1994; Histed, Pathupathy and Miller, 2009) on errors, because of these two factors it is suggested surface learning can be seen as a contributing factor to the occurrence and re-occurrence of adverse incidents. Deep learning however facilitates 'unlearning' (Rushmer and Davies, 2004), bringing the learner to *'perspective transformation'* (Mezirow 1991, p. 167) which allows for changes in routineised thinking and practice (Sheaff and Pilgrim, 2006) and stimulates knowledge generation.

Approaches to learning at an organisational level (Nicollini, 2009; Argyris and Schön, 1996; Davies and Nutley, 2000) are influenced by the organisational value (Bourdieu, 1989; Rosenstiel and Koch, 2001) placed on learning, this is often determined by organisational norms and learning culture (Senge, 1990; Vaughn, 1996; Schein, 1993: Helmreich and Merritt, 1998). If an organisation facilitates, recognises and rewards deep learning, then employees will be encouraged to contribute to an organisation's knowledge bank (Von Krogh, Ichijo and Nonaka, 2000) using reflective and transformational processes. Achieving TL within an organisational setting often requires leverage (Meadows, 1991) with which to overcome barriers to learning. In order to encourage and sustain a deep approach to organisational learning, co-creation (Patrick and Dotsika, 2007) and LC's are significantly useful (Senge and Scharmer, 2001) but also require managing to ensure sustainability (Li, *et al,* 2009). Organisational learning is dependent on a flow of learning (Senge, 1990; Anderson, Kodate and Dodds, 2010) and knowledge generation that is held in systems which contributes to the primacy of the whole (Senge, 1990). With regards to learning from adverse incidents, individual schemata/frames constructed from experience, the nature

of what is learned, the context in which it was learned and the system that supports and values learning are all important variables in determining the flow and knowledge wealth in an organisation (Bransford, *et al,* 2000; Braithwaite, *et al,* 2006; Brown, Collins and Duguid, 1989). On occasion however the cycle of continuous learning is obstructed by a variety of barriers (Elliott, Smith and McGuinness, 2000) which influence how people learn, in the context of learning from adverse incidents barriers often relate to the learning culture (Handy, 1995; Helmreich and Merritt 1998; Koffman and Senge, 2001). With regard to organisational learning from adverse incidents in the NHS, blame cultures are often the cause of poor learning outcomes (Organisation with a Memory 2000; Lipshitz, 1993; Brennan, *et al,* 1991; Bhatia, *et al,* 2003); they create defensive routines (Elliott, Smith and McGuinness, 2000) and remove the opportunity for de-briefing and shared learning. This means that knowledge and insight gained from experiencing an adverse incident often remains of the single loop variety (Argyris and Schön, 1978), remaining with the individual and causing a loss of knowledge to the organisation as a whole (Singer and Edmondson, 2006). In order to overcome these barriers organisations need to provide safe learning environments so employees can be open to dialogue and experiential learning (Fazey and Marton, 2002; Kolb, 1984), and question *'cultural norms and prescriptive rules'* (Mathews and Thomas, 2006 p. 186) associated with organisational learning from adverse incidents. Adopting a pluralist approach to knowledge construction and OL (Jackson, 2003) may also bring the employee to an appreciation that an individual understanding of an adverse incident may not be the same or even similar to another's.

As well as directing attention to pertinent literature the conceptual framework complemented the underpinning research methodology which incorporated methodologies and methods known to facilitate and support individual and organisational learning (Lewin, 1947 I and II, 1952; Argyris and Schön, 1978; Park, 2001; Pasmore, 2001).This is turn informed the decision to use of qualitative data collection methods to capture rich and meaningful sociohistorically constructed data (Guba and Lincoln, 1989); and the use of interpretive data analysis (Eisener, 1991;Thomas, 2004, Becker and Geer, 1982) which was guided by a process of identifying individual frames (Goffman, 1974; Palmer and Dunford, 1996), espoused theories and those in use (Argyris and Schön, 1978).

Figure1. Conceptual framework: the science of pedagogy in relation to individual and organisational learning from adverse incidents



The combination of these methodologies and methods helped to generate new theories of how we learn about and from adverse incidents, and structured the research activities for the risk-*e* project. These new theories and insights into practice were then used to inform the content and design of learning programmes and ultimately enabled an understanding of why adverse incidents re-occur in organisations that are deemed 'learning'.

1.6 Summary

Addressing the problems associated with adverse incidents is an international concern, the UK is no worse than the rest of the international community and has made significant progress towards patient safety but there are many opportunities to improve. While some of the beliefs, values and assumptions of NHS staff are seen to hamper learning from adverse incidents some of this could be attended to by inculcating a systems view of adverse incidents. The risk-*e* project was brought about to collaboratively address problems associated with risk management practice, the studies within this thesis were made possible by the risk-*e* project, were complementary to it but were distinct from it. The conceptual framework developed for the PhD directed attention to approaches to learning from adverse incidents, the development of learning cultures, the role of educational leadership in organisational learning from adverse incidents and ultimately to the production of tools that would facilitate individual and organisational learning from adverse incidents.

CHAPTER 2: LITERATURE REVIEW

2 Introduction

The literature reviewed for this chapter is focused on individual and organisational learning from adverse incidents. The review is significant in as much as it explains a complex area of research (Boote and Beile, 2005) and emphasises how pedagogical processes are influenced by the individual *and* the learning environment (Finger and Burgin Brand, 1999). The chapter begins with background material that presents an overview of pedagogues who have made significant contributions to the science of pedagogy, these contributions are related to learning from adverse incidents. The chapter progresses to the emergence of organisational learning and how the NHS has developed 'Learning Organisation' practices. The chapter concludes with a series of research questions pertaining to teaching and learning in relation to individual and organisational learning in the NHS, with particular emphasis placed on learning from adverse incidents in the NHS.

2.1 Search strategy

The literature review process adopted an iterative purposeful method (Lincoln and Guba 1985; Lewis, Perry and Murata, 2006) that closely aligns to the thesis methodology, this located significant search episodes in the planning and reconnaissance phase of the Action Research (AR) (Lewin, 1947 (I and II) cycles used in the thesis studies. Educational research is acknowledged to be particularly difficult because of contextual factors (Berliner, 2002; Boote and Beile, 2005) which may bring the potential for the researcher to lose focus, by adopting the chosen method the literature was guided by each of the AR cycles and incorporated within an identifiable structure.

The search strategy incorporated the scrutinising of grey material such as government policies and reports, and included media stories in order to ascertain how adverse incidents are presented to the public at large; these were accessed from the government web sites of the Department of Health, Welsh Assembly Government, Institute of Health Improvement, National Patient Safety Agency. A wider search included research material from the specialist discussion forums

rootcauseconference.com and systemsthinkingworld.com. Academic research studies and materials were accessed via Medline, CINAHL, ASSIA, Intute, JISCmail, various newspaper archives, ERIC, CSA (health safety, social sciences, arts and humanities) LAWTEL,LEXIS, Research into Higher Education Abstracts, RCN and ISI Web of Knowledge. The search strategy used the following key words and phrases, individual learning, adaptive learning, transformational learning, barriers to learning, un-learning, learning quality, value of learning, organisational learning, learning systems, assumptions, learning communities, collaborative learning, learning culture, blame culture, learning outcomes, learning impact, learning taxonomies, learning assessment, learning elites, learning leadership, adverse incident, critical incident, expert/novice, frames, schemata, praxis, governance and learning, e-learning. The material read and cited is broad, the focus however for all material centres on how individuals and organisations learn from adverse incidents in the NHS. Reviewing the literature commenced prior to and continued during each of the research studies, this meant that new material was incorporated over time and ensured studies were based on contemporary knowledge in relation to learning from adverse incidents. As the teleological view of education is subjective, this review is informed by educationalists and learners who believe the purpose of education is to liberate, to empower, to find solutions to real world problems (Ramsden, 1992). It is the basis for the conceptual framework that asks empirical questions about knowledge creation and knowledge extinction in and around adverse incidents in the NHS.

2.2 The development of knowledge

'The wise man is he who knows he knows nothing'

Socrates 399 BC[1]

The word education is derived from the Latin *educare* (to raise or bring up) or *educere* (to lead out or lead forth). To be an educator is to be a pedagogue, a teacher,

[1] The quote is a loose paraphrase of a portion of Plato's "Apology", in which Socrates questions the wisdom of a person who is reputed to be wise. 'So I left him, saying to myself, as I went away: Well, although I do not suppose that either of us knows anything really beautiful and good, I am better off than he is - for he knows nothing, and thinks that he knows. I neither know nor think that I know."

to be someone responsible for the 'raising up' of others, achieved through the experience of learning. Teaching is an art in as much as it requires the skill of the artist, and a science in as much as teaching practice is evidence based (Watkins and Mortimore, 1999). Learning is a sophisticated process the outcomes of which are influenced by the learner, the teacher and the environment (Säljö, 1979; Marton and Booth, 1997). Throughout history pedagogues have (and still do) challenge the status quo of the body politic and of society, in common they were (and still are) passionate about understanding and learning. Pedagogy, and pedagogical method, has altered over time, shaping and being shaped by what society found popular, acceptable and useful. Knowledge (or knowing) became understood as something that is arrived at through a process of reasoning, experiencing and searching for a truth that fits with our individual (personal) habitus (Bourdieu, 1977).

The understanding of knowledge and knowledge creation were important philosophical quests for Plato who was an exponent of thinking and reasoning; and Aristotle (384 – 322 BC) who was a champion of action and sensing. Aristotle saw that reason facilitated a higher form of learning and that habit (the doing) instilled in humans a desired behaviour (Aristotle, 1976).Actions should be deliberate and stem from a fixed disposition of character, not out of prevailing forces that might enable us to win favour or act out of fear such as those identified through Skinner's (1953) 'Operant Conditioning'. This is relevant today when learning from adverse incidents because the actual process of 'doing' in health care provision and the environment in which it is done creates experiential knowledge borne through the reflective sense making of one's reality. While some pedagogues considered humans to be a 'tabula rasa' (Power, 1991) research has shown this to be far from true; classified as '*privileged domains'* (Bransford, *et al,* 2000) we are born with a predisposition to gain knowledge, to understand and make sense of the world.

This natural motivation is a useful springboard with which to locate the 'truth', of what happened in the antecedence and episode of an adverse incident. Reflection is key to understanding and truth finding (Argyris and Schön, 1978; Grimes, 1995; Senge and Scharmer, 2001; Ramsden, 1992). The 'truth', subjectively experienced by the individual, gains credibility through a shared experience and understanding (Light and Cox, 2001) of the same event, this is important when trying to ascertain the

cause(s) of an adverse incident (NPSA, 2004). A shared understanding of an event is defined through norms (values) that set out the criteria or conditions of what constitutes knowledge. Norms are both intellectual and cultural (Kolb, 1984), are based on an objective truth and may be assessable through a taxonomy of learning outcomes (Bloom, 1956). With regard to adverse incidents, intellectual norms inform us that 'adverse incidents will always happen' (NPSA, 2005 (a); Reason, 1990; Vincent, 2001 a) and cultural norms include those of routineised practice, blame and professional alliances (Eraut, 1994; 2001, Firth- Cozens, 2001).

2.2.1 The development of pedagogical practice

Many of today's teaching methods are developed from the work of luminaries such as St Augustine, (1998) who expounded the model of teacher as learner, later espoused by Knowles (1984), Biggs (1987), Mezirow, (1991) and Prosser and Trigwell (1999). Socrates advocated questioning, self reflection and the search for truth, major exponents of reflective practice include Vygotsky (1978) who thought it fundamental to teaching in order to help students problem solve and Dewey, who saw education in its broadest sense as the very life blood that informed continuity of social groups. Plato's Academy used discussion and questioning as the basis for understanding and is often used in action inquiry today (Revens, 1982). Student centred learning, shared learning, constructive feedback, and creative thinking informed the practice of Alcott (1832 -1888), all of which now form part of the constructivist approach to pedagogical practice. The call for education today to focus on the development of creative thinking (see the information paper by SEED 2006) similarly is not a new one; Butler (1970) complained that Universities were factories of mediocrity in 1872. Creative thinking, which is often realised through forms of play or acting out, was promoted by Froebel (1752 – 1852) who used a 'systems' (Senge, *et al,* 1995) approach to education, and in so doing, demonstrated how each aspect (or part) affected the 'whole' experience of learning. This is echoed by Dewey (1916) whose system of learning incorporated a connectedness with life outside of the classroom. Creative thinking is an important aspect of problem solving (Scharmer, 2008) and of considerable significance when trying to find ways in which to think proactively about preventing adverse incidents (Culvenor, 1997 (a) and (b)).

Habermas (1974) developed an epistemological social theory based on principles of equality, he used reflective practice to become self knowing and self aware and recognised that power often lay in the disempowering of others. Habermas also supported the use of action research because of the inherent emancipatory processes that enable the voice of participants to be heard in context. His critical pedagogy, reflected in the work of Friere, espouses collaboration and co-operation through a community related, discussion based, autonomous, experiential, negotiated learning. The emancipatory possibilities that education as a mechanism for social interaction has to offer was explored by Dewey and published in his seminal work, *Democracy and Education: An Introduction to the Philosophy of Education* (1916). In this book Dewey comments on social groups that espouse equality but result in social inequality and disempowerment as people simply use each other to get results and often without the permission of those involved (Dewey, 1916). Disempowering others to gain power is a common feature of social life and often obstructs the construction of a collaborative no blame learning environment. Blaming people for errors falls into the realm of conditioned behaviour and stimulus response type learning developed by Thorndike (1911) and Skinner (1953). Skinner was critical of education built on a system of praise and punishment, stating that punishment is based on the assumption that not wanted behaviour will diminish. Frequently observed changes in behaviour are a result in avoidance of punishment rather than learning as the result of understanding or wanting to do the right thing (Eraut, 1994), not good news if you are trying to prevent the recurrence of adverse incidents. Skinner knew that while we like to think that we are 'free' to make choices and to learn the reality is altogether different, stating '*scientific analysis reveals unsuspected controlling relations between behaviour and environment*' (Skinner, 1972 p. 17) which often leads to defensive routines. Bandura's social learning theory (1977, a and b) and social cognitive theory (1985), which feature role modelling, symbolising of experience and personal efficacy as integral to human learning, is fundamentally important in understanding how as adults our learning continues to be influenced by the contextual environment in which we learn. This is because learning that occurs as a function of observing, includes retaining and replicating behaviour observed in others; so that a particular learning culture, be it productive or non productive, is perpetuated by the dominating system and operators within it who reproduce their social fields (Lewin, 1947 (I and II, 1953).

As actors within these mini societies individuals use cultural capital (or value) (Bourdieu, 1989) associated with competitive ambition and fear of failure to either control or share power, this habitus (Bourdieu, 1989) acquired at an early age in school is the basis for all subsequent experience through the process of restructuring (Bourdieu and Wacquant, 1992). Basically this means that the classroom as a mini society, is restructured and perpetuated in other environments and is shaped by social fields. Bourdieu (1977) stated that professional groups or classes use cultural capital as a social strategy to hold or gain status in society. The ability for individuals to reproduce their social fields came from *habitus* which is the structure and structuring of truths and beliefs we fight for and help us to understand the world. Social strategies are adopted by individuals to make beliefs come true and in so doing perpetuate behaviour and systems. Social fields are made up of individuals who construct symbols of 'value' and then compete for them (Bourdieu, 1989). Dewey sheds light on what makes up the social field (Bourdieu, 1989) inherent in organisational learning, by recognising that dominant social actors perpetuate a system that influences the environment of learning, so that learning becomes subject to the consideration and approval of the dominant group (Dewey, 1916).Dewey is relevant today in the context of organisational learning as he describes the sort of social engineering (Bourdieu, 1989) that exists in workplace culture that can either support or become a barrier to individual and organisational learning from adverse incidents.

2.2.2 The learning process

Examining the learning process illuminates understanding of how individuals learn from adverse incidents, learning is influenced by the human brain, the environment and the appropriateness and quality of the learning experience (Bransford, *et al* 2000; Ramsden, 1992; Skinner, 1972; Miller, 2005).Both the quality and the quantity of information the brain is exposed to is reflected in the structures of the brain (Bransford, *et al,* 2000) with different parts of the brain structured to perform particular sense making functions; for example stimulus from the ears/eyes travels to the thalamus (which receives sensory stimulus) which then travels across a single synapse to the amygdala (the emotional specialist that gauges the significance of events and stores personal memories), a second signal travels to the neocortex (specialist in perception, comprehension, reason, gives feeling to thought and vice versa). The external stimulus is thus 'made sense of' and stored in memory in various

parts of the brain (declarative memory is stored in the hippocampus and systems related to it and non declarative memory is stored in neostriatum) for future reference (Goldman, 1996; Squire, 1997). The physical ability of the brain is augmented by the mind's cognitive ability to impose structure (schemas, constructs, mental models, memory, recognition, patterns, relationships, hierarchy, lateral and creative thought) through a process of 'clustering or 'chunking' (Miller, 1956) so that 'sense' is made from experience. Personal knowledge is created through interaction with social and cultural environments, through development of mental schema of inner dialogue, learning from mistakes and problem solving through support and guidance (Vygotsky, 1978; Feden and Vogel, 1993). Knowledge creation is built on prior knowledge and shared understandings (Tsoukas, 1994) and in order to construct knowledge, our brains develop mental schemas that are context specific (Taylor, 1985; Prosser and Trigwell, 1999).The processes that enable knowledge production are magnified when performed as a collective (as in organisations) and identified in explicit forms when knowledge becomes part of learning programmes (Carroll and Edmondson, 2002).

Knowledge can be roughly divided into knowing what and knowing how (Eraut, 1994). Epistemological issues regarding what constitutes health practitioner knowledge, is not just about the dichotomy of propositional and practical knowledge but also the validity or truthfulness of that knowledge (Eraut, 1994). This is because an area of professional knowledge that is often hard to capture (and therefore validate) is tacit knowledge (Schön, 1983, 1991); much remains hidden but may be rendered accessible (Eraut, 1994) through individual and collective challenging of assumptions (Argyris and Schön, 1978) and reflective practice. This surfaced knowledge may then be formalised in rules, procedures and clinical guidelines (for example aseptic technique). Tacit knowledge borne of adverse incidents however remains elusive due to the nature in which it is learned and the learning culture in which it might be sourced (Balla, 1990 (a); 1990 (b); Whelan 1988). Problems associated with knowing what revolve around surface learning and teaching approaches (Marton and Ramsden, 1988), problems associated with knowing how revolve around the tacit nature of knowledge and the capture of it (Polyanyi, 1958, Boreham, 1977).

Knowledge is 'professionalised' in so much as that professions have an identifiable specialist subject base in which knowledge is codified (often within higher education),

the majority of propositional knowledge (knowing that) is vested in University departments and practical application (knowing how) is to be found in organisations (Eraut, 1994). Knowledge sharing and development relationships do exist, an example of this can be found between the NHS and higher education in lecturer/practitioner roles. Learning transfer was explored by Michael Eraut (1994) in his discussion of the frame theories of learning by Schmidt, Norman and Boshuizen (1990); in this discussion Eraut distinguishes excellence in a particular 'domain' (such as an orthopaedic consultant surgeon may possess) as not something that is transferable to another 'domain' (such as a gastroenterology consultant surgeon) at the same level. The result is that either would only operate at no better than average in each other's speciality, changing this would require a process that deroutinised and then reconstructed performance to incorporate new learning (Eraut, 1994). This deroutinisation requires not only the ability to reflect on performance but also to be reflexive about the current state of affairs, in this reflexive state deconstruction can be achieved quickly through meta-cognitive abilities that enable learning and knowledge development through rapid cognitive processes (Eraut, 1994). Eraut's work on speed and mode of cognition is presented in Table One.

	Speed		
Analysis	Instant Recognition	Rapid Interpretation	Deliberative Analysis
Decision	Instant Response	Rapid Decisions	Deliberative Decisions
Action	Routinised Unreflective Outcome	Action Monitored by Reflection	Action Following a Period of Deliberation

Table 1.The link between speed and the mode of cognition, (Michael Eraut, 1994 p. 149)

Arguably, reflexive learning and decision making is often arrived at after years of situational learning experiences (Dreyfus and Dreyfus, 1980; Benner, 1984; Eraut

1994), often guided by an intuition that 'something is wrong' (Benner, 1984) and more commonly known as 'reflection in action' (Shön, 1987). The 'figuring out' processes involved in reflexive/reflective learning enables humans to both distinguish events and patterns of events and it is through this creative ability that discernment for innovation arises (Socrates, 399; Eraut, 1994; Steier, 1991; Bransford, *et al*, 2000).

2.2.3 Teaching practice

Teaching used to rely on methods of rote learning and practice and/or repetition (Watson and Rayner, 1920; Swanwick, 2008) more contemporary practice however emphasises that teachers need to structure learning experiences, allow for the prior knowledge of students, consider the learning context in which learning will both take place and be used, and harness student motivation to learn (Knowles, 1984; Prosser and Trigwell, 1999). In order to reduce adverse incidents occurring (and recurring) NHS educators/trainers also need to grasp that how we learn through the structuring of knowledge and the shifts we make between being 'novice' and 'expert' learners (with regard to comprehending propositional knowledge and/or developing mental schemas for learning) is as important as the content being delivered (Eraut, 1994). Research has identified a significant factor of expert learning is the ability to recognise meaningful patterns of information (Bransford, *et al,* 2000) and suggests positive effects on student learning can be achieved where the learning experience has included learning how we learn. Similar to the ability to think in systems (Senge, *et al,* 1995), expert learners relate knowledge to a 'bigger picture', an overall theme or the big message as to what is being learnt. Expert learners have an ability to organise knowledge (remember, co-ordinate, locate, relate) in a way that is sophisticated and efficient. Novice learners tend to adopt surface approaches to learning especially when the volume of material presented to them is *'a mile wide and an inch deep'* (Schmidt, , Norman and Boshuisen, 1990); this implies that novice learners instead of recalling knowledge, surface recall meaningless information that is disconnected from prior learning (Bransford, *et al* 2000). Novice learners who adopt a 'surface learning approach' (Marton and Säljö 1976, 1984) are simply 'accommodating' (storing) information that is quickly lost from memory. Accommodating and assimilating knowledge is different from apprehension and comprehension (Kolb, 1984), apprehension refers to the immediacy of the learning environment and is considered

as tacit knowing perhaps more associated with expert decision making (Benner, 1984), comprehension requires reflection and analysis and is more akin to action learning (Pedlar, 1997). Expert learners are deemed to be 'adaptive learners' whose meta cognition recognises the limits of their own knowledge/understanding so know when to stop, ask questions and/or alter current practices (Bransford, *et al,* 2000). Adaptive learners also consider whether the problem as presented is the best place to begin and will consider the situation holistically; non adaptive learning is routineised and prescriptive and has inherent dangers of learners constructing a coherent representation of information that is incongruent with reality, failing to understand or recognise that they have not understood. One way to test whether learners are engaged in adaptive learning is to engage them in Problem Based Learning (PBL). PBL allows learners to test theories against concrete complex problems, balancing specific examples with general principles being the most productive (Bransford, *et al,* 2000). PBL is common in medical and legal clinical education (Williams, 1992; Barrows, 1985; Grimes, 1995).

For knowledge to be assimilated or added to an existing stock of knowledge the content and method of learning needs to be perceived by the learner as a reflective personally meaningful experience, this means undertaking a 'deep' approach to teaching and learning (Entwistle and Ramsden, 1983; Marton and Säljö, 1976; 1984, Marton and Ramsden, 1988; Entwistle, 1981, 1988; Biggs, 1987, 1988). Kolb (1984) identified that the key to learning is to ensure an equal tension between assimilation and accommodation, without which humans will either imitate and replicate what is present in the environment or impose concepts *'without regard to environmental realities'* (Kolb, 1984 p. 23). Säljö

The approach to learning (Marton and Säljö, 1976, 1984) undertaken by learners is heavily influenced by the methods by which they are taught. Overloaded content and rote learning that bears little relation to real situations will result in surface learning approaches and poor learning outcomes, conversely manageable learning content that is applied to real situations will result in rich learning outcomes due to deep learning approaches (Ramsden, 1992).The way in which learning is assessed (Ramsden, 1992,) and whether students are learning to understand or learning with a performance goal (Kong and Hau, 1995) will affect the learning approach taken and the outcome of that

approach. If students believe that in order to pass exams they need to demonstrate a form of learning that requires only that they memorise facts and figures they will adopt a surface approach (Entwistle, 1988) and manage their learning so little or no underlying understanding of knowledge takes place. If however learners believe that in order to pass exams they need to exhibit a level of change in understanding that demonstrates sense-making and critical thinking (Brookfield, 1987) learners will adopt a deep approach to learning (Ramsden. 1992).

The approach learners (and teachers) take to learning is dependent on previous learning experiences, mental schemas, disposition to learning and to the environment which includes the habitus of the social field (Bourdieu, 1989). The social field for many is an inherent aspect of the organisation in which they work; this is discussed below under the theme of Organisational Learning.

2.3 Organisational Learning

The development of what is now termed 'Organisational Learning' (OL) has a long history and is based on the premise that value is placed on learning in collectives or communities (Senge, *et al,* 1995; Senge and Scharmer 2001). OL revolves around social interaction (intermental) which shapes learning (Vgotsky, 1978) and can become the tool for empowerment and change (Lewin, 1946, 1952; Freire, 1970). Distinct from compulsory or post-compulsory classroom learning OL involves a situated learning particular to the organisation involved. The founding father status of OL is credited to Lewin who developed Action Research as a vehicle for social action (Lewin, 1946). AR was further developed by Argyris, Putnam and McLain Smith (1985) who incorporated the term Action Science (AS), AR and AS became part of codified knowledge in the Massachusetts Institute of Technology (MIT) under the OL guru and Director of MIT Peter Senge. OL now incorporates amongst others the socio technical systems approach of Trist (1993 b), the main application of this is the 'autonomous work group' or 'self-managed team' which is now part of Senge, et al's 'Fifth Discipline' (Senge, *et al,* 1995); the work of Arie de Geus (1997), who identified a major component of organisational survival is to incorporate that we learn as a community of humans, and, the prominent organisational psychologist/sociologist Ed Schein who developed Lewin's work on AR and T-groups (Schein, 1991). Schein identified three levels within organisational culture that influences OL, the first and

most visible is represented by behaviour and artefacts, the second relates to values and the third (closely related to Argyris and Schön 's (1978) "theories-in-use") is the least visible and is about basic assumptions. These assumptions are deep rooted and require investigation if one is to *'really understand what is going on and why'* (Schein, 1985, p. 21). Investigation of and the challenging of assumptions stems from the work of Argyris and Schön (1978) and is deemed part of the process of the '*detection and correction of error*s' (Argyris, 1980 p.291) that contributes to OL. Learning Organisation (LO) status is itself not something that is a fixed state but is an ideal to work towards (Smith, 2001, b), enabled by the adoption of Organisational Learning (OL) practices and processes.

Senge identified five key disciplines for OL that demonstrate the type of adaptive learning organisations need in order to change and survive (Bransford, *et al,* 2000), these are personal mastery; mental models, shared vision, team learning and systems thinking (Senge, 1990). Systems thinking is considered the linchpin with which to hold the five disciplines together; it is through this that the individual in an organisation begins to comprehend the 'whole' and understand the connectedness of their and others actions. Senge underlines the importance of maintaining a long term view on feedback within a given system (Lewin, 1946, 1952), failure to do this means mistakes that are made or opportunities that are lost will come back to haunt you (Senge,1990; Culvenor, 1997 (b), 2006). While acknowledging the part individual and shared learning has on organisational learning, Eraut (1994) also places significant emphasis on the 'roots in daily activities' that make up organisational knowledge, distinguishing this from individual or group knowledge Eraut states this is rarely challenged and any effort towards change comes to be *'regarded as a subversive activity'* (Eraut, 1994 p.238).

For individual learning to manifest as a feature of OL there is a requirement that it is linked to the model of OL in operation (Clarke and Wilcockson, 2001). For learning to be transformative and generative within the organisation it needs to be more than the single loop type which stays 'with the individual' and does not move to the wider organisation, double loop learning and triple loop learning have wider organisational implications as they result in a *'a form of reflexivity for the betterment of the organisation'* (Sheaff and Pilgrim, 2006 p. 5). Triple loop learning requires

developing the ability to share knowledge in such a way that others that belong to a different area of expertise or organisational sector are able understand (Oborn, Barrett and Racko, 2010). What this implies is that in order for knowledge not to remain enclosed in a particular domain, knowledge 'owners' will require appropriate knowledge transfer teaching and learning skills which means learning about learning (Davies and Nutely, 2000).

One of the best environments in which to develop meta learning skills is in the situated context of shared learning (Lewin 1947 I and II; Susman and Trist, 1993; Lave and Wenger, 1991). Shared learning or team learning (Speck, 1996; Light and Cox, 2001), has taken a variety of forms (Li, *et al,* 2009) including those of the Learning Community (LC) (Bate and Robert, 2002), and the Community of Practice (CoP) (Lave and Wenger, 1991). Both of which draw on the same principles of mutual support and collaboration, where it is deemed there is the potential for knowledge to be freely shared, creative solutions to problems found (Bate and Robert, 2002; Barnard, 2008) and learning to be maximised (Carroll and Edmondson, 2002; Light and Cox, 2001). Within these LC's, the narrative of those that populate the LC either reflects and perpetuates the organisational norms that influence organisational learning (Barnard, 2008) or may develop an independent narrative that reflects the *'social, symbolic and political processes'* (Currie and Brown, 2003 p .564) within that LC. Ideally a LC will be populated by those who are open to learning from adverse incidents, in order for this to happen the learning culture of both the wider organisation and the LC should embrace the changes learning brings (Firth-Cozens, 2001) and put aside interpersonal inter-professional conflict (Hart and Hazelgrove, 2001) that often prevents it. The LC has to be collaborative in nature so that OL and performance is enhanced (Bate and Robert, 2002); research suggests that true collaboration depends jointly on a supportive organisational and interpersonal climate that will ensure psychological safety (Tucker, Nembhard and Edmonson, 2005). In the NHS however one of the reasons why patient safety incidents are often not reported and learned from is reputed to be the *'the failure of multidisciplinary enterprises, such as communities of practice'* (Jack, *et al.* 2010 p. 13).

Problems associated with CoP (Hart and Hazelgrove, 2001) such as tensions between personal growth and organisational objectives have presented challenges to CoP management and sustainability (Li, *et al,* 2009).

2.3.1 The NHS and Organisational Learning

The NHS is one of the largest organisations in the world, by 2009 employing 1.7 million people and using a budget of one hundred billion pounds (NHS, Choices, 2009), as a complex healthcare environment it is guided by a conviction of striving for and achieving excellence (*Organisation with a Memory*, 2000) and a professional culture of conflicting accountabilities (Davies and Nutely, 2000). Professional ideals enshrined in Codes of Conduct, assist with self regulation and are considered as evidence (Dimond, 1995; Duff, 1995) of the required legal standard of care (Kennedy, 1998; Mason and McCall Smith, 1994). Professional Codes of Conduct have for many years, required NHS staff to work within their professional competence and to maintain lifelong learning.

Factors that influence OL in the NHS include, politically driven reforms or restructuring (Walshe, 2003) which makes actions short lived and often repeated. Because organisational culture is seen as an emergent social property (French, *et al,* 2009) factors vying to determine the dominant culture within an organisation include public opinion, the media, regulatory frameworks, professional ethics and identity all of which have created *'supraorganisational norms'* (Davies, Nutley and Manion,, 2000 p. 115). Perpetuating common barriers to an effective OL culture and to learning system development in the NHS are, fragmented multiple services, ambiguity across roles and functions, numerous funding, regulatory and governance interfaces and a pervasive culture of perfection at odds with professional territorialism (Harris and Shapiro, 1995). This last has historically been likened to a caste system (Katz, 1969) that vests professional knowledge ultimately to the physician who is seen as the acceptable guardianship of that knowledge (Katz, 1969, French, *et al*, 2009). In addition deep seated *'beliefs and values'* based on *'rivalry and competition'* (Davies, Nutley and Mannion, 2000 p. 113) make OL in the NHS a considerable challenge.

Outside of the NHS OL has for some time been considered part of organisational life, defined by the utilisation of workforce knowledge and skills using structures and

processes (systems) to enhance organisational performance (Dodgson, 1993; Senge, 1990, Senge, *et al,* 1995; Argyris, 1994; Kafman and Senge, 1995), OL is steered by the 'absorptive capacity' (Cohen and Levinthal, 1990) of an organisation to learn. Advances in individual and team learning that contribute to OL in industries such as aviation (Helmreich, 2003), the armed forces and nuclear power (Carroll, and Edmondson 2002) have proven that learning practices and processes may prove to have more effect on OL performance than the complexity of the systems in which they operate (Senge and Sternman, 1992), this has more recently proven to be the case in the NHS (Bate and Robert, 2002).

Importantly for an NHS that is keen to learn from error (*Organisation with a Memory* DoH 2000) these approaches are known (Illes and Sutherland, 2001; Senge, *et al,* 1995; Senge and Scharmer, 2001) to empower individuals to:

- Learn from past mistakes
- Question and share ideas
- Focus on collective learning in an environment of openness and trust
- Become adaptive and dynamic
- Understand the system as a whole

Within the NHS, drivers that influence OL include patients (Crawford, *et al,* 2002; Wise, 2009), leaders (Alimo- Metcalfe and Lawler, 2001), managers (Griffiths, 1983), culture (Helmreich and Merritt, 1998; Mallack, *et al,* 2003), professions (Eraut, 1994), politics (Walshe, 2003), resources (Jack, *et al,* 2010) and the need to innovate (DoH, 2009. The learning gleaned from many adverse events in large complex systems (Laming, 2003; Cullen, 2001) outwith the NHS have and are being applied to the NHS (Reason, Carthey and Leval, 2001). Learning transfer includes recognition of OL processes and principles contribution to 'High Reliability Organisations' (Vincent, *et al,* 2000; Firth-Cozens, 2001). Enabling factors embedded with OL processes include, individual and shared learning, positive learning culture, leadership, organisational mindfullness (Levinathal and Rerup, 2006), cognitive ability (Senge and Sternman, 1992; Weick and Sutcliffe, 2007) and importantly for the NHS realising that blaming individuals and refusing to acknowledge error actively contributes to error causation as trust is eroded (Carroll and Edmondson, 2002). In

order to transfer what is known outside of the NHS into the NHS, OL practitioners should ensure the '*distinctive characteristics*' (Currie and Brown, 2003 p. 568) of the public sector are acknowledged and challenged. Chief of these are the interests of policy makers and clinicians who may impede OL through a disinclination to acknowledge failure and challenge existing organisational norms (Sheaff and Pilgrim, 2006).

At the heart of OL is accessing individual tacit knowledge (Argote and Ingram, 2000), though widely acknowledged that this is difficult to achieve in practice (Szulanski, 2000) the high value placed on this by the private sector (Bate and Robert, 2002) has led to the development of team learning practices in NHS OL. This has taken the form of learning 'collaboratives', although it has been recognised (Nutley and Davies, 2001) that OL in the NHS needs to be more than a collection of individuals (Senge, *et al,* 1995). Ensuring the employment of a knowledgeable workforce is a facet of OL (Nonaka, 1991; Senge, *et al,* 1995; Lipshitz, Popper and Friedman, 2002); this is also a prime function of the NHS (*NHS Plan*, 2000) and is delivered through a variety of Continuing Professional Development (CPD) opportunities. CPD activities in the NHS have however been criticised for not being part of a central organisational function, which as a result are often reduced as a first method of budgetary reforms (Davies and Nutely, 2000) thereby reducing the workforce ability to learn. This is in contrast to objectives set out in the *NHS Plan* (DOH, 2000) which brought to the fore the need to capture NHS 'know what' and 'know how' (Bate and Robert, 2002). The *NHS Plan* requires NHS organisations to adopt both a collaborative learning methodology and the Knowledge Management (KM) methods developed by the Institute for Healthcare Improvement's (IHI). IHI KM methods include face to face and virtual *'cross boundary knowledge transactions'* (Bate and Robert, 2002 p.6), these methods supported KM developments that saw a move from measurement to process models. Central to developments were IT solutions and '*academic models focusing on human factors and transactional processes'* (French, *et al,* 2009 p. 4), all of which would be significant factors in supporting staff to learn from adverse incidents.

In many respects the evidence highlights how OL learning initiatives in the NHS place an importance on the continuous improvement of patient care (Clarke and

Wilcockson, 2001). A lack of success in OL in the NHS (French, *et al*, 2009) has been attributed to departmental silos, professional territorialism and barriers to horizontal knowledge flow across NHS organisations, '*it could be argued that the NHS is not failing to learn since some improvements have been made - it just is not learning fast enough'* (Anderson, Kodate and Dodds, 2010 p.2). One factor that may support OL progress in the NHS is associated with changing the system that supports learning (Berwick, 1996) and introducing repeated learning cycles (Koeck, 1998). Key to achieving this would be the introduction of change agents who are able to demonstrate legitimacy and ability to engage with a wide range of stakeholders (Currie, *et al,* 2010). For the organisation (the collective) to learn individuals need to be able to challenge and test their own assumptions about what they know and engage with deutero learning so that they begin to understand and influence the learning system itself (Clarke and Wilcockson, 2001; Davies and Nutely, 2000).

2.3.2 Knowledge Management

The literature suggests that a core function of a LO is the pursuit of *'maximising individual competency, open systems thinking, team learning, updating mental models'* and having a *'cohesive vision'* (Sheaff and Pilgrim, 2006 p. 4) which is achievable through effective KM. KM differs to OL (Easterby-Smith and Lyles, 2003) in as much as KM is about using a technical approach to share knowledge to enhance organisational performance (Easterby-Smith and Lyles 2003). Government policies such as *An Organisation with a Memory* (DoH 2000) stated KM systems should focus on the collection and sharing of tacit knowledge and learning, a mechanism for which was simultaneously identified in *A Health Service of all the Talents* (DoH 2000) as through the medium of IT.

As part of the NHS KM strategy, the *NHS Plan* (2000) suggested e-learning would significantly contribute to a competent educated workforce, some of which was to be delivered through the superseded National Health Service University (NHSU). While there is evidence of learner satisfaction using e-learning in the health context (Curran and Fleet, 2005; Cobb 2004; Wakefield, *et al,* 2008), barriers that have been identified (Childs, *et al,* 2005; Clark, 2002; Cobb 2004) to achieving successful e-learning implementation include resources (time, equipment, knowledge), lack of consultation with clinical 'experts' regarding e-learning content, ability of educators and learners

to use packages, and a lack of integrated e-learning delivery with most programmes seen as additional (Childs, *et al,* 2005; Clarke, *et al,* 2005). The loss in not achieving the potential e-learning and IT systems have to contribute towards patient safety (Bakkenab, *et al,* 2004; Simpson, 2004, Clarke, *et al,* 2005) is therefore considerable (York Health Economics Forum, 2009). In order for identified problems to be addressed, those designing e-learning programmes should regard access as a particular issue, as learners need flexibility to meet with competing demands put on their time and to allow for progress that aligns with learner ability (Clark, 2002). KM managers also need to ensure compatibility with IT infrastructure systems (Thomas, 1986; Pande and Hart, 1998) and the learning programmes with experiences of the learners themselves (Ouellette, 1999). Availability of tried and tested software may be a problem so where possible a collaboration should be encouraged in both the structure and content of learning modules, learners should also be part of piloting new learning programmes and feeding back into the design development of them (Ouellette, 1999; Billings and Rowles, 2001). While blended learning (a combination of face to face and virtual learning) seems a preferred method (Childs, *et al,* 2005; Cobb, 2004), e-learning design should start with good navigational tools and clarity of content that includes support materials (Ouellette, 1999; Salmon, 2000).

KM in the NHS aligns comfortably to the hierarchical accountability of CG (Wilkinson, Rushmer and Davies, 2004), OL differs slightly by emphasising responsibility and accountability be shared individually and collectively (Finger and Burgin Brand, 1999; Nonaka, 1998). KM is recognised as being able to create and process information and remember using 'top-down' and 'bottom up' approaches (Nonaka, 1991). Recently however the literature has exposed the difficulties of managing knowledge across learning networks due to inconsistent government policy and power differentials (Currie, Finn and Martin, 2008). This may result in KM managers adopting a reductionist approach to achieving KM by focusing their efforts on individuals working more effectively, while this might be not be ideal LO practice (Sheaff and Pilgrim, 2006) it is at least a workable objective.

While OL is involved with pedagogical process, the literature points to an overlap and complementarity between OL and KM, this relates to ensuring knowledge translation and transfer (French, *et al*, 2009) and collective reflective practice as a mechanism for

cross fertilization. Also, both OL and KM acknowledge the influencing contextual factors of society and culture in which knowledge is created (Easterby-Smith and Lyles, 2003).

2.5.3 OL and Clinical governance

Of considerable impact on OL in the NHS was the advent of CG which requires NHS staff to collaboratively ensure practice is evidence based, to manage risk and to learn from error (Scally and Donaldson, 1998; Sheaff and Pilgrim 2006; Garside, 2004). CG is seen as the vehicle of promoting continuous improvement through changing the organisational culture from a '*culture of blame to one of learning so that quality infuses all aspects of the organisation's work*' (Huntington, Gillam and Rosen, 2000 p.679). Major UK government papers (*The New NHS: Modern Dependable* (DoH 1997) and *The New NHS - a First Class Service* (DoH 1998) and policies (*NHS Plan*, 2000) ushered in CG and brought to the fore continuous quality improvement through an integrated quality framework that embraced organisational culture, leadership and the LO (Scally and Donaldson, 1998). The implications for this with regard to learning from adverse incidents meant that final accountability for quality rests initially with a senior clinician and ultimately with Chief Executives (Scally and Donaldson, 1998)

The literature highlights how CG evolved from corporate governance practices in business (McSherry and Pearce, 2002) and was introduced by the Labour Government due to a perceived decline in clinical standards and service provision (Scally and Donaldson, 1998). The notion of quality management in the NHS developed from the work of Juran (1998), Deming (1982) and Crosby (1989), who were influential in quality management initiatives in industrial organisations. Each placed a high value on people and systems that incorporated quality training, emphasised the customer as central to quality improvement, and emphasised top down commitment to quality integrated through an organisation through teamwork. Donabedian (1969) contributed significantly to the theories of quality assurance in the NHS, in particular he defined *'Structure' 'Process'* and *'Outcome'* as distinct entities which were popular in the health service for some time. Quality assurance and systems were numerous but improvements were largely disorganised until regional responsibility for quality was assumed through the auspices of audit (Ham, 2004), the White Paper *'Working for*

Patients' (DH 1989) formally set out clinical audit for doctors to *'improve the quality of patient care'* (Sale, 2000 p.91).

The National Audit Office (2003) established that CG should contain mechanisms by which individuals could learn clinical risk management, audit, adverse incident reporting, be supported through learning networks and be assured of CPD opportunities. CG did not fulfil all of these aims however as ambivalence about the effectiveness of CG often resulted in fragmented take up and continuance with less effective methods (Wallace, *et al,* 2001), CG was also poorly received by some and seen as accountability by surveillance (Checkland, *et al,* 2004).

Of the many synergies between LO processes and CG, Wilkinson, Rushmer and Davies, (2004) highlight approaches in risk avoidance, quality methods, culture, infrastructure support, coherence, and poor performance as significantly similar, and that both LO and CG espouse that learning from error should be a positive experience (Wilkinson, Rushmer and Davies, 2004). Identified divergences in OL and CG amount to a difference in enforced and voluntary take up (Wilkinson, Rushmer and Davies, 2004), it is here where issues or tensions may arise in effective learning. Where CG requires clinicians to maintain CPD the focus is on what is learnt, exponents of OL see an equal importance on how it is learned (Eraut, 1994).

2.3.4 OL and PDSA

The NHS has moved in some way towards a LO ethos by adoption of various performance related models that promote OL. In 2003/4 '*Plan Do Study Act'* (PDSA) was recognised as a successful approach to achieving change within organisations outwith the NHS , it was endorsed and promoted through the Health Foundation in the UK and the Institute of Healthcare Improvement (USA). The World Health Organisation launched the World Alliance for Patient Safety, "*Please, do me no harm*" in 2004, a feature of the launch was the UK Safer Patients Initiative. The Health Foundation sponsored four NHS Trusts in the UK (Conwy and Denbighshire NHS Trust (Wales), Down Lisburn Health and Social Services Trust (Northern Ireland), Luton and Dunstable Hospital NHS Trust (England), and NHS Tayside (Scotland) to work with them and the IHI using PDSA to improve patient safety and close the gap in patient safety systems. The PDSA model used in NHS organisations

today was developed by Langley *et al,* (1992) and known as the 'Model for Improvement', but stems from the original work done by Shewheart (1920's) and Deming (1950's). The Model for Improvement (1992) provides a framework for developing, testing and implementing change to ensure a way in which change is implemented for improvement and not for its own sake which encourages change fatigue (Garside, 2004).

2.3.5 OL and Adverse Incidents in the NHS

The Department of Health publication *An Organisation with a Memory (DoH, 2000)* makes unequivocal the function of learning from adverse incidents lies within an NHS OL system. Acknowledging overall a very high standard of clinical care in the NHS the publication nevertheless pointed out that when failures occurred they were all too familiar:

> *'In some cases almost exactly replicating them. Many could be avoided if only the lessons of experience were properly learned '*
>
> (*Organisation with a Memory,* 2000 p.8)

The report was published after extensive media coverage of a series of high profile tragic events in the NHS; for example the deaths and injuries caused by children's nurse Beverly Allitt (Clothier, 1994, HMSO, 2001), the death of Jonathon Zito at the hands of Christopher Clunis and the murders of patients by G.P Harold Shipman. Although the document offset the 'uncommon' incidence of failure against the vast numbers of patients receiving health care, it made visible the real threat to patient safety and the financial cost to the NHS *'estimated to cost the NHS nearly £1 billion'*(*Organisation with a Memory*, 2000 p. 8). Subsequent inquiries and reports such as the Kennedy report (2001), which examined the deaths surrounding children's heart surgery at the Bristol Royal Infirmary (2001) and the Redfern report (2001) an enquiry into the taking of children's organs in Liverpool Alder Hey Hospital, all stated the majority of NHS staff were hard working, dedicated professionals, and that problems were arising primarily due to *systems failures*. Key failures identified within the system were the lack of a coherent reporting mechanism with which to identify potential problems in order to learn from mistakes, and an insufficient 'quality culture' or learning culture. The *Organisation with a Memory* (2001) report

highlighted the need for uncovering the root cause of problems, the need to challenge core beliefs, values and assumptions that hindered learning, and the need to move away from a blame culture towards a learning culture. The existing OL systems that facilitated learning from adverse incidents were linked to fragmented and inadequate reporting systems (Dineen and Walsh, 1999). In response to these issues the newly created National Patient Safety Agency (NPSA) set out to deliver the aims of the policy *Building a safer NHS for patients (2001)* that would enable staff to learn from error.

Adverse incidents and learning

The use of the terms 'critical incident' and 'adverse incident' is commonly used to describe different things, (Bhatia, *et al,* 2003). Critical incidents have been described as significant enough to warrant the person who experiences them to stop and take stock of what they are and what they mean with regards to current and future practice (Tripp, 1998; Mallack, *et al*, 2003). The Critical Incident Technique (CIT) is a qualitative technique used to uncover beliefs about normative behaviour (Eraut, 1994). CIT was identified by Flanagan in 1954 and is still used in revised form today with varying degrees of success (Kemppainen, 2000). It is a retrospective subjective method (using interview) of accessing factual information regarding an event. The identification of critical incidents was the method by which Benner (1984) collected data in order to classify novice and expert decision making. The distinction between a critical incident and an adverse incident appears to be that *critical incidents* allow for a significant event that has not caused harm or may not cause harm, whereas an *adverse incident* results in harm.

While there are multiple definitions of an adverse incident,(Vincent, Neale and Woloshynowych, 2001), for the purposes of this thesis a definition for the term 'adverse incident' is one taken from the reports *Organisation with a Memory* (2000) and the Medical Device Alerts (2009) which states it as being,

> *An event or omission arising during clinical care and causing physical or psychological injury to a patient;*
>
> (*Organisation with a Memory,* 2000 p.7)

> *'An adverse incident is an event that causes, or has the potential to cause, unexpected or unwanted effects involving the safety of patients, users or other persons.*
>
> (*Medical Defence Alerts,* 2007, 2009 p. 6)

Making this distinction is relevant because the terminology used may instil apprehension and loss of a learning opportunity (Benner, 1984). Benner acknowledged that learning around 'critical incidents' may have negative connotations for those involved and adapted her study accordingly to include significant learning events not necessarily involving a crisis. An explanation for the response she encountered from participants may be because crisis events that are replayed for the purposes of learning may bring with them a sense of guilt and failure (Mcardle, Burns and Ireland, 2003); not least because the practitioner involved is labelled as causing the incident through *'laziness, incompetence, carelessness, inattention or ignorance'* (Mcardle, Burns and Ireland, 2003 p.328).

Adverse incidents and learning cultures

In 2001 Sir George Alberti, President of the Royal College of Physicians, stated the NHS required both a culture change and sympathetic care of the individuals reporting adverse incidents instead of *'error reporting by threats of disciplinary action apparently effective but perhaps not the best approach'* (Alberti, 2001 p. 501). A particularly difficult aspect of the prevailing learning culture around adverse incidents in the NHS is one of *'cultural censorship'* which perversely acknowledges the existence of adverse events but '*simultaneously conceals'* them (Hart and Hazelgrove, 2001 p. 261). Concealment is now understood to be based on considerable evidence which states a generally held view that the system of dealing with adverse incidents is unfair and presents repercussions for those involved which includes '*a fear of losing one's job'* (Firth- Cozens, 2004 p. 56). Fear of unemployment contributes to the learning culture by suggesting that the individual is responsible (Jack, *et al,* 2010). The evidence identifies there are many constraints to the openness required for the reporting and learning from adverse incidents, some of these relate to the physical reporting system(s) within the NHS, others are covert systems for example peer pressure to keep incidents out of the 'public' domain (Eraut, 1994). For health-care practitioners the 'public' domain is critical in two arenas, 'public' as within the

organisation and the general 'public'. Fear of shame (Alberti, 2001; Pearn, Mulroony and Payne, 1998) in either will prevent the reporting of adverse incidents and lose opportunities that are associated with learning from them (Alberti 2001; McArdle, Burns and Ireland, 2003). Shame and blame have become so embedded in learning from adverse incidents (Alberti, 2001; Hart and Hazelgrove, 2001; Jackson, 2001; Helmreich and Merritt, 1998) that it is part of the social architecture within NHS organisations (Singer and Edmondson, 2006). Dewey (1916) recognised that the behaviour of those who fail to foresee the consequences of their actions would learn better how to modify their behaviour through practice and reflection but the tendency to use 'shame, ridicule, disfavour, rebuke and punishment' as a part of the learning process, was often too great. Early experiences of learning in an environment where failure is often punished may subsequently be reinforced through the learning culture we come to as adults (Prosser and Trigwell, 1999); this makes unlearning (Rushmer and Davies, 2004) particularly challenging especially as there are little rewards for those who fail (Bransford, *et al,* 2000) when all of the perceived rewards from learning and work can be and are withdrawn if you get it wrong (Övreveit, 2000).

Factors that contribute to learning from adverse incidents

The NHS system is multi-layered (Vincent, 2004), 'systems failures' may therefore occur at one or more than one layer (Reason, 2000). For example an adverse incident may be caused due to a system failure that requires staff to work a quantity of hours that makes practice dangerous (Cooke, 1999); or a system failure where mistakes are made because staff have not understood a procedure or a skill well enough (Bransford, *et al,* 2000), or have insufficient knowledge to make an appropriate decision (Benner, 1984; Eraut, 1994). Within this multi-layered system culture also plays a significant part (Shein, 1985); an NHS learning system and culture that features blame and guilt is something constructed over time (Johnson, 1991; Tsoukas, 1994) and may be an extension of the 'learning system and culture' from compulsory and post compulsory education (Prosser and Trigwell, 1999; Ramsden, 1992). Constraints to learning may not lie only with a perceived 'blame culture' but also with situations which involve 'crisis management' for which there has been no subsequent de-briefing and group learning. The evidence suggests knowledge and insight into adverse incidents may become internalised and without dialogue with

others (Meizerow, 1991; Mumford, 1996), future practice may be based on inaccurate models of the required standard of care and underreporting of error (Lipshitz, 1993; Singer and Edmondson, 2006).

Adverse incidents are often caused by routineised practices within a routineised system that does not require or allow individuals to be reflexive or reflective (Barshi and Healy, 1993; Reason and Mycielska, 1982), this results in the individual failing to see a better way, a different way or even the most appropriate course of action (Eraut, 1994; Linden and Kaplan, 1994). In order to break out of routineised practices and see the system as a whole (Oshry, 2007), education and training needs to shift health practitioners away from conducting *'false hypotheses'* (Rolphe, 1977 p.180) based on inaccurate past experiences (Weick, 1995). Dewey (1916) saw routine habits as those that possessed us rather than us them. The literature suggests that adverse incidents occur not just be because of systems failure (Braithwaite, *et al,* 2006) but a lack of a systems understanding (Senge, 1990; Nevis, Di Bella and Gould, 1994; Oshry, 2007); this results in a failure to see the consequences (Culvenor, 1997 (b)) of actions or omissions in the wider provision of care. In addition the organisations in which systems are based often do not encourage challenging the knowledge base so that *'for every competent professional, there are probably several who are competently doing the wrong thing'* (Eraut, 1994 p. 229).

As well as working towards addressing the learning systems and culture that surrounds learning from adverse incidents, the literature suggests there is also a need to consider individual learning ability (Eraut, 2007; Entwistle, 1988; Bransford, *et al,* 2000). An individual's access to knowledge and expertise is founded on seeing the current situation as a representation of prior knowledge and experience (Anderson, 1977; Atherton, 2010), so the way knowledge has previously been assimilated and, or accommodated is important (Appelbaum and Goransson, 1997). Time constraints put upon learning so subjects are not mastered means learners carry forward incomplete understanding to a new situation (Elliot, *et al,* 2000); assessment of learning which focuses on 'what' and fails to include 'how' the knowledge was gained or will be applied (Bransford, *et al,* 2000) are also significant factors in failure to learn from error (Edmondson and Singer, 2008). If practitioners are in learning situations where their routineised clinical and learning practice becomes one based on surface learning

(Säljö, 1979; Ramsden, 1992; Pintrich, 2002), their ability to progress from novice to expert is seriously hampered (Benner, 1984; Eraut, 1994). The possibility for inappropriate learning processes to become embedded and used in decision making based on inaccurate data is very real (Benner 1984, Reason 1990, 2000). This is especially so in clinical emergencies or 'hot' situations (Benner, 1984; Eraut, 1994) where there is pressure to perform, make the right decisions, time is of the essence and decisions are made reflexively rather than reflectively (Tripp, 1998). In these situations practitioners are frequently called upon to 'think on their feet' and utilise meta-cognitive (reflexive) processes involved in decision making (Eraut, 1994), but the bank of knowledge that will support decisions and lead to a desired outcome may not be sufficient. Evidence of undesired outcomes causing adverse incidents is frequently caused by locum doctors or agency nurses lacking sufficient specialist and contextual knowledge (Audit Commission, 1999; Vincent, *et al,* 2000, 2004) to perform in the area in which they are expected to practice.

2.4 Learning methods the NHS use to learn from adverse incidents

The methods adopted by the NHS for staff to learn from adverse incidents is primarily through a process of investigation, triggered by an incident that has been reported by staff, or by a patient or carer suffering an alleged harm (NPSA, 2005 (a) (c)). Knowledge creation and sharing learning are seen as important factors for OL within and outwith the NHS (Nonaka, 1988, 1991; Nonaka and Takeuchi, 1995; Senge and Scharmer, 2001; Nevis, Di Bella and Gould, 1994; DoH, 2001). Expanding OL to fully utilise learning from adverse incidents and embed processes and practice is the responsibility for each NHS organisation (Bate, and Robert 2002); the literature suggest however that learning from incident reporting has been limited to data classification rather than harnessing both face to face learning and e-learning potential (Kodate, Anderson and Dodds, 2009).

The most used methods in the NHS by which to investigate adverse events and to construct some learning from them are Root Cause Analysis RCA and Risk Management (RM). RCA is a retrospective review of a patient safety incident undertaken in order to identify what, how, and why it happened. RCA is an iterative process and can involve the use of a variety of tools, for example the '5 Why's' (Ohno, 1988) or the Ishikawa diagram developed in 1982 (Kondo, 1994). Analysis is then used to identify where change is needed and to support staff in the making of

recommendations to minimise the re-occurrence of incidents in the future (NPSA 2004, Institute for Safe Medication Practices 2010). It is 'reflective deliberation' (Eraut, 2000) or 'reflection on action' and is as Kolb (1984) describes an 'integrated process' anchored to concrete experience. Learning proactively from adverse incidents by using methods such as Failure Mode Event Analysis, FMEA, would require practitioners to engage essentially with Dewey's model of experiential learning, combining postponement of action until thought has been given to prediction and consequence of action, thus providing direction and purpose (Dewey, 1938). FMEA however is not common practice in the NHS (Senders, 2004), although as a method it has had considerable success and credibility in other industries such as aviation (Helmreich, 2003). The most prevalent practice undertaken by the NHS to learn how to deal with and prevent adverse incidents is that of Risk Management (RM). Borne of the insurance industry and through the emergence of legislation such as the Health and Safety at Work Act [1974] and accompanying Regulations, RM practice prevails in the UK as the mechanism for spreading the cost of loss (Sesel, 2003). The demand for RM education has seen the development of courses in Higher Education institutions such as Middlesex University, University College London, Northumbria University, York University and Wolverhampton University, augmented by workshops and training from a plethora of private consultancy firms that include Capsticks, Bevan Ashfords and CAPITA. Within the NHS, RCA and FMEA appear to be used to assist with investigative approaches and procedures. RM education appears confined to propositional knowledge, with no vehicle for assessing application of knowledge and no learning around how to bring about organisational change that may be required through risk management. Anecdotal evidence suggests that teaching and learning approaches adopted and taken up by the NHS, and, the direction undertaken by the NPSA (2005 (a)) on collection of data relating to adverse incidents, may culminate in ineffectiveness caused by an imbalance *'between observation and action'* (Kolb, 1984 p. 22). Recent work by Nicollini *et al,* (2009) has also demonstrated RCA is not the panacea for dealing with adverse incidents as first thought, with the potential of RCA as a learning method being limited by micro management and linear cognitive processes (Nicollini, *et al,* 2009).

2.5 Developing the research questions

In order to learn from adverse incidents the NHS has predominantly adopted RCA and RM to augment the NPSA National Reporting and Learning System (NRLS) (2005), and have undertaken collaborative partnerships with the Institute of Health Improvement to bring the use of PDSA into the patient safety frame. The application and success gained from using these methods to facilitate OL from adverse incidents is significantly influenced by the NHS learning culture (Stahr, 2001) and the multifaceted system (Vincent, 2004; Oshry, 2007; Övretviet, 2000) within which NHS staff are employed to deliver health care.

Arguably the NHS system, like all social systems (Bourdieu 1977; Burgess, 1991) is constructed of '*fields*' (Bourdieu, 1989 p. 16), these fields reflect organisational life and learning experiences. Legitimising principles make up the social field and in relation to OL and adverse incidents are rooted in commonly held assumptions that to make mistakes is bad and to get things right is good (Pearn, Mulroony and Payne, 1998). This reframes (Goffman, 1974; Johnson, 1995) the learning culture in such a way that the learning system could be viewed as a *blame learning system*. If reward follows blaming behaviour then actions are further legitimised which in turn informs what is the norm or acceptable in the social field. The blame culture (*Organisation with a Memory*, 2000) in evidence in the NHS (Vincent, 1997 2001 b; The Guardian, 2010) may be linked to social engineering and manipulation (Bourdieu, 1989) prevalent in workplace culture (Tsoukas, 1994). It is particularly damaging in as much as it can obstruct individual and organisational learning (Vincent, 2003) and difficult to change as the environment makes individuals averse to learning (Bhatia, *et al,* 2003; Mc Ellhiney and Heffernan, 2003; Prosser and Trigwell, 1999). Further difficulties arise when clinical performance rests on whether a clinician has surface learned (Biggs 1987; Draper, 2002) key material under 'hot conditions' (Benner, 1984; Eraut, 1994). Also where learners are performance orientated they will be more concerned about making errors than learning (Bransford, *et al,* 2000) and are more likely to make mistakes.

Symbolic capital in relation to having an NHS blame learning system may pivot on a number of facets, firstly self interest associated with the disempowering of others (McEllhiney and Heffernan, 2003), the replication of a (punitive) learning system

(Prosser and Trigwell, 1999) that does not require individuals to embark on change, and perpetuation of a system that obfuscates where work really needs to focus. As active agents in the construction of the social field(s) (Bruner, 1990; Vygotsky, 1978) that make blame learning systems, our constructions become 'self-referent or recursive' and as they are paradoxically shared (Harkema, 2003 p. 344) attract others who *'have every chance of having similar dispositions and interests, and thus of producing practices that are themselves similar'* (Bourdieu, 1989 p. 19). This perpetuates the field that makes up a blame learning system and is compounded because as actors with a multiplicity of roles often espoused theories may be incongruent with our theories in use (Argyris and Schön, 1974, 1996), as such we may not even be aware that we are contributing to a blame learning system until this is made explicit. These fields are not fixed or permanent however and by creating symbolic capital in having a learning system and culture and moving away from a blame learning system and culture a step is made to changing the existing system. Acknowledging incongruence between espoused theories and theories in use may affect the habitus (Bourdieu, 1977) and with that the mindset that individuals have developed towards learning (Baker, 2005) from adverse incidents. Thinking and behaviour that surrounds adverse incidents could be affected and changed possibly and most profoundly through reflective practice and thinking (Dewey, 1916; Argyris and Schön, 1978; Lewin, 1946; Kolb, 1984); this could be augmented through a new system of reward located in career or social trajectories in a given social field. For example where an individual is not punished for getting something wrong and becomes a role model who promotes learning through experience which sometimes includes making mistakes (McArdle, Burns and Ireland, 2003, NPSA , 2005 (b)).

The literature reviewed combined with a scrutiny of available courses and training provision demonstrated that existing programmes of learning focused on the practicalities of RM, for example claims handling. They did not include reflective practice or require the learner to engage in creative thinking (Mezirow, 1990), both of which are missing in routineised practices that cause many adverse incidents (Eraut, 1994, Vincent, 2004). This led to the conclusion that education and training provision during 2003/4, designed to facilitate learning from and through adverse incidents was insufficient. This insufficiency could be met through reframing how individuals learned from adverse incidents (Goffman 1974; Johnson 1995) and

developing learning opportunities already available (RM, RCA, FMEA) to include pedagogical theory and practice. It was envisaged that this new approach would encourage a shift from surface learning towards a deep approach, and that this in turn would bring an understanding of how and why adverse incidents occur and may be prevented.

2.6 Operational Framework

The possibility that NHS staff were unaware of the interdependence (Lewin, 1946; Dewey, 1916) between their actions and the system may have been due to a number of factors. Firstly social isolation from a learning community, involvement in a learning community that had an inherent blame culture, and involvement in a learning community that did not promote or endorse a deep approach to learning. Participation in a learning community that focused on learning from adverse incidents that was inclusive and supportive of the individual (Mcardle, Burns and Ireland, 2003; Hawley, *et al,* 1995) may address this and inculcate the disposition to learn (Dewey, 1916) from and through the experience of an adverse incident. Such a LC would require dispersed learning leadership and open dialogue in order to move towards collective transformation (Sheaff and Pilgrim, 2006). As leadership is understood to be a *'system property'* (Caroll and Edmondson, 2002 p.54) educational leadership would be viewed with the LC as a lever (Meadows, 1999) with which to bring about knowledge flow and collective learning.

The research questions that emerged from the literature and served to guide the development of the Action Research studies were:

1. If deep approaches to learning were incorporated into ways in which health practitioners learn from adverse incidents would this reduce the occurrence/recurrence of adverse incidents?

2. If health practitioners were part of a supportive learning community that incorporated OL learning would this reduce the occurrence and recurrence of adverse incidents?

3. If the blame learning culture prevalent around learning from adverse incidents could be replaced with a positive learning culture would this reduce the occurrence and recurrence of adverse incidents?

Aligning deep approaches to learning from adverse incidents to the individual and the organisation (Biggs, 2003; Senge, *et al,* 1995) may overcome some of the problems identified in current approaches to adverse incidents (Nicollini, et al, 2009). A supportive LC may surface hidden knowledge (Von Krogh, Ichijo and Nonaka, 2000) from adverse incidents which could then be shared and contribute to the flow of knowledge to the wider organisational learning community. Reframing (Goffman, 1974) the learning culture to one that is balanced through rewarding learning from adverse incidents may change the context of a dominant negative social field (Bourdieu, 1989).

2.7 Summary

The literature reviewed in this chapter placed pedagogy at the centre of understanding how individuals and organisations are learning from adverse incidents in the NHS today. Initiatives taken to develop an understanding of how to reduce adverse incidents outwith the NHS have been related and compared to those undertaken within the NHS. Considerable progress has been made to reduce adverse incidents and this review acknowledges the literature that contributes to what we know of how organisational cultures influence the learning culture, but the science of learning particularly in relation to approaches to learning has been under utilised if used at all. Recognising this has enabled the development both of research questions and the operational framework. The following methodology and research design chapters draw on the literature review and through the AR cycles demonstrate how the literature has been augmented and applied throughout each study.

CHAPTER 3: METHODOLOGY AND METHODS

3 Introduction

The studies reported in the thesis utilised Action Research (AR) (Lewin, 1964, 1947, I and II) as the overarching methodology framework. This was selected in order to provide an ethical backdrop to the research, theories about change and a structure within which to locate all the other research and teaching activities. Significantly, Action Science (AS) (Argyris and Schön, 1978) and frame theories (Goffman, 1974; Johnson, 1995; Schmidt, Norman and Boshuizen, 1990) were brought under the overarching AR methodology to inform data analysis and interpretation, and to aid understanding of what was happening in the 'field'. Action Learning (AL) (Revens, 1982) was incorporated in the blended teaching and learning sessions so that experiential learning episodes would inculcate a deep approach to learning. Organisational Learning (OL) (Senge, *et al,* 1995) was used both to help in the design of risk-*e* as a Learning Organisation (LO) and to evaluate progression towards this goal.

As it is important to consider the methodological strands and methods that underpin and inform the respective studies, this chapter firstly provides an overview of AR and proceeds to discuss AS, AL, frame theories and OL. The chapter concludes with the operational framework which guided the research design and each of the respective studies.

3.1 Action Research: Historical context

AR is historically located spanning both modern and post-modern eras. In the modern era AR was used to aid advancements in technology, philosophy and politics, the effects of some of these including weapons of destruction, revolution and war (Lewin, 1947 I and II, 1948, 1952; Trist, 1993 a, b; Revens, 1983). In the post-modern era AR has been used to support activities that include the human rights, peace, anti globalisation and green movements (Argyris and Schön, 1974, 1978; Argyris, 1960, 1995, 1999; Susman and Evered, 1974; Reason, 1994; Senge, *et al,* 1995). AR in post-modernity is of particular significance to the NHS as it lends itself to the

examination of social institutions established through the industrial transformation of the last two centuries (Giddens, 1971), where flux is the norm and progress difficult to achieve (Lyotard, 1979).

The origins of Action Research can be found in the independent activities and subsequent collaborative work of Lewin and Trist, with some of the original thinking from the work of Moreno (Reason and Bradbury, 2001). Lewin, a German-born psychologist of Jewish parentage, was passionate about understanding *and* influencing social action. Lewin's early professional career involved teaching philosophy and psychology in the University of Berlin and serving in the German army. This was brought to an abrupt end after the rise to power of Hitler, whereupon Lewin left Germany and spent time as a visiting professor at Stanford University; he moved to America in 1933 and recommenced his research activities initially at Cornell School of Home Economics, and then, in 1935, at the University of Iowa. His professional interests included democracy, women's rights and anti-Semitism, all of which shaped the contextual application of his theories to practice. After conducting empirical studies with community groups he produced his 1946 seminal paper "Action Research and Minority Problems" in which he describes AR as "*a comparative research on the conditions and effects of various forms of social action and research leading to social action*" (Lewin, 1946 p.150). By breaking this down into three stages we see that Lewin was interested in exposing environments of powerfulness and powerlessness through:

1. conditions;
2. effects;
3. social action;

Key to becoming powerful was knowledge and understanding of the conditions or system within which people operated. He devised a process (AR cycles) and adopted phenomenological approaches to enable the subjective experiences of the individual to contribute towards knowledge creation, this engaged people in questioning that led to insight and the beginnings of self determination. The process became known as the '*spiral of steps, each of which is composed of a circle of planning, action and fact-finding about the result of the action*' (Lewin, 1948: p. 202).

The 'circle' (see Figure 2) is pre-informed by a 'general idea' that the researcher(s) have considered and around which some reconnaissance (fact finding) has been conducted to ensure the initial 'plan' is informed. From this process two things emerge, *'an overall plan of how to reach the objective and a decision in regard to the first step of action'* (Lewin, 1952 p. 463).The AR cycle starts many researchers off on a journey of discovery that brings them face to face with real issues around change. The method is deeply reflective and requires participants to be questioning of the conditions under which their actions are played out so that they can contemplate their next actions 'knowing' more. It requires a certain amount of courage (Lewin, 1947 (II)) as often the Action Researcher comes face to face with problems associated with power (Lewin, 1947 (II)).Sustaining change is brought about through a social process that involves setting group standards, this results in a reluctance of individuals to deviate from what become group norms(Lewin, 1952). Lewin questioned underlying assumptions involved in bringing about social change, recognising influencing factors to this as including, culture, status and resources (Lewin, 1952). Lewin was passionate about addressing critical social problems (Susman and Evered, 1978); he called for the setting of standards of achievement and realistic fact finding as prerequisites to any learning (Lewin, 1947 (II), 1952) and for research into social engineering that led to social action (Lewin, 1947 (II). Lewin loudly asserted that, '*Research that produces nothing but books will not suffice*' (Lewin, 1947 (II) p. 150).

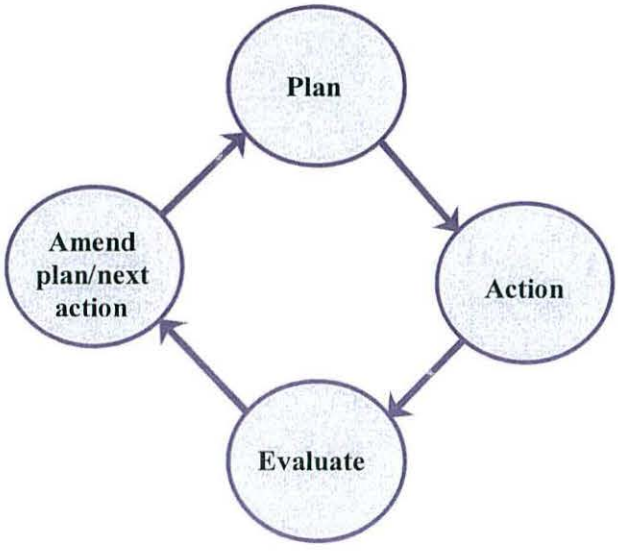


Figure 2: Lewin's Action Research cycle

Lewin questioned (1946, 1947 I and II) the societal value that groups and institutions held *for* society. He realised that interdependence tied fates together, which is something learning-oriented leaders explicitly communicate when involved in new learning situations (Singer and Edmondson, 2006). Although change could bring with it conflict, Lewin saw that power could change hands through group cohesion and collaboration (Lewin 1948, 1952). Lewin's insisted that in order to steer individuals towards adequate standard setting and feedback they would have to be away from the mercy or dislikes of others and placed in a system that included the contribution from those outside of the group or employing institution. Lewin stated that this would help create an environment in which people could learn (Lewin, 1947 (II)). Asking *'ontological, epistemological and methodological questions'* (Guba and Lincoln, 1989 p. 107 – 108) of AR enables us to understand the underlying 'inquiry paradigm' (Guba and Lincoln, 1989).

- The ontological question. What is the form and nature of reality and therefore what can be known about it? Adopting a relativist standpoint AR is context specific, realities are constructed by those at the 'local' level, they are experiential and 'sociohistorically' constructed.

- The epistemological question. What is the relationship between the knower and would be knower and what can be known? In AR the knower and would be knower are interchangeable roles as each participant holds a stock of knowledge about what is or can be known, the transference of knowledge or generation of new knowledge is necessarily transactional and subjectivist.

- The methodological question. How can the inquirer go about finding out what he or she believes to be known? For the purposes of this study the methodology and the methods adopted are hermeneutical, which means that knowledge is possible only through presupposition. As an iterative process however it is subject to consensus through open dialogue, moves towards a sophistication that replaces previous constructions, motivates and empowers towards change.

Lewin established the Research Centre on Group Dynamics (RCGD) at Massachusetts's Institute of Technology (M.I.T). He was heavily influenced by

Gestallt theories from which he developed the 'field theories' (Walter and Marks, 1981). Lewin's field theories identified a number of things. Firstly tensions created by the outer (motoric) region and the inner (personal) region are significant in maintaining equilibrium between needs and behaviour (Lewin, 1947 II). Secondly the concept of Independence of Fate (1946) identified the fate of a collection of individuals rests on how they act as a group. Thirdly, Task Interdependence as a means to create stakeholder mentality in group development. Lewin developed 'T' group sessions, in which managers were held in a situation where they had to become self reflective and contribute to the learning of others in open communication in what was called the *'here and now'* (Highhouse, 2002 p. 281) . Feedback focused on the behaviour of individual group members during training, with the result that a willingness to change from what was perceived as unwanted behaviour by the group and then by the individual, became prevalent. Field Theory, Independence of Fate, Task Interdependence and 'T' Groups were devised as a response to the obstacles encountered by Lewin and his collaborators when trying to bring about transformative change, they are the forerunner to today's many management training tools.

After declaring *'a crisis in the field of organisational science'* (Susman and Evered, 1978 p. 582), Susman and Evered (1978) re-presented Lewin's AR as the solution for which the epistemological choice of adopting a positivist model in organisational research had caused ethical and theory practice gap problems. AR utilises both praxis and interpretative paradigms (Susman and Evered, 1978), these enable the researcher(s) to support each other in the search for truth, make decisions that will enable action (Carr and Kemmis, 1986) and by taking action become changed in the process (Marx, 1963). AR welcomes the subjective experience of the researcher/participants as fundamentally important to understanding a given system (Susman and Evered, 1978). Susman and Evered (1978) developed Lewin's AR cycle into an iterative five phase cyclical process (see Figure 3), the phases are:

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1. diagnosing;
2. action planning;
3. action taking;

4. evaluating;
5. specifying learning;

The first part ('diagnosing') of Susman and Evered's (1978) process is the equivalent to what Lewin describes as the 'general idea and reconnaissance'. The second, third and fourth parts remain unaltered with Lewin's model. The fifth part ('specifying learning') aligns with Lewin's 'amending the plan and taking the next action'. Specifying Learning, while apparently last on the Susman and Evered (1978) cycle of events is actually something that occurs throughout, learning is fed back into the work and participants are encouraged to engage in double rather than single loop learning (Argyris and Schön, 1978).

AR participants are usually trying to improve or understand their social situation, they are required to work collaboratively (Kemmis and McTaggart, 1988) and as AR is a form of reflective enquiry, they have to do more than simply follow the AR spiral (McTaggart, 1996). AR practitioners have to actively engage in the reflective process of observing and problematising so that this becomes part of understanding and changing the system (Susman and Evered, 1978).

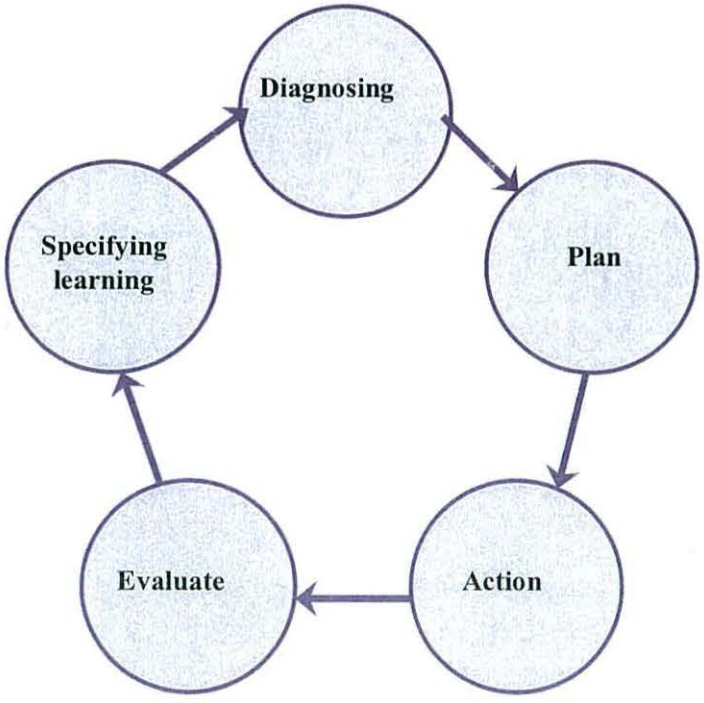

Figure 3: Susman and Evered's re-defined Action Research cycle

During the 1970's many Action Researchers were working independently of each other yet towards the same goal (Fals Borda, 2001). AR became the vehicle with which to reconfigure power, based on valuing and attending to ordinary people's knowledge and language and working towards empowering local groups and collectives (Fals Borda, 2001). This process brought participants to the role of researcher so that in effect their prior skills, knowledge and experience contributed to the production, interpretation and understanding of data (McTaggart, 1996).

3.1.2 Action Research Methods

Data collection methods for AR incorporate the use of interviews, questionnaires, focus groups and idiographic methods, for example case studies and personal narratives, so the uniqueness of individual human behaviour is harnessed. AR facilitates the revisiting and challenging of previously held assumptions (Argyris and Schön, 1978) so that knowledge is refined, validity of knowledge is strengthened and subjected to a process re-examination and construction in every new research episode (Susman and Evered, 1978).

Equality in the AR setting should in theory also facilitate the sharing of knowledge and expertise amongst individuals; properly conducted AR should empower participants to continue with work long after the researcher has left (Susman and Evered, 1978). Because the basic functions of AR rests on the relationships between what is learned or known and what is tested, AR becomes a mechanism for bridging the theory/practice gap through transference (Bransford, *et al*, 2000). AR is discussed by Baskerville (1996) as comprising of two initial stages. The first is the *diagnostic stage* which involves a collaborative analysis of the social situation by the researcher and participants to the research. At this stage theories are formulated concerning the nature of the research domain. The second stage he terms the *therapeutic stage* which involves collaborative change experiments. AR is not about ruminating a 'problem' that one might like to solve; the intention of AR is to introduce an *intervention* that is perceived by those proposing it to be transformational, one that will bring about some sort of improvement in the 'system'.

AR is essentially heuristic due to the core function of experience as the vehicle for understanding and learning. As humans encounter 'problems' in a variety of

contextual settings, the application of AR provides the research community with many rich and varied 'fields'. AR is well known in work with community groups (O'Brien, 2001), health and education (Meyer, 2000, McNiff, Lomax and Whitehead,. 1998), race and equality work, but it is also popular in Information Technology (Baskerville, 1996). AR necessitates collaborative group working, this may present problems at any time of a project including when researchers and participants genuinely understand phenomena in different ways. Lewin trained social scientists to *'handle scientific problems'* in the *'delicate task of building productive hard hitting teams of practitioners'* (Lewin in Susman and Evered, 1978 p. 587). AR requires co-creation that enshrines proposed work in a mutually acceptable ethical framework (Rappoport, 1970), this process eases potentially challenging relationships and smoothes the way for action (Meyer, 2000; Pasmore, 2001).

3.1.3 Validity and Reliability

Understanding human behaviour within social groups took a leap forward with the advent of Lewin's 'T' groups (Smith, a 2001), in which participants were amongst the first to be allowed to contribute to data findings. This development is important with regards to validity as it created a legitimate reflective vehicle for participants to have opportunities to confirm or disconfirm researchers' interpretation of data; and contributed to the learning environment itself (Kolb, 1984).

Validity in AR is maintained because the researcher/participant is required to expose their professional and personal *history* and state how this has become the 'lens' with which to interpret or make sense of data. Generalisability of findings in AR is not subject to the value of a group of dependent variables determined by the values of a group of independent variables (as in quantitative research); instead researchers and participants describe thematic patterns derived from the situation in which they are found. This co-interpretation of findings contributes towards validity as the truthfulness of data is revealed to the whole group, making AR a valid and legitimate approach to understanding systems change within human organisations (Baskerville and Wood-Harper, 1996).

3.2 Trist and the Tavistock Institute

While Lewin had been busy pioneering AR in America, in England quite independently of Lewin a group of psychoanalysts and psychiatrists were developing an action oriented approach to resolving social problems led by Trist (Trist 1993 (b)).The Tavistock Institute of Medical Psychology (Tavistock Clinic) was founded in 1920 to conduct research on the effects of mental illness caused by the war and the causes and treatment of mental illness generally in society. During the early years of the Tavistock Clinic, Trist undertook an American scholarship to study at Yale University (1933 –35) where he became interested in behaviourism and was fascinated by Lewin's work on democratic climate experiments at Iowa. Trist was later appointed as social psychologist to a three year project on long term unemployment in Scotland and subsequently appointed clinical psychologist at the Maudsley hospital in London. It was from here that he joined the Tavistock Clinic as a member of the military working on the War Office Selection Boards (WOSBs). Trist identified the conditions and invented the terms for 'social reconnection' and 'de-socialization' (Trist and Murray, 1990). The effects of world war two and the impending creation of the NHS saw the Institute of Human Relations (a division of the Tavistock Clinic) produce a bipartite delivery of services which focused on out-patient psychiatry and the study of wider social problems. Trist, at the heart of all these developments was now able to realise his earlier interest in the work of Lewin, which proved fruitful for them both.

Trist's work at the Tavistock Clinic was heavily influenced (like RCGD) by the practicalities of resource availability, he overcame these through initiatives like group therapy which was borne out of the requirement to deliver a service to many with very few staff. The production of the Tavistock Clinic publication *'Human Relations'* was brought about because academia refused to recognise, collaborate with or publish any of their work, in order to have a credible research reputation this provided a mechanism with which to disseminate research findings. Trist and Lewin advanced their ideas collaboratively, developing Lewin's action-research and Trist's socio-clinical, action-oriented work. Lewin wrote two celebrated papers for the first two issues of Human Relations, *Frontiers in Group Dynamics: Concept, Method and Reality in Social Science; Social Equilibria and Social Change* and *Frontiers in*

Group Dynamics: II. Channels of Group Life; Social Planning and Action Research, but died just before they were published. Trist developed a socio technical systems approach to AR at the Tavistock Institute which greatly influenced the Quality of Work Movement in the 1970's. His methodology began with *'action research.... to the search conference... and then into action learning'* (Trist, 1993 (b)). Trist's worked with Susman culminated in their publication '*Action Research in an American Underground Coal Mine, Laying the Groundwork for an Experiment: May to November 1973*'. Evaluation of this project some twelve years later demonstrated that while the project had only partially succeeded, it had a lasting positive impact on those who had been involved with a continuance of practices developed by the initial teams (Susman and Trist, 1993). Trist and Susman realised that fear of what change may bring often hampers any AR work, essentially because whilst inciting democratic participation AR is subversive and threatens prevailing organisational norms (Coghland and Casey, 2001). The conflict experienced by those involved in AR can lead to surrendering AR projects in whole or in part (Susman and Trist, 1993, Coghland and Casey, 2001, East and Robinson 1994), those involved in attempting collaborative change need to find ways to resolve outdated fragmented ways of being in order to progress (Koffman and Senge, 2001).

3.3 Argyris and Schön's Action Science

Argyris and Schön are credited with what has become known as Action Science (AS) which has contributed considerably to what we know and understand about Organisational Learning (OL). Argyris' early work includes examination of individual personality and conflict within organisational systems, leadership issues around executive behaviour (1959) and how stress and health affect organisational behaviour (1960). Argyris teamed up with Schön while working at MIT, in 1974 and 1978 they published their seminal works '*Theory in practice: Increasing professional effectiveness'* and '*Organisational learning: A theory of action perspective'*. Both Argyris and Schön acknowledge Lewin's work to be a major inspiration for their research (Argyris and Schön, 1978). Argyris and Schön identified two models and governing variables of human behaviour known as single and double loop learning which are acted out in difficult or challenging situations. Lewin was an exponent of challenging long held assumptions in order to bring about change, similarly exponents

of AS encourage individuals within organisations to work democratically and to challenge assumptions or world views in order to change practice. Similar to AR, AS is used as a vehicle to communicate the worldview of 'others' (Argyris, 2003). Argyris and Schön distinguished AS from AR by the prominence of participants 'espoused theories and theories-in-use' which are embedded in practice and uncovered through research. Argyris' and Schön's Model I and Model II type behaviours (1974,1978) are stated to have underlying theories of action that form part of our mental schema. These incorporate all of our rules, propositions, information, knowledge and are both underpinned and reinforced by our values, beliefs, concepts, attitudes, routines, practices, culture and ways of being. Argyris and Schön identified two distinct theories of action categories; the technical category which manifests as distanced models of expert analysis and are autonomous, and human categories which incorporate interpersonal relationships. We can be in possession of both types at any given time and each can become routineised with resultant positive and negative outcomes. The excerpt from one of Argyris and Schön's (1978) case studies below discusses Model I and Model II types of behaviour.

> *'But it is the latter that characterises some of Lewin's best examples... In these instances it is the development of the theory that is critical to the effectiveness of the intervention, and it is the intervention that tests the theory... '*
>
> (Argyris and Schön, 1978 p.436)

Argyris and Schön developed a process that requires participants to move from a Model I way of being to a preferred Model II state. This departure from entrenched behaviours can require the participant to feel at considerable risk, as dearly held beliefs are challenged through breaking out of what they call 'single loop learning' which does not require us to test or validate what we 'know'. Argyris and Schön claim that single loop learning stifles innovation and creative thought, makes us competitive rather than collaborative and prevents us from dealing with difficult problems associated with change. In order to demonstrate the Model II state, individuals have to expose themselves to the conflict that arises through coming to terms with changing *what* they think through the process of 'double loop learning'. This results in espoused theories becoming operationalised as 'theories-in-use', it is

through this operationalisation that individuals move from adaptive to transformative behaviour (Appelbaum and Goransson, 1997) and the theory practice gap is bridged (Roth and Senge, 1995).The process of bringing about the sort of change where underlying assumptions are challenged can be turbulent, especially where there are multiple stakeholders, institutional individual and collective learning processes, cultural and organisational barriers to learning, levels of bureaucracy, hierarchy and professional types, all of which are features of the NHS.

What is single loop and double loop learning?

In single loop learning (Model I type) actions that produce errors are identified and changed but the underlying rationale for the action remains unquestioned and unchallenged. For example examination of the distribution of resources in an organisation may demonstrate high spend in one area (say car parking) and insufficient spend in another (say IT equipment), the situation may be remedied by more being spent in the less well resourced area without asking why the imbalance arose in the first place or may have been allowed to continue until a crisis occurred. The amount of learning that takes place in single loop learning (Model I) is minimal and reduced to an individual or group of individuals making decisions without exposing practice to scrutiny and discussion. This situation arises for a variety of reasons and form the governing variables associated with behaviour, these include wanting to protect others, wanting to be 'positive' at all times and to be in control of setting and achieving goals. Double loop learning (located in Model II) requires individuals to ask of themselves and others why practices are the way they are, why decisions that inform practice have been made, why we haven't challenged and changed them if we know they should have been and why we haven't even asked why. The governing variables in Model II include those of ensuring valid information is available *to* all and high commitment and contribution *from* all. Model II type actors are co-creators and are transparent in their decision making and practices, confronting difficult situations in a collaborative way. Bringing people to Model II type behaviours is fraught with difficulties, Argyris identified obstacles that include 'defensive routines' made all the more intractable by the fact they are largely made 'undisscussable' and are relegated to the realms of 'underground management' all sides tacitly agreeing to the status quo (Argyris, 1995, 1999).

AS was further developed through the collaboration of Argyris, Putnam and McLain Smith (1985), and when Argyris joined the MIT became part of the language of OL. MIT's most renown exponent of OL, Peter Senge, already a supporter of both AR and AS became the MIT director in 1989, extolling learning from '*diverse mental models may become a new core competitive advantage*' (Roth and Senge, 1995 p. 1).

3.4 Clinical Inquiry

MIT's Management School hosted the work of Schein whose insightful work on career orientation, culture and personal autonomy developed OL and through his work with (Lewin's) T-group sessions defined 'clinical inquiry' as, *'the gathering of data in clinical settings that are created by people seeking help'* (Schein, 1991 p. 228). Schein distinguished clinical inquiry from AR by stating the primary role of the researcher in AR is to provide 'helping skills' that will enable others to deal with the process of AR, clinical inquiry is different as it provides training for participants in how to conduct research. His approach to uncover underlying patterns of cultural assumptions (Schein, 1985) is intense as it requires a process similar to Argyris and Schön in uncovering espoused theories and theories in use. Clininal Inqiry requires joint open discussion with people who embody an organisational culture which may possess negative and positive attributes. Schein stated '*the deciphering process'* as incredibly difficult requiring the researcher to *'go beyond the articulated values and attempt to understand the deeper layer of assumptions behind them'* (Schein, 1985 p. 117). This requires exposing cultural assumptions that are often hidden to those using them due to taken for granted learned routineised socialisation processes (Schein 1992, 1993).

3.5 Participatory Action Research

Another distinct but similar approach to AR is Participatory Action Research (PAR) which was identified by Chein, Cook and Harding (1948) as something that includes collaborative diagnosing and action planning between researcher and participant. PAR was developed by Carr and Kemmis (1986), who used emancipatory techniques while drawing on Lewin's requirement that AR be democratic in order to incorporate the views of participants in feedback sessions. PAR suggests that the self reflective educational practitioner, for whom this method was initially designed, has both an

'insider 'and 'outsider' role (Carr and Kemmis, 1986). It moves the concept on from one of 'participant observer' to one where the researcher is reflecting and conducting research on themselves in the form of first person research and is:

> *'..based on the Lewinian proposition that causal inferences about the behaviour of human beings are more likely to be valid and enactable when the human beings in question participate in building and testing them'*
>
> (Argyris and Schön, 1991 p. 86)

Ideally PAR creates the sort of environment for participants to give and receive valid information on which they are able to make informed choices, including the choice to participate. Participation if taken up is deemed to inspire the sort of personal commitment that will sustain contribution and implementation of findings (Argyris, 1999). Seen not just as quest for knowledge it is deemed to be personally transformational and liberating making the intellectual challenge *'congruent with the ideal of service'* (Fals Borda, 2001 p.32). In PAR responsibility is shared with clients engaged in a process that will enable them to discover knowledge which will help to shape and guide future actions (Whyte, *et al*, 1991). The acknowledgement of 'co researcher status' in a formal way recognises the expertise of participants as holding a valuable stock of situated knowledge and so increase contribution. The position of PAR participants within an organisation or community, places them in the best position to implement changes from within, rather than what may seem a more artificial and less connected way from without by an external researcher (Berger and Luckmann, 1966; Bradbury, 2001).

An emphasis historically perceived as a 'worldview' (Reason and Bradbury, 2001) for PAR appears to be 'P' for participation (Elden and Chisolm, 1993). PAR is considered to be an emergent and evolutionary process; it is less a method of introducing an intervention and more about mutual commitment and influence through willing sustainable participation (Lewin, 1952, Reason and Bradbury, 2001). Practical sustainability of what could amount to a well meaning but short lived collaboration through PAR, may be addressed through adoption of a structurationist

view (Giddens, 1984) of systems change which requires the use of 'leverage' points to challenge the reproduction of routineised situated practices (Giddens, 1984).

3.6 Revens and Action Learning

Dewey's influence over curriculum development includes ethics, the individual and social life, inquiry and democracy (Hickman 1998); his philosophical common sense, interest with reflection and experience, community and democracy have often led him to be identified as the earliest source of science practically addressing social problems (Pasmore, 2001). Clear parallels can be drawn with the '*five phases of reflective thinking: suggestion, intellectualisation, hypothesising, reasoning and testing hypothesis in action*' (Pasmore, 2001 p.3) and Lewin's approach to research oriented problem-solving in social and organisational settings, the socio technical systems approach of Eric Trist and for the identification of Action Learning (AL), developed by Revens (1982).

Revens was fascinated by resolving what appeared to many as intractable operational and production problems, he discovered a learning process that he refined and termed Action Learning (AL). Similar to Lewin (1946, 1952) and Trist (1990, 1993) Revens (1982) realised that the greatest power for conflict resolution rested with the very people who worked *closest to* the problems. Revens understood that it was these groups of people who held a tacit knowledge and understanding of issues that managers or executives more physically removed from the 'problems' had either forgotten or had never developed. He recognised that workers who had sufficient autonomy to solve problems as they arose and use their knowledge and understanding as a team were more productive, motivated and content at work. Counterparts who had less autonomy were less productive, poorly motivated and generally discontent. Revens participative approach is said to have pre-figured changes in systems, organisational research and AR communities during the 1970's and 1980's (Midgely, 2001).

Based on the principle that learning occurs when we discover gaps in our knowledge Revens (1982) formula (Figure 4) for uncovering knowledge deficits is known as:

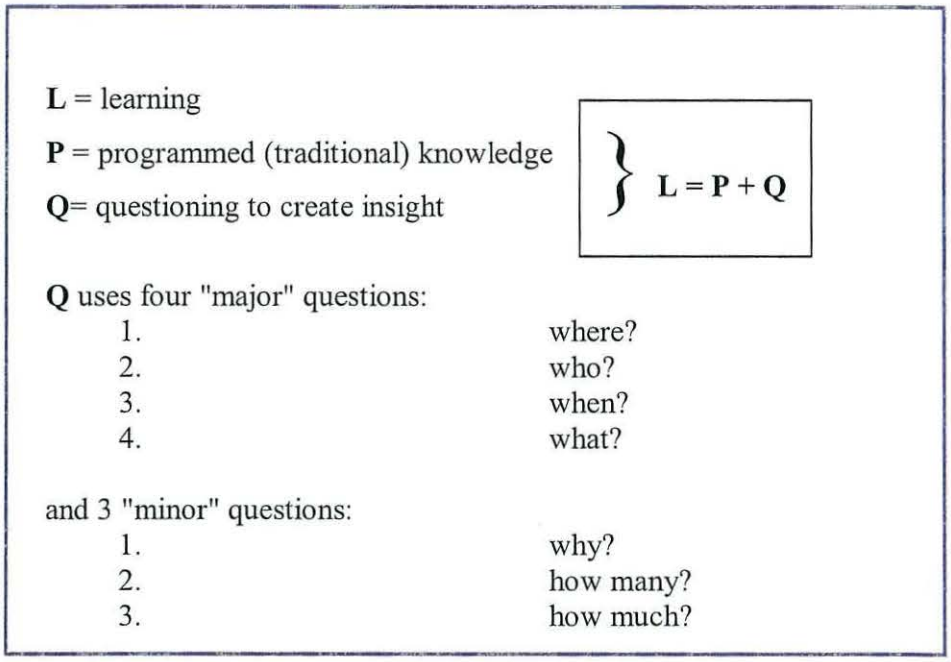

Figure4: Revens (1982) formula for uncovering knowledge deficits

AL as we know it today is conducted in small groups, or learning sets, populated by six to eight people; group members are expected to facilitate and encourage the learning of others by asking questions rather than providing answers to an individual's problem. The method is an example of reflection on action or experiences, those who are facilitating the learning of the 'problem bringer' to the learning set may see a solution but the emphasis is on helping the problem bringer find their own solution (Marquardt, 1999). Open ended questions beyond those stated above guide the problem bringer to a new solution (McGill and Brockbank, 2004). This is achieved by enabling the problem bringer to see the problem in the context of the broader system, or by seeing the mental model (Eraut, 1994) or frame by which they have viewed the problem originally, this also engages them in double loop learning and reflecting in action. The emphasis for the learning set is the development of learning how to learn skills, critical inquiry (Mezirow, 1990) and the enabling of others learning rather than telling people answers (Revens, 1982) . Learning sets once established are run on the grounds of equality, confidentiality and mutual respect. The popularity of AL is self evident, for example there is a Revens Academy in the

Manchester Business School, UK with a counterpart in America, and a World Institute for Action Learning based in Washington (Pedler, 1997; McGill and Brockbank, 2004; Marquardt, 1999).

3.7 Frame Theories

The emergence of frame theories began with Goffman (1974) who presented his seminal work '*Frame Analysis*' in 1974. According to Goffman, frame analysis enables the understanding of subjective experiences of reality, by depicting cognitive schema in frames of recognition. Goffman developed his ideas from his earlier work on symbolic interactionism (Goffman, 1959). Frame analysis has been utilised in media studies (Shah and Domke, 1996), found an outlet in social movements as an enabler of alignment of purpose and transition of members (Snow and Bedford, 1992) and is found in organisational studies to explain management behaviour (Dunford and Palmer, 1995; Palmer and Dunford, 1996; Bowen, 1998). Frame analysis is not considered a methodology in itself but is viewed as valuable method with which to classify a structure or a problem (Elliott and Hayward, 1998).

3.8 Organisational Learning (OL)

OL spans the modernist era by focusing on positivist science to provide answers to life's problems and the postmodernist era by focusing on the deconstruction of so called answers in order to better understand society (Rosenstiel and Koch, 2001). OL uses both positivist and naturalistic methods, insights so far yielded are dependent on the approach taken and the 'lens' or 'form' with which the researcher has chosen (Somekh and Thaler, 1997). For many the post modern view of OL is discursive in nature, discourse being reshaped by those who have or do not have power (Gherhardi and Niclolini, 2000; Schein, 1993).

Maintaining status quo with regard to power and authority in an organisation may be achieved through role stratification (Davis and Moore, 1945). In reality this often results in detrimental practices (Tumin, 1967) due to the variation of innate ability, talent and corresponding allocation of positions within an organisation, which are often viewed in terms of their status and importance that affect society as a whole (Tumin, 1967). Role stratification may be seen as having a corresponding affect on

how OL is produced, developed and controlled, as learning and knowledge can be seen to hold an inherent value which influences power and authority. A Marxist view would see a person's knowledge position as their 'market situation', around which groups form to share a similar 'status situation' and precludes inclusion which results in social closure for some (Marx, 1963). Adverse incidents have the potential to yield significant positive outcomes for any organisation but the potential to lose one's 'market situation' often prevents individuals from sharing what they have learned (Alberti, 2001). Post-modern enquiry calls us to challenge the socially constructed truths about the organisational environment and the roles we play within them. AR is an ideal mechanism with which to do this because it requires Action Researchers to adopt and move beyond the functionalist perspective of systems thinking (Senge, *et al,* 1995). Adopting OL practices and processes demonstrate the type of adaptive learning organisations need in order to change and survive (Bransford, *et al,* 2000; Senge, 1990).

3.9 Summary

It is important to understand from the outset when reading this thesis that while the philosophical underpinnings of AR, AS, AL and OL are complementary, the different methods required to be used by the researcher bring about different outcomes, this makes each approach distinct and each distinctly useful in different contexts. This was particularly helpful as the proposed area of study benefited from having a variety of 'tools' (Senge and Scharmer, 2001) with which to work.

Through a myriad of studies (Lewin, 1946, 1947 I and II; Trist,1993 a and b; Schein, 1991; Argyris and Schön 1978; Freire,1970; Skinner.1972; Eraut,1994; Senge,1990; Ramsden,1992; Marton and Ramsden, 1988; Argyris, Putnam and McClain Smith, 1985);Reason and Bradbury, 2001; Pasmore, 2001), we have come to understand that learning within an organisation is often dependent on both the learning culture and how individuals are socialised to become part of it. Socialisation is something that begins very early on for humans; primary socialisation takes place in infancy where early modelling and communication skills are learnt alongside learning about approval and disapproval (Bourdieu and Wacquant 1992; Gherhardi and Niclolini 2000). These early socialisation experiences are carried over into other real world institutions and agencies such as the educational system, the occupational

group/workplace and the peer group where we develop values, beliefs and the norms that are expressed in relation to these.

Undoubtedly while others such as Argyris and Schön, Schein, Susman and Evered, Freire, and Reason have expanded Lewin's AR methodology, and worked alongside Lewin (Trist in the real sense and Demming independently), it is Lewin to which we are indebted for an approach that enabled participants to develop theories about their own realities by trying to change their real world situations. Lewin used the AR model to challenge the 'quasi stationary equilibrium' by creating a method that would provide participants with the skills to recognise that their own knowledge and abilities could supply answers to the problems they faced. The whole process instils a sense of empowerment and belief in the self and in the group; it is this often reclaimed power harnessed by the group and through sustained collaboration that brings about change.

Reflective learning and praxis may have different names (action research, action learning, action science) but the interrelationship between them cannot be denied (Reason and Bradbury, 2001). The approaches are like cousins with critical points in history when the leaders of each came together (for example Schein, Argyris and Schön in MIT), enabling the development of both learning methodology and methods with which to understand the world. The popularity of AR has waxed and waned over the years. During the 1960's it was associated with 'radical political activism' (Stringer, 1999) so declined. Today though the context-sensitive nature and unifying integrative processes between teaching, teacher development and curriculum development of AR (Somekh, 1995), ensures AR a place within education (Elliot, 1991). AR is also employed in community-based, and participatory action research (Carr and Kemmis, 1986,) health care (Hart and Bond, 1995; Greenwood, 1994; Titchen and Binnie,1993; Coghland and Casey, 2001), Local Authorities (Hartley, Benington and Binns 1997, the police and commercial companies (Somekh, 1995) even gaining ground in usefulness and relevance in research in Information Technology Systems (Baskerville, 1996).

CHAPTER 4: RESEARCH DESIGN AND THE DEVELOPMENT OF ACTION RESEARCH CYCLES

4 Introduction

This chapter presents the research design that underpinned the studies in the thesis. The design reflects the conceptual framework, literature review and research methodology and was constructed in such a way as to facilitate the finding of answers to the proposed research questions. This required research to be conducted in such a way that enabled the identification of 'deep' approaches to learning from adverse incidents (Nicollini, *et al*, 2009), to evaluate the progress of risk-e as a LC (Biggs 2003; Senge, *et al,* 1995), and to identify methods of establishing a no blame learning culture (Pearn, Mulroony and Payne, 1998).

This chapter begins with the operational framework and a discussion of how the research design was developed, the chapter continues by presenting how alignment of the various methodologies and methods under the umbrella of AR, provided a coherent structure for the studies which are represented as embedded in the reflective turn (Lewin 1947 I; Smith, 2001, (a)) of each AR cycle. The research design utilised Lewin's AR cycle as a template for each study, commencing with a 'general idea', moving to planning, action, evaluation and finally amending the plan in order to begin the process again. This template also makes the specific choice points within each study identifiable by exposing the choice of methods to generate research questions and answers and direct the gaze of research visible. It is important to note that although the AR process had key points of activity it was not linear, the process assisted in making sense of activities by focusing the practitioner on each step in the cycle whilst at the same time imbuing as sense of interrelatedness and dynamism. The chapter concludes with an overview of the research methods used during for the PhD studies.

4.1 Developing the Operational framework

The epistemological source of AR, AS, AL and OL is located in the behavioural (social) sciences as action researchers are known to intervene in social systems

(Baskerville, 1996). As an Action Researcher using education to intervene in social systems, adopting a qualitative constructivist approach (Guba and Lincoln, 1989) suited the research design and enabled the perception of knowledge to be embedded within social action. The approach incorporated the Weberian (1968) view that social action is carried out within the conscious thought of others and their actions.

While AR, AS, AL and OL are all premised on the principles of democracy, participation, emancipation and change, identifying the potential outcomes from these ensured a particular place in the research design, depicted in Figure 5 below.

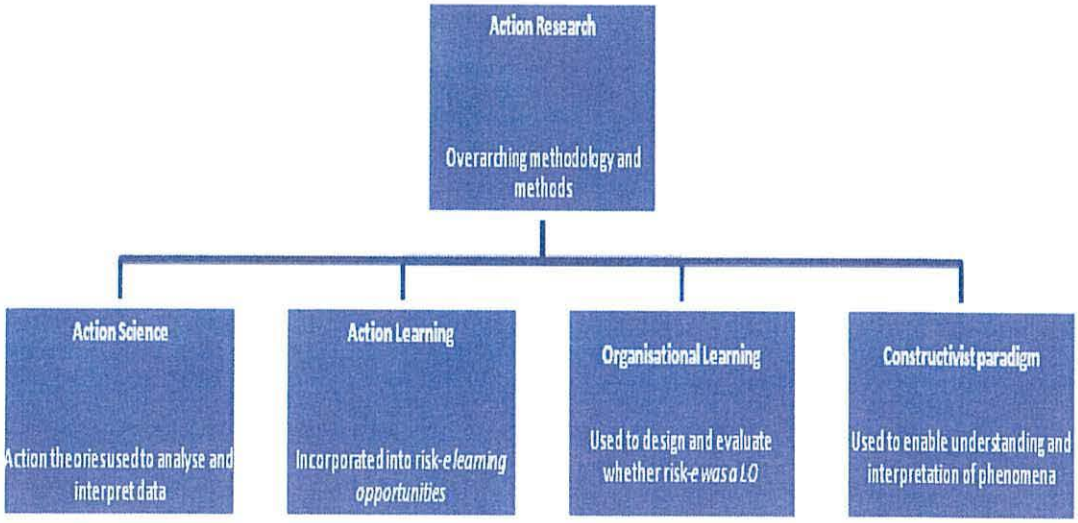

Figure 5: Showing the structure of the research methodology and how each was used.

As part of an AR methodological framework (Lewin, 1948) linked to a constructivist approach (Guba and Lincoln, 1989), the operational framework was embedded in a reflexive appraisal of professional experience.

4.2 Research design: Application of AR

The practical application of the first turn of the AR cycle was used to define and inform the research design. This began, as all AR cycles commence with a 'general idea', in this instance this manifested in the idea that education may be a suitable vehicle for social change. This led to a phase of reconnaissance/fact finding which provided a deeper understanding of the system(s) in which the student/participants

were operating, and enabled the identification of learning opportunities available to the student/participants at that point in time. An outcome of this activity was the production of the heuristic (p. 62) that compared AR, AS, AL, OL for similarities and differences. The heuristic incorporated 'Plan Do Study Act' (PDSA) (Langley, *et al*, 1992) as a comparable method that has been endorsed by the WHO, taken up by the NHS and familiar to the student/participants. Developing the heuristic led to the conclusion that learning from adverse incidents could be more easily understood by NHS staff if it were possible to build on existing knowledge and practice of PDSA, reflective learning cycles and change processes they had already experienced. The first AR cycle (Figure. 6) and outcomes from each of the stages is discussed below.

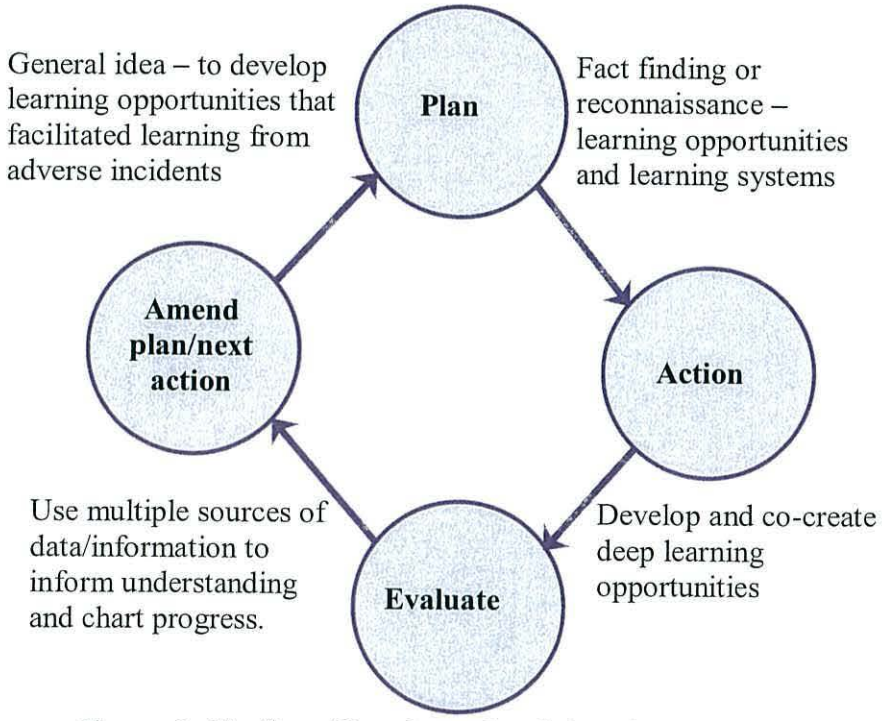

Figure 6: The first AR cycle used to define the research design.

4.2.1 General Idea: Learning as a vehicle for social change

The general idea focused on the development and delivery of deep learning opportunities (Entwistle, 1981; Marton, Hounsell and Entwistle, 1984) that would be co-created by the student/participants. The implications were that this may bring about a social change in contrast to many workplace practices (Pasmore, 2001) regarding learning from adverse incidents. Ensuring all collaborators worked together

as equal partners presented challenges in itself, but proved to be the vehicle for achieving anticipated improvements at first, second and third levels (Bradbury, 2001). First level changes centred on the ability to become more knowledgeable about *how* we learn from adverse incidents. In order to reduce adverse incidents, second level changes required student/participants to be proactive learners rather than reactive learners from adverse incidents. This would focus on developing a 'mind set' or schema which actively sought out learning opportunities based on skills described as '*sensing emergent learning futures*' (Senge and Schwarmer, 2001. p.240). An additional change was associated with developing the learning culture within each student/participant's host organisation. This started with a first level change for student/participants gained through a greater understanding of *how* they learn and *how to* facilitate other people's learning. As a consequence the change process would inform and develop as a second level change from the student/participants to their own students in their own organisations. As is the case with AR, the first, second and third level changes were not linear but dynamic and frequently occurred as a cascade effect through the utilisation of key change agents (Hartley, Benington and Binns, 1997). The 'change agent' role was shared and drew on the attributes described by Caldwell (2003) that included facilitator, innovator, educator, analyst, and risk taker.

Development of learning opportunities incorporated aspects of understanding *how* learning occurs. This was undertaken to provide the student/participants with thinking skills that reflected Dewey's collaborative approach in which hypotheses produced were tested in practice (Pasmore, 2001) by the student/participants themselves. Student/participants acted as the permanent insiders who's pre-understanding, role duality and knowledge of organisational politics (Coghland and Casey, 2001) enabled the structuring (Bourdieu, 1977) of 'leverage' (Bradbury, 2001) within their employing organisations. As part of the general idea and the fact finding/reconnaissance stages of AR 'diagnosing' activities were completed (Susman and Evered, 1978). This involved the interpretation of complex organisational problems which led to theoretical assumptions; these in turn generated a working hypothesis about the nature of the NHS and of the ability of NHS staff to learn from adverse incidents.

4.2.2 Reconnaissance/fact finding: Understanding the system(s) in which the participants operate, searching out and evaluation of available curriculum

Understanding the system(s)

The 'work system' in which the student/participants were situated was encompassed by a complex dynamic and risk laden environment. Ensuring quality within this context was governed by a Quality Assurance (QA) 'system' (*The New NHS, Modern and Dependable* (1997); *A First Class Service - Quality in the new NHS* (1998); *The Health Act* [1999]). Under this system QA standards were delivered locally through Clinical Governance arrangements, in Wales this was through the WRP. The PDSA Model of Improvement (Langley, *et al,* 1992) was incorporated as one of the facets of the NHS QA system due to the fact that it provided a framework for developing, testing and implementing change. PDSA has evidence based practice at its core and requires NHS staff to engage in reflective learning. PDSA (Figure. 7) originated with Shewhart in the 1930's and was developed by Deming (1982) before becoming the 'Model for Improvement' (Langley, *et al*, 1992).

The model (Figure 7) was taken up by the Institute of Health Improvement (America and UK) and the NHS Modernisation Agency as part of their quality improvement drives (Fillingham, 2003).

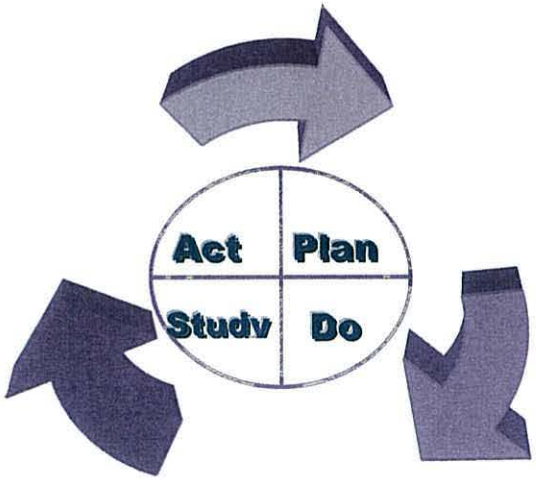

Figure 7: The PDSA cycle

The PDSA model consists of two equally important parts, the first being the "thinking part" and the second the "doing part". As part of this reflective and active model there are three questions used in conjunction with PDSA cycles that guide improvement work. The questions focus on understanding, *What are we trying to accomplish? How will we know that change is an improvement?,* and *What changes can we make that will lead to an improvement?* The PDSA cycle requires individuals to try change on a small scale and to use consecutive cycles to build up the information about how effective the change was. The constructive alignment of (Biggs, 2003) PDSA with adopted methodological approaches is demonstrated in the heuristic in Table 2.

Table 2: Heuristic to demonstrating similarities and fit of PDSA to other methodologies.

Action Research Lewin Trist (socio systems)	Action Science Argyris and Schön *et al.*	Action Learning Dewey Revens	Clinical Inquiry Schein	PAR Cash, & Harding. Carr & Kemmis. Reason	QI model Shewheart, Deming, Langley
Those close to problems have answers. Emancipation, collaboration and participation. Identify general idea Reconnaissance Planning First action step Evaluate Amended plan Second action step Use of Learning Communities	Those close to problems have answers. Emancipation, collaboration and participation. Challenging assumptions Single loop Double loop learning Model I Model II behaviours	Those close to problems have answers. Emancipation, collaboration and participation. **L** = learning **P** = programmed (traditional) knowledge **Q**= questioning to create insight. Use of Learning Sets	Those close to problems have answers. Emancipation, collaboration and participation. Uncovering patterns of cultural assumptions	Those close to problems have answers. Emancipation, collaboration and participation. Reflective/reflexive use of self as insider/outsider	Those close to problems have answers. Emancipation, collaboration and participation. PDSA What are we trying to accomplish? How do we know that a change is an improvement? What changes can we make that will result in an improvement?

Interrogation of the systems and environment that NHS staff use and inhabit demonstrated that while both are complex, they may not in themselves prevent health care practitioners adopting the looking state Vanderstraeten (2002) describes. According to Vanderstraeten (2002) it is the cognisance of different values of experience that determine intelligent actions, often achieved through the experience of trial and error (Vanderstraeten, 2002). It was concluded that the looking state may in itself be open to influence, if this were the case then student/participants might be encouraged to adopt a different lens when learning from adverse incidents. This new lens would require them not to look for similarities in health care provision but differences and variations. It was anticipated that this might result in proactive learning. As a result of this phase a number of questions surfaced:

- When NHS staff work in risk laden environments do they notice the potential for adverse incidents to occur?
- Are they looking in habit form, through a lens of what has gone before without questioning what may be a new situation?

Searching out and evaluation of learning opportunities available

Part of reconnaissance meant a search of learning opportunities available to the student/participants, this discovered Health and Safety Risk Management training available through the National Examination Board in Occupational Safety and Health (NEBOSH). A review of the NEBOSH training identified it as exemplifying a 'surface approach' to learning (Biggs, 1989; Entwistle and Ramsden, 1983). This was due to a predominance of lecture 'talk and chalk' style, no interaction or participation on the part of the students and assessment of learning being restricted to closed multiple choice questions. University based programmes at that time fared little better and approached learning in a style reminiscent of '*Dewey's time*' (Pasmore, 2001 p. 39), for the most part they educated individuals about learning from adverse incidents by prescriptively *telling* learners how to manage risk. As a result of reconnaissance, and discussion with risk-*e* colleagues it was decided that learning opportunities would utilise the professional and personal tacit knowledge of student/participants in order to bring about a desired 'deep' learning experience.

4.2.3 Overall plan: use AR as overarching methodology for thesis studies and to encourage social change through learning from adverse incidents for NHS staff

All involved in risk-*e* were invited to collaborate in future research activities as AR participants and to use generated knowledge to develop learning opportunities in the day to day dealing of organisational '*complex human situations*' (Elliot, 1991 p. 52). The overall plan, which would have been located in Susman and Evered's (1978) 'action planning' stage, focused on developing learning opportunities that would facilitate individual and organisational learning from adverse incidents.

4.2.4 Actions: Systems identification and develop risk-e as an emerging Learning Organisation.

An outcome of this cycle was to deliver actions that built upon the planning and reconnaissance stages, these were;

a) Develop educational systems to enable action

Part of my risk-*e* project role meant producing initial learning opportunities for the student/participants which also facilitated research activities for some of the studies (Studies One and Two) in this thesis. The first learning opportunity was delivered by conjoining the already established teaching in Higher Education (tHE) programme with learning about risk management. The tHE programme was based on years of expertise of Dr. John Fazey (RIEL Director) developed through teaching and research into teaching and learning built up through an extensive university career. As assessment is known to drive student learning (Marton and Säljö, 1976) the risk-*e* assessment included three written assignments (essay, report, paper), a poster presentation of innovation in practice, a reflective portfolio of teaching practice and peer review of teaching practice. The process enabled students to be both practitioner and researcher into their own practice (Elliot, 1991). The pedagogy chosen to underpin learning opportunities was a deliberate choice point (Bradbury, 2001), adopting methods that encouraged a 'deep approach' to learning (Marton and Booth, 1997; Prosser and Trigwell, 1999) was useful in ascertaining the approaches to learning of the student/participants (Study One).

b) Develop a LO

The original composition of the risk-*e* LO included the WRP, UWB and the KTP (see Figure 9) employees. Taken on its own this was considered a core unit (Senge, *et al,* 1995) and formed the basis of the emerging LO. The core staff included Educators, Clinicians, Risk Managers, Claims Managers, Complaints Managers and Patient Liaison Officers; all of whom were considered to occupy influential and knowledgeable positions and were ideally suited to becoming 'key informants' (Hartley, Benington and Binns, 1997; Caldwell, 2003) of risk-*e*. risk-*e* membership (WRP, UWB and KTP see Figure. 9) was augmented with RIEL staff and student/participants. The course as an AR intervention acted as bridge between the risk-*e* LO and student/participant employing organisations as student/participants were required to demonstrate innovations in teaching practice in their employing organisations.

c. Utilise constructivist methodology to develop OL knowledge

A constructivist approach (Guba and Lincoln, 1989) was chosen to analyse data generated throughout each AR cycle. This enabled a hermeneutic dialectic method, allowing for constant comparisons to be made while drawing on relevant 'analects' from literature, policy or guidelines as they emerged (Guba and Lincoln, 1989). In addition the constructivist approach 'opened up' rather than 'closed down' the consideration of multiple constructions of how we learn from adverse incidents (Appleton and King, 2002). Accepting that there may be pluralistic multiple interpretations (Schwandt, 1994; Lincoln and Guba, 1985) of learning from adverse incidents was recognised as important in framing reflexivity. The constructivist approach blended well with AR as it facilitated the empowerment of individuals through knowledge generation (Reason, 1994). In order to understand 'other' constructed realities AS (Argyris and Schön, 1978) was successful in the location of espoused theories and those in use, although using AS required a high degree of diplomacy and sensitivity due to '*the defensiveness of human beings'* (Reason, 1994 p.330.

4.2.5 Plan next step

This final stage in this AR cycle involved planning the 'next steps' of research activity. This focused attention on examining aspects of the risk-*e* LO (Senge, 1990) specifically the emerging Learning Communities and Learning Culture.

4.3 Research Methods adopted for the PhD studies

A description of the various research methods and tools developed and used for the studies are outlined here, a more detailed account of is provided in the subsequent studies chapters.

Questionnaires

Two paper based open ended questionnaires were developed from a review of the literature and professional knowledge. These were peer reviewed with University colleagues in order to ensure relevancy (Erlandson, *et al*, 1993) and clarity as a data collection tools (Foddy, 1993; Merriam, 1998). The first questionnaire was used to collect data from the first student/participant cohort before and after the risk-*e* tHE teaching intervention. A revised version of this was used for the second student/participant cohort. The second questionnaire was used for the QIQA pilot in Study five. To ensure anonymity for student/participants, identification numbers were used on questionnaires and interview schedules An explanation of the risk-*e* project and request for data collection for higher degrees was provided to potential student/participants along with assurances of confidentiality prior to completion of the questionnaires. The questionnaires included a note expressing appreciation for participation and invitation for an interview at a later date.

The type, font and spacing were chosen in order to make the questionnaires easy to read (Foddy, 1993). The order of the questions were constructed to allow a natural flow (Foddy, 1993), this was useful in easing the student/participant in preparation for later questions. The titling and sequence of questions was intended to *prime* the participants to consider their responses reflectively (Foddy, 1993).

Interviews

Interviews were conducted face to face and via telephone, using open ended questions that had been based on emergent areas of interest and development of knowledge through successive research episodes (Erlandson, *et al,* 1993). Interviewing techniques included using probes and funnelling (Foddy, 1993), and were 'discussions' (Lincoln and Guba, 1985) in as much as student/participants introduced their own topics; often questions were answered without having to be formerly asked. Interviews were conducted at a time and place most suitable to the student/participant, when permission was given data was recorded and notes were taken. All transcribed data was offered for confirmation or disconfirmation to the student/participant during and after the interview. This enabled the student/participants to withdraw or amend data, ensured a type of face validity and confirmability (Erlandson, *et al,* 1993) of findings and also contributed to the hermeneutic process of co-construction of meaningful solutions sought through the AR process.

Field Research

As the 'wholeness' of the research required a reflexive approach (Vanderstraeten, 2002) and awareness of emergent phenomena, a perceived dissonance in espoused and practiced theories occasioned an opportunistic use of peer teaching observation to conduct field research. This meant that students/participants were observed as teachers in their social setting (organisations) 'in the here and now' (Erlandson, 1993). Observations from the field were recorded during the session and a summary of key observations were made at the end of each session. The findings from these observations were discussed with student/participants and became the basis for a subsequent interview to explore possible supports and barriers to change.

In addition, my attendance at RM network meetings in which student/participants were observed in a different role from that as teacher/change agent, provided critical insights (Frankenberg, 1991) into the social reality for the student/participants. This influenced insights and shifts in my own thinking for data interpretation purposes. During field research my role could be better described as a participant researcher (Gans, 1991). During risk management meetings my role was more 'researcher', albeit with no chance to formally report findings as research ethics required a full

research application for data collection in this context. This interchangeability of role is consistent with the naturalistic researcher (Gans, 1991)

Data analysis

Data from all sources was transcribed verbatim, relayed back to student/participants in order to capture their interpretations of data, content analysed for themes and trends and subjectively interpreted so as to draw on the tacit knowledge and commonsense of self (Guba and Lincoln, 1989). Early constructions were clustered and coded under headings in order to identify *'regularities, and patterns in the data* (Polit and Hungler, 1989 p. 320). Findings were discussed with colleagues in order to explore possible alternative explanations, all of which allowed a sensible construction of the phenomena (Holstein and Gubrium, 1994; Polit and Hungler, 1989). Constructs and explanations were subjected to review in order to ensure questions asked had sufficiently measured that which it was '*supposed to measure'* (Alreck and Settle, 1985 p.58), any new 'measures' were explored further (and so saturated) as an ongoing process of the research.

Validity and reliability of the findings was ensured through a number of processes, firstly findings have been relayed as far as possible *as* they have been lived (Blaxter, Hughes and Tight, 1996), an opportunity was given to confirm and disconfirm data during and after data collection with all student/participants and the part of myself as researcher is made clearly visible throughout. There is also a sufficient audit trail of data collection tools, methods and analysis to allow for trustworthiness (Erlandson, *et al,* 1993)

Ethics

All research was conducted under the auspices of good practice developed through prior research projects in the School of Education and the Faculty of Health and was monitored by the Director of the Research Institute for Enhancing Learning. No formal MREC application was required to collect data as participants were being asked to participate as University students, the candidature for which was open to individuals from outside of the NHS. All participants were offered assurances of confidentiality and anonymity, the opportunity not to participate or to withdraw from any of the studies at any time. Permission was sought for findings to be used in higher

degrees, to develop learning opportunities from adverse incidents, to inform the risk-*e* community, and be used for research dissemination purposes.

4.4 Summary

In summary AR provided the overall structure and ethical framework which provided the methodological 'glue' for the PhD studies and ultimately the risk-*e* project as a whole. Given the variety of methods available when using an AR methodology and the quantity of data generated by each undertaking, the research design had to be robust enough to render the messy process of qualitative enquiry orderly and accurately presented (Schwandt, 1994). Specifying each of the studies within an AR cycle and detailing the methodologies used both defined and marked out developments. This was an iterative process in which understanding was gained and specific choice points could be arrived at as the questions for the next cycle were generated (Bradbury, 2001). Tying in the research process to this framework steered the interpretation of actions and experience enabling perception '*from within action not from outside of it*' (Eraut, 1994 p.31) and ensured a coherence backed up by methodological rigour. The research design is constructively aligned to the AR methodology facilitating a flow of knowledge generation that fits within but is unimpeded. The resulting studies are presented in the following way, studies one and two are housed in the first AR cycle, studies three and four are housed in the second AR cycle and study five is housed in the third AR cycle.

CHAPTER 5: THE ACTION RESEARCH CYCLES

Introduction

Implementation of the research design was made possible through series of iterative AR cycles that were premised on '*understanding the complex world of the lived experience*' (Schwandt, 1994 p. 118). The research questions and study aims were informed by a combination of clinical, research, teaching and risk management experience augmented by a substantial review of the literature. All of which had 'come together' intuitively (Entwistle, 1981) to enable the construction of a 'commonsense reality' (Guba and Lincoln, 1989, Schwandt, 1994) of the field of study.

While each respective study was contained in three AR cycles, independently they informed the activity of a subsequent one, guided the development of pertinent research questions and provided a reflexive 'looking' state (Vanderstraeten, 2002) within each field of study. The AR cycles and studies are depicted in Figure 8 below.

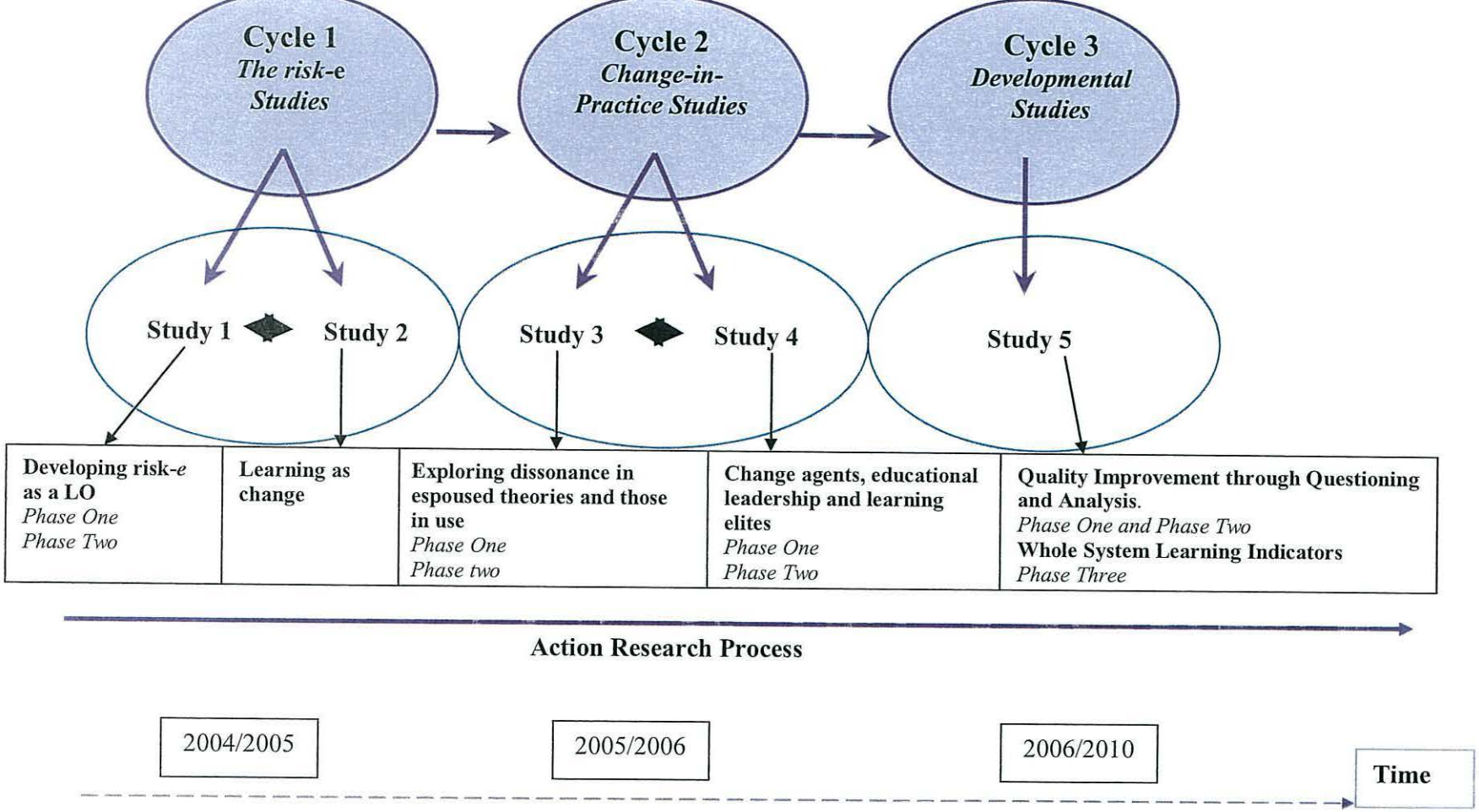

Figure 8: Studies and study phases located in the AR cycles

5.1 First Cycle: The risk-*e* Studies

The first of the two studies in this cycle began an experiential journey into AR with the piloting of the new risk-*e* curriculum in 2004. The first part of the programme took place in a residential setting, which provided the opportunity for student/participants to step back from the *'world of action'* (Bradbury, 2001 p. 308) in order to reflect and improve action (Boud and Walker, 1998).

This first study had two phases and used the AR cycle to identify whether risk-*e* was developing as a LO. In phase one, evidence was sought for the emergence of Learning Communities (LC), using the risk-*e* e-learning environment. In phase two, an exploratory study was undertaken to ascertain whether the student/participants had the learning dispositions (Biggs, 1987; Bransford, *et al*, 2000) to be part of and contribute to a LO.

The second of the studies in this first cycle followed the first cohort of student/participants in order to ascertain whether their own learning or their practice had been influenced by the risk-*e* curriculum and LC interventions. The student/participants (N= 13) were interviewed using 13 open ended qualitative questions (2 face to face and 11 via telephone). Two of the 13 questions became the focus for this study as they emphasised the notion of learning as change and whether the intervention had or was having a change on them or their practice. The design of the two studies is outlined in greater detail below.

5.1.1 Study One: Developing risk-*e* as a LO

The concept of the LO has been with us since the 1950's when Systems Thinking was introduced by Forrester from the Massachusetts Institute of Technology (MIT). Argyris and Schön (1978) subsequently published their leading work on Organisational Learning and Senge (1990, Senge, *et al,* 1995) promoted the principles and practice of developing the LO, writing extensively on what he has coined the 'Fifth Discipline' approach. Developing risk-*e* towards becoming a LO was partially a survival tactic undertaken to sustain (Senge and Scharmer, 2001) risk-*e* (Group A, see Figure 10 below) in the first phases of start up, and to find strength in a sense of 'community' (Lewin, 1946). Developing risk-*e* into a LO meant we had to become adaptive to events (Senge, 1989), be able to facilitate each other's learning and be

open to learning from negative as well as positive outcomes (*Organisation with a Memory,* 2001). In order to support risk-*e* as an emerging LO structures and systems had to be developed that would enhance performance (Dodgson, 1993), and demonstrate an 'absorptive capacity' (Cohen and Levinthal, 1990) to learn. This is represented in Figure 9 which demonstrates key activities throughout the first cycle.

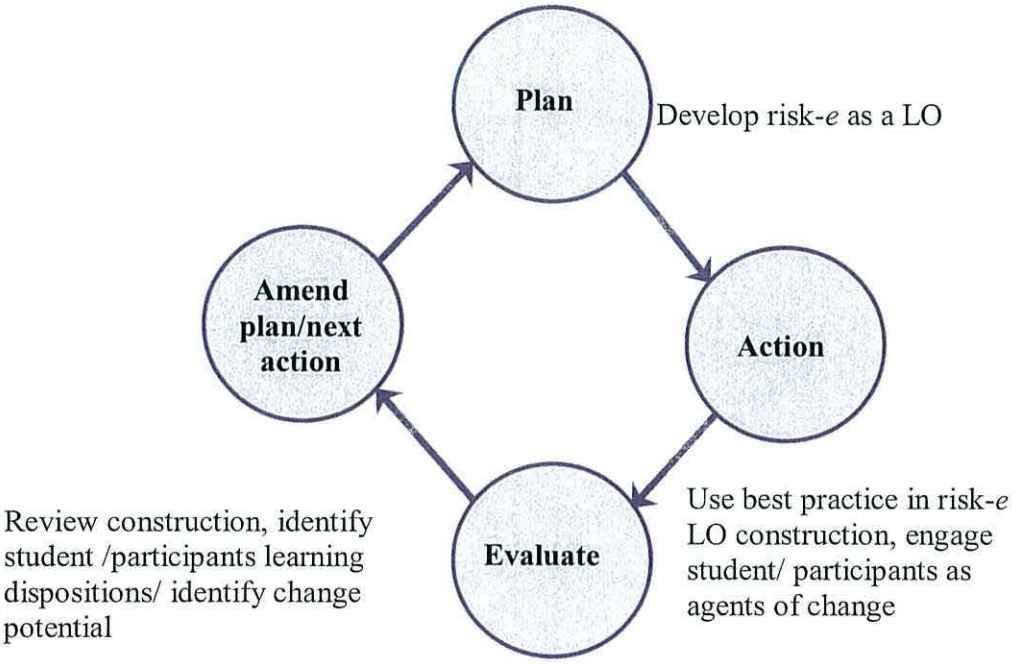

Figure 9: The first AR cycle in the PhD studies

Additional anticipated outcomes from adopting a LO approach included the development of new functional relationships and a reduction of feelings of isolation for both the student/participants and risk-*e* (Group A) (Mcardle, Burns and Ireland, 2003; Sheaff and Pilgrim, 2006). LO's are not limited by the presence of physical boundaries and can be represented by various communities within and outwith individual employment (Senge and Scharmer, 2001; Ryan, 1995), developing a face to face and virtual (blended design) risk-*e* LC provided an environment for LO principles and practice to take shape. LC's provided an essential structure to the LO in that they offered up a *'shared identity and common purpose'* (Kathia and Laszlo, 1997 p.13) and helped to develop a collaborative approach in the contribution to each other's learning (Kofman and Senge, 1995). The risk-*e* LC's made the sum of the individual parts more powerful and supplied an environment for transformational

learning (Senge, 1990) where the learner questioned and challenged their deep seated beliefs through discussion and peer review.

The individuals who made up risk-*e* were part of three distinct phases and groups (Figure. 10). These were as follows:

- risk-*e* Group A. This group comprised of UWB, WRP and KTP staff;
- risk-*e* Group B. This group comprised student/participant cohorts;
- risk-*e* Group C. This group comprised research participants from a wider community.

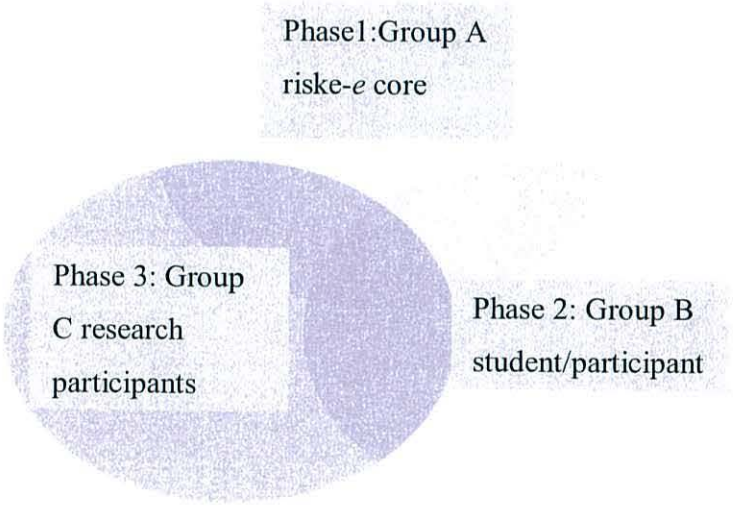

Figure 10: Developmental phases that show emergent risk-e membership

Establishing a LC augmented the impact of the risk-*e* curriculum by providing a facility for shared learning. In this shared learning environment students could make implicit and explicit connections to experiences and activities outside the classroom.

5.1.2 Phase 1: Developing the learning environment.

Practical issues addressed in developing LC's for risk-*e* student/participants included those associated with access; this was because student/participants were for the most part employed in dispersed rural locations and often had difficulty securing time away from the workplace to learn (Clark, 2002, Clarke, *et al*, 2005). As University students the student/participants already had curriculum support provided through University on-line systems, but discussions with the risk-*e* (Group A) who had prior experiences of overcoming barriers to teaching and (e-) learning, generated a 'general idea' that in order to create a LO a LC that aligned with LO principles would provide more deep and meaningful (Biggs 1987; Senge and Scharmer, 2001) learning opportunities (see appendices 1e & 1f).

Background

The risk-*e* LC's were developed and supported using a communication platform called FirstClass, this became the vehicle for a networked virtual LC. The FirstClass LC's gave risk-*e* tutors and student/participants the ability to effectively communicate and share valuable knowledge, resources and information via email, conferencing, directories, individual and shared calendars and online chats. It was anticipated these would help to create powerful online communities to enable individuals and groups of people to work and learn more effectively. The LC classroom was a Virtual Learning Environment (VLE) and like any classroom required managing. An aspect of classroom management involved the simple task of registering whether students/participants were turning up for 'lessons'. When we (Group A) realised that student/participants were not turning up, the opportunity to practically apply AR to find out why presented itself. The first question that was considered was whether the constructed environment met learning needs.

Sample and Methods

An evaluation of the LC was made possible through the FirstClass software application which had a "Who's Online?" feature; by monitoring uptake and quality of involvement with the e-learning environment it was possible to assess whether a sense of LC was possible. This first investigation was followed up by purposeful sampling (N= 11) of student/participants (of the N=13 total population N=2 frequently were already highly participative).

Data collection

Data was collected through telephone interviews that were triggered by asking the question '*why aren't you logging on*?' All data was transcribed verbatim, relayed back to the student/participant during the interview, and again at the end of the interview to allow for misunderstandings to be corrected.

Data analysis

Data was subjected to content analysis (Berelson, 1971) in order to identify themes and trends (Silverman 1993) that may have indicated why student/participants were not engaging with the LC. In accordance with AR practice and in order to ensure validity and arrive at a reliable interpretation of findings (Brink, 1991), data analysis was subjected to peer review discussion (Stier, 1991; Sayer, 1992) with risk-*e* Group A. This was extended to the student/participants in order to provide an ongoing opportunity to work collaboratively in locating solutions to identified problems (Lewin, 1947 II).

The responses provided by the student/participants (Appendix 4 a) demonstrated that (Sayer, 1992) while risk-e Group A had endeavoured to provide a facility to overcome access problems, the e-learning system had inherent problems of its own (Thomas, 1986; Pande and Hart, 1998), these were only made visible through action (Bhattacharya, Cowan and Weedon, 2000; Carr, and Kemmis, 1986; Cross and Steadman, 1996: Lewis, Perry and Murata, 2006).

Ethics

Student/participants were assured that all participation was voluntary and all data would remain both anonymous and confidential (Blaxter, Hughes and Tight, 1996). To comply with this all responses were number coded to ensure no one individual could not be identified. Permission was sought from the student/participants to use data to inform the development of the risk-*e* LC, to disseminate findings in research publications or conferences and to use within higher degree studies (ESRC, 2005).

5.1.3 Phase 2: Developing the learning culture:

Both the methods of teaching and learning (Group A) and the learning culture (Steiner, 1998) adopted by risk- *e*, emphasised a deep approach (Marton and Säljö, 1984) to learning from adverse incidents. Out of the discussions relating to the evaluation of the effectiveness of risk-*e* curriculum (Friedman, 2001) for the risk-*e* project, research that ascertained the learning dispositions (Bransford, *et al*, 2000) of the student/participants became an area of interest for the PhD studies. Having desired learning dispositions to learn from adverse incidents emerged as a general idea as having the potential to contribute towards a supportive generative learning culture (Appelbaum and Goransson, 1997; Donovan, Meyer and Fitzgerald, 2007).

Background

The LO has been described by many authors (Handy, 1995; Senge, 1990; Argyris, 1994; Kafman and Senge, *et al,* 1995; Snell, 2001; Nutley and Davies, 2001; Sheaff and Pilgrim, 2006) and although descriptions vary, common characteristics include learning from errors, continual improvement and transformation, an ability to encourage questions and share mental models. While the notion of OL conjures up group or systemic spread of learning, organisational learning has to begin and end with the individual (Friedman, 2001). In order to develop risk-*e* towards the desired LO state (Smith, 2001, b), consideration had to be given to the role of the individuals who made up risk-*e* as *'agents of organisational learning'* (Friedman, 2001 p. 398). In essence the characteristics of the LO reflect those of the individuals who make up the LO, identifying and achieving a single set of attributes in a LO beyond this study due to the complexity of human nature (Friedman, 2001).The risk-*e* (Group A and B) culture needed cohesive factors (Lewin, 1946m 1947 I) to establish cultural norms (Kolb, 1984). Factors that were made explicit from the outset included that the risk-*e* LO would have a collaborative (Susman and Evered, 1978) learning culture. This was realised through accepting the different approaches to working and the value placed on knowledge brought (Rapoport, 1977). Evidence was to be found in shared meetings, discussions, participation in learning opportunities (Jack, *et al,*2010), and was made unequivocal by encouraging proactive resolution of real world problems (Friedman, 2001). Holden (1990) states central to the 'groundwork' necessary for building a LO is inculcating the desire to learn and belong to the organisation with

which one is a part. Creating a supportive learning culture assures the breaking out of *'professional silos'* (Reason, 1999 p. 76) and helps to create agents of educational and organisational change (Elliot, 1991). Not all student/participants relished the idea of becoming learning change agents, some students were not convinced of their role as participants and simply wanted to 'be told how to do risk management'. The student/participants were seen as 'ideal' candidates for a change agent role not least because they were well placed to implement the government policies central to the study; but also as front line managers (Lewin, 1946; Pasmore, 2001) they would have a stock of tacit knowledge (Eraut, 2000) about learning from adverse incidents. In addition the student/participants had a sound working knowledge of high profile legal cases and public enquiries where organisations had not learned or were not open to learning from adverse incidents; this was a strong motivator for all of them to find alternative solutions to current practice. As managers the student/participants held posts that incorporated responsibility for *leading* risk management and ensuring individuals learned from adverse incidents in their employing NHS organisations, as such they held leadership roles which could be drawn on as a lever (Meadows, 1991) to bring about change. The student/participants also had organisational responsibilities for training in risk management; it was this role that integrated management with learning and teaching (French and Bazalgette, 1996) that provided a real opportunity to transfer what risk-*e* student/participants knew to the risk-*e* LO, and what they would come to know from risk-*e* to their own organisations. This knowledge exchange made the role of the student/participant one of *'bilateral initiative and control so that all involved work together as co-researchers and as co-subjects* (Reason, 1999 p. 75). Because of the role the student/participants played in their organisations and the emphasis on NHS organisations to demonstrate OL with regards to adverse incidents (*Organisation with a Memory*, DoH (2000); *Building a Safer NHS for Patients,* DoH (2002); *Making Amends,* DoH (2003); *Building a memory: preventing harm, reducing risks and improving patient safety NPSA,* (2005), it was important to ascertain whether the student/participants possessed the sort of learning dispositions (Biggs, 2003; King, 1995) needed to achieve success in creating a desired organisational learning culture that embraced a deep approach to learning from adverse incidents.

Sample

Student/participants (N= 13) who formed the first student cohort for the risk-*e* project, agreed to participate a study that would explore their current approaches to teaching and learning.

Data collection

The qualitative questionnaire was distributed to all student/participants (N=13) before and after the risk-*e* tHE induction course, participation was N=13.

Data analysis

All data was transcribed verbatim and subjected to qualitative interpretative analysis (Guba and Lincoln, 1989). The four themes identified for the original pre and post qualitative questionnaire, *Understanding learning, Understanding experience, Tacit knowledge and Sharing knowledge*, were used to guide the development of a set of 'deep' (Biggs, 1987) learning indicators (Table 3) that aided data interrogation and interpretation (Schwandt, 1994). The indicators focused data analysis to find responses that compared with descriptions of a Learning Organisation (Senge, 1990; Argyris, 1994, Kafman and Senge, 1995, Snell, 2001), Learning Community (Kathia and Laszlo, 1997), deep and surface approaches to learning (Marton and Säljö, 1984; Ramsden, 1992) and single and double loop learning (Argyris and Schön,1978). In accordance with AR practice (Lewin, 1946, 1947 I, Susman and Evered, 1978) the emerging constructions were discussed with the student/participant and with risk-*e* colleagues to ensure validity reliability of findings. This process identified socio-historically constructed (Guba and Lincoln, 1989) espoused theories (Argyris and Schön, 1978) or mental schemas (Eisener, 1991) that demonstrated how student/participants were learning and brought the student/participants into the AR cycle of co-creation.

Table 3: The 'deep learning indicators' used to analyse data

Theorists	Questionnaire design	Deep learning indicators
Learning pedagogues	Biggs (1987). Marton and Säljö (1984). Prosser and Trigwell (1999) Ramsden (1992) Benner (1984) Eraut (1994, 1998, 2000, 2007)	Deep approaches to learning, multi method experiential reflective/reflexive, shared, action orientated. Evidence of expertise/tacit knowledge/schemata/patterning
Org pedagogues	Lewin (1946,1947 I and II, 1952) Aryris and Schön (1974) Eisener (1991) Senge(1990), Senge, et al, 1995, Kafman and Senge(1995) Snell (2001) Reason (1994) Kathia and Laszlo (1997) Friedman (2001) Schein (1985,1991,1992, 1993)	Evidence of collaboration, planning, action, evaluation, change agent Use of Theories of Action understanding of mental schemas Promoting a Learning Organisation- for example through collaborative shared learning, being part of or promoting a Learning community/ collaboration Change Agent activities Learning culture (promoting learning, learning from mistakes)
Researchers	Lincoln and Guba (1985) Erlandson, et al. (1993) Steier (1991) Lewin (1947 I and II) Senge and Scharmer (2001).	Sociohistorically constructed (data reflected the real world of the learners) Constructions/patterns/schemata (data could be identified as learner constructions) Demonstration of Reflexivity in data Examples of Action/Reflection in data Examples of being part of Learning Community/collaboration
Others	Organisation with a Memory, DOH (2000), Building A Safer NHS For Patients DOH (2002) Making Amends DOH (2003). NPSA (2005) Building a memory: preventing harm, reducing risks and improving patient safety.	Knowledge and or application of policies and practices such as Learning from mistakes, sharing learning, learning culture.

Methods

The pre and post teaching intervention questionnaire (Appendix 4b) was devised to extend what was known about approaches to learning and teaching (Erlandson, *et al,* 1993) risk management. The questionnaire was devised to be deeply reflective, focusing the student/participant along a particular line of thought so that they were required to reflect (Steier, 1991) on their own approach to learning (Biggs, 1987) and to consider an incident(s) where they had learned experientially. After peer review with risk-*e* Group A and departmental colleagues, questions that did not add to reliability were removed. This reduced an original thirty questions to fourteen. Some questions were either linked so that a different perspective of the same question could be garnered (7, 11, 14), or repeated (3 and 13). The questions were deemed to have 'face validity' and were meaningful (Silverman, 1993). Validity was strengthened by providing the student/participants with an opportunity to clarify and confirm or disconfirm data (Morse, 1991). In addition questions *focused* thought rather than led answers (, 1993, Brink, 1991). This 'focusing' also enabled the clustering of questions under the themes of:

- Understanding learning;
- Understanding experience;
- Tacit knowledge;
- Sharing knowledge.

A working hypothesis was that if student/participants had the learning dispositions to adopt deep approaches to learning from adverse incidents, they might cascade this approach throughout their employing organisation in their role as teachers (Hoover, 1996; Marton and Säljö, 1976, 1984).

Ethics

Confidentiality was assured to all research participants. Questionnaires (see Appendix 4b) were number coded to ensure anonymity. Participation was voluntary and could be withdrawn at any time, the opportunity to discuss any or all of the research was

positively encouraged. Permission was sought to disseminate research findings and to use data for higher degree studies.

5.1.4 Study Two: Learning as Change

Ascertaining whether risk-e was developing as a LO included evaluating the impact or spread of change agent activities. This was determined by the level of uptake in new teaching and learning practices within employing organisations, evidence of this was deemed to demonstrate personal mastery, shared vision (Senge, 1990) and adaptive learning (Bransford, *et al,* 2000).

This second study built upon the findings from Study One, returning to the student/participants some five months later. The aim was to identify if there were any further changes in student/participant own (first order) learning (Cross and Steadman, 1996), and whether the student/participants had been able to bring about any change in teaching or learning practices (second order) in their host organisations (Elliot, 1991).

Background

Recognition that risk management in the NHS needed to be structured on a business model (Field, 2003) resulted in the DoH and the Welsh Assembly Government (WAG) introducing a set of risk management standards that the WRP assess in Wales (HSC 1991/123). Assessment amounted to a method of checking printed evidence of meeting minutes, committee structures and written procedures, this process had inherent dangers of developing routineised automaton practices (Barshi and Healy, 1993) with the potential for negative outcomes. As a method of assessment it did not prove integration of learning and action and at a surface level (Biggs, 1987) it was easy for the standards to reflect what the organisation believed (espoused theories) in rather than what the organisation did (theories in action) (Agyris and Schön, 1974). This view was supported by anecdotal evidence from NHS risk managers and clinical directorate managers, often frustrated by the fact that despite many guidelines and protocols in place, the same adverse incidents and near misses are repeated, often involving the same staff in the same or similar situations.

As a complex adaptive system (Lathem, *et al,* 2003) the NHS requires risk managers to possess the ability to forward plan while managing diverse often unpredictable

behaviour and events. An adaptive management style provides a realistic option to risk management; especially as adaptive management concepts and theories have been applied to social and institutional perspectives by incorporating organisational and action learning (Jacobson, 2003). Also adaptive management is perceived as facilitative which recognises the unpredictability and variability of change (Jacobson, 2003) which is a constant in risk management practice. Adaptive learning is distinct from adaptive management, in the context of organisational learning adaptive learning brings about incremental change but may be restricted to 'single loop' (Nutley and Davies, 2001) learning. The AR methodology encouraged generative (double loop) learning (McNiff, Lomax and Whitehead,. 1998). This study evaluated whether the student/participants were, through the process of learning how to learn, becoming adaptive double and triple loop learners (Fazey, Fazey and Fazey, 2005). An indication of this was whether they perceived learning as a vehicle for the cognitive changes required and could demonstrate this by incorporating learning about learning in their own teaching practice

Sample

Student/participants (N=13) of the risk-*e* first student cohort agreed (N=2 face to face, N=11 via telephone) to participate in qualitative interviews.

Data collection

All data was collected under the auspices of naturalistic enquiry (Guba and Lincoln, 1989) requiring reflection and evaluation as part of the research process (Lewin, 1946, Susman and Evered, 1978). Because of this deep approach to data collection, learning on the part of myself (researcher/participant) and learning on the part of the student/participants became part of the *whole* hermeneutic process (Marton and Säljö, 1976, Fazey, Fazey and Fazey, 2005). The mental process involved in thinking about the research questions encouraged myself and the student/participants to engage with double loop learning (Argryis and Schön, 1974; Schön, 1983, 1991) about how to resolve problems in learning from adverse incidents.

Data analysis

The data was analysed using the analytical frame (Thomas, 2004; Neuwelt, *et al,* 2005) presented in Table 4.

Table 4 analytical frame used in study two

	Funnelling questions	Key questions
First level changes	Q. 1 – 5	Q. 6 What do you think of learning as change? (espoused theories)
Second level changes	Q. 7 - 12	Q.13 Since starting the tHE course have there been any changes to your teaching practice? (theories in use)

Ultimately the questions were deemed to identify first and second level changes that the student/participants may have undergone. Questions (6 and 13) were seen as key questions, these were coded as espoused theories of learning and theories in use (Argyris and Schön, 1974). Differentiating responses this way enabled the identification of not just changes in thinking, but changes in practice (Speck, 1996).

Methods

The student/participants (N= 13) from the first student cohort were interviewed using a schedule (Appendix 4 d) of 13 open ended qualitative questions (2 face to face and 11 via telephone). Some of the questions replicated those asked previously but two (which were the focus for this study) emphasise the notion of learning as change and whether the intervention had or was having a change on them or their practice. The interview schedule format was flexible to facilitate inter-subjective discussion (Lincoln and Guba, 1985) with the student/participants; enabling them to relate experiences in a way that was comfortable and made sense to them (Silverman, 1993). To maintain the interview focus key words (Bell, 1993) relating to 'change' and 'learning' were repeated. Each question required the student to consider the following.

1. What do you understand adaptive managers to be like?
2. What is organisational change?
3. What is cultural change?
4. What is organisational change in the context of risk management?
5. What is cultural change in the context of risk management?
6. **What do you think of learning as change?**
7. Could sharing knowledge bring about change?
8. Could telling others what you know reinforce what you know?
9. Does learning contribute to the 'learning organisation'?
10. Does sharing knowledge enhance workplace performance?
11. What does learning as an individual mean?
12. What does learning as a collective mean?
13. **Since starting the tHE course have there been any changes to your teaching practice?**

The first part of the interview schedule (questions 1 – 4) was intended to 'funnel' (Foddy, 1993) responses for Q. 5 where student/participants were asked 'What do you think of learning as change?' Questions 6, 7, 8, and 11 were brought forward from the questionnaire from study one in order to ascertain whether the previous responses had changed at all. Questions about learning acted as a 'funnel' (Foddy, 1993) to question 12 intended to uncover whether any of the student/participants were making tangible changes in their teaching practice. In order to contribute towards validity, responses to each question were relayed back to each student/participant so they could confirm (or disconfirm and alter) data (Blaxter, Hughes and Tight, 1996). Trustworthiness (Polit and Hungler, 1989) of findings was enhanced when explanations to questions were given, for example for question 6, students who did not understand the phrase 'learning as change' were asked if learning could bring about change, thus '*compatible constructions*' (Erlandson, *et al*,1993) were arrived at. This approach also brought the student/participants into the AR cycle of co-construction (Reason and Bradbury, 2001).

Ethics

In line with research ethics (ESRC, 2005), each student was reassured of anonymity and confidentiality. Permission was given for data to be recorded (taped or written); consent was gained for data to be used for dissemination of research findings through conference and publication and used for PhD studies.

5.2 *S*econd Cycle: Change-in-Practice Studies

The second AR cycle consisted of two studies that were undertaken in the 'field'. The studies involved identifying changes (Study Three) and in some instances bringing about changes (Study Four) in practice. Study Three focused specifically on the tHE risk-*e*, as an 'intervention' (Lewin, 1946) and examined a perceived dissonance in espoused theories about individual change and changes in practice. Study Three utilised observations/findings from multiples sources including, field research during 2004/05 peer observation of student/participant teaching practice and attending Risk Manager Network meeting in which student/participants were involved. The fourth study in this cycle flows from questions generated from the findings of Study Three and consisted of two phases, the first phase focused on whether student/participants saw themselves as educational leaders. The second phase tested the student/participants espoused educational leadership theories from phase one in the field; this phase of the study demonstrated whether educational leadership opportunities could act as a lever to overcome barriers that had been identified in Study Three. A more detailed outline will now be given of the two respective studies embedded in this AR cycle.

5.2.1 Study three: exploring a dissonance in espoused theories and theories in use

After scrutinising the process involved in assessing organisational evidence of achieving risk management standards with WRP colleagues, it became apparent that there was a lack of integration of learning from experience. The process allowed for the assessment to reflect what organisations believed (espoused theories) was being achieved rather than what may be happening in practice (theories in action) (Agyris and Schön, 1974). This disconnect was exacerbated by a general surface approach taken to learn about risk management in the NHS (Von Krogh, Ichijo and Nonaka, 2000) which may have translated into a surface approach to learning from adverse

incidents (Nicollini, *et al,* 2009). The practice of surface learning and surface assessment was however open to change through a process of reflexive and reflective processes (Brown, Fry and Marshall, 1999; Mezirow, 1990). Study Three was a longitudinal examination of the first student/participant cohort's learning dispositions actioned in practice. The study compared the early success apparent in Study Two with the observed 'reality' of practice in the field, obtained during peer observation teaching sessions and at Risk Management Network (RMN) meetings. The study was divided into two phases and used two data sources:

- Phase one utilised field research undertaken during observations made during peer observation teaching sessions which demonstrated evidence of a theory practice gap.
- Phase two highlighted that by returning to the student/participants through interviews, it was possible to identify some of the specific issues influencing teaching practice and gain a greater understanding of the action research process.

The study commenced with a second 'reflective turn' of the AR cycle (Figure 11).

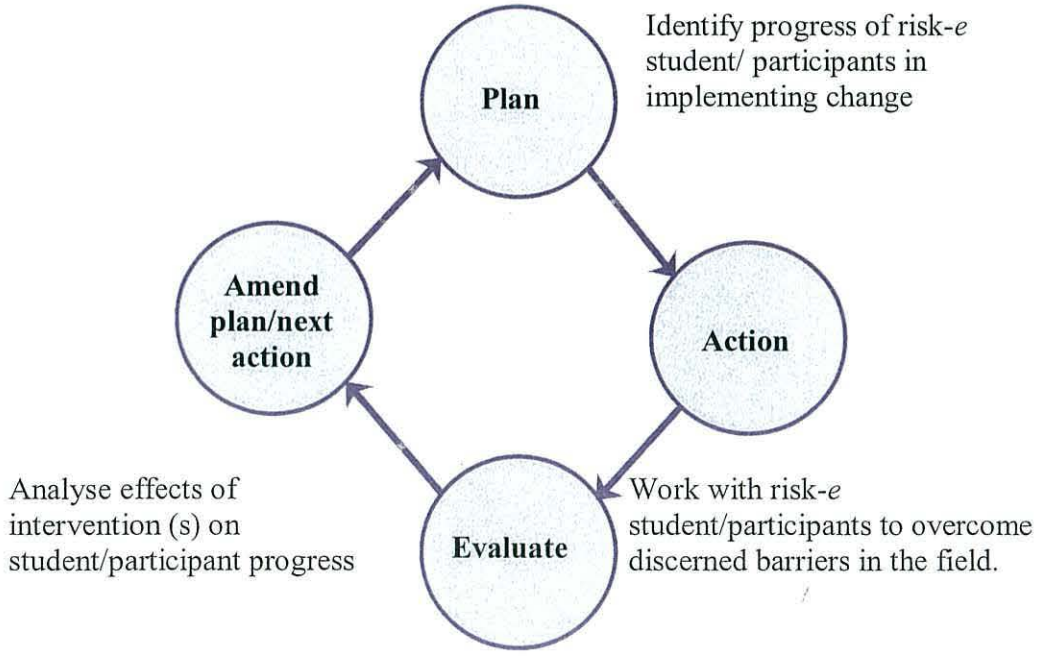

Figure 11: Second AR Cycle

Background

The tHE: risk-*e* teaching and learning programme and LC were all designed to engage student/participants to learn in a deep and meaningful ways (Ramsden, 1992).The underpinning AR methodology combined with mentorship and peer teaching were chosen to facilitate collaboration and support student/participants as agents of educational change (Elliot, 1991; Iles and Sutherland, 2001). The LC, supported through e-learning was designed to bring together a network of educators and mentor educators who would cascade their skills and knowledge to NHS colleagues. These initiatives had begun to develop the risk-*e* LO culture, peopled by like minded individuals making up the LC's (Kathia and Laszlo, 1997) which provided the structure required for LO principles to take shape (Senge, 1990).

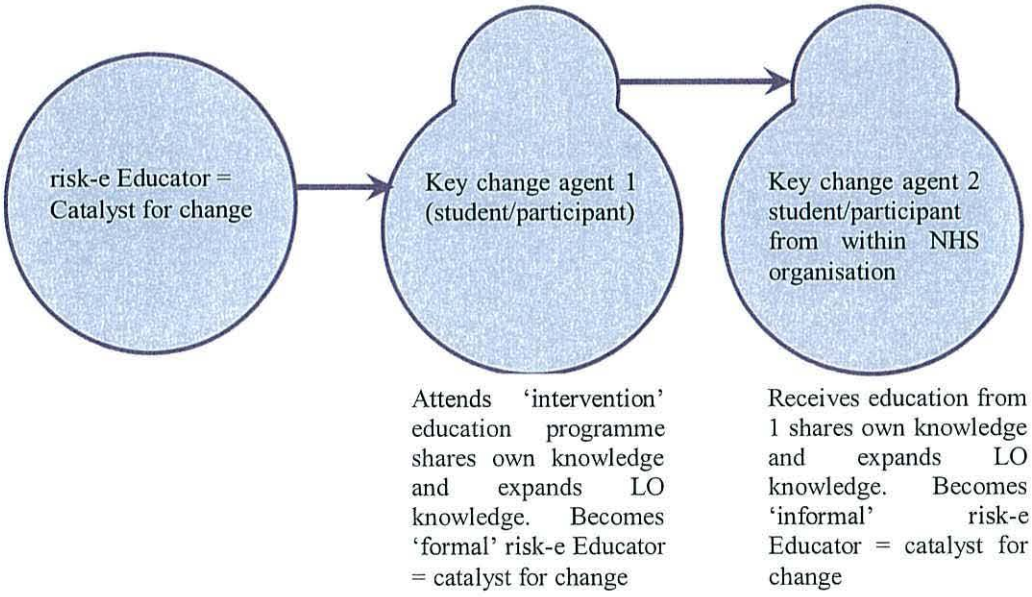

Figure 12: Anticipated model of the risk-e LO

The cascade effect of the risk-*e* educator, presented in Figure.12 above, is similar to that experienced through 'training the trainers' programmes. In these programmes knowledge from the trainer is maximised by training another to have the skills to train in order to teach a specific subject, (Baron, 2006; Jones and Lawson, 1998)

There is often an assumption that students apply learning in the workplace when they return to their employing organisations (King, 1995) and certainly the results from

Study Two indicated this to be the case. Due to an ongoing reflexive evaluation of the field (Becker and Geer, 1982) I became aware of an incongruence between 'espoused theories' and 'those in use' (Argyris and Schön, 1974) that led to a realisation that an assumption that student/participants were now actively engaged as educational change agents may not have been accurate. This emerged initially during NHS Risk Management Network (RMN) (Appendix 2e) meetings; I had been invited to these as an 'outsider' (Frankenberg, 1991) to get a better understanding of the risk management systems in the NHS. Unfortunately the membership of the RMN meetings were populated mostly by NHS staff, I had no ethical permission to formally collect data from this source but the meetings served as an opportunity to become further immersed in the field. Because of this I observed student/participants in a different role from that as risk-*e* teacher or change agent. In these meetings the student/participant role was one of RMN member alongside senior, adjacent and junior colleagues. In the RMN meetings student/participants did not challenge the existing system of adverse incident reporting that they had indicated previously to be insufficient. Neither did they raise concerns about a blame culture that they had previously indicated was persistent and an obstacle to learning from mistakes. The realisation that student/participants were not prepared to challenge things they had previously stated as unsatisfactory caused a 'shift' in my understanding of tensions within the 'field' (Lewin, 1947 II). This experience led to an unexpected opportunity (Becker and Geer, 1982) to conduct field research with the student/participants during peer observation of teaching practice. Study three used two data sources and is presented chronologically.

5.2.2 Phase one: Peer teaching review (field observations)

Sample

Phase one involved peer observation (N=7 taken of the N=11 first student cohort) of student/participants during 2005/6 as part of their ongoing assessment (Appendices 5a and 5b).

Data collection

Acting as researcher participant (Gans, 1991) I collected field data in the social setting (employing organisations) of the student/participants during peer observations

teaching sessions. The data comprised of reflective field notes in the form of observation summaries and discussions with the student/participants based on peer teaching observations.

Data analysis

After peer observation and discussion, I reflected on the session and recorded any 'significant' thoughts (constructs) of what I considered to be happening. The data was revisited a third time and after having been interpreted (Lincoln and Guba, 1985) in light of previous understanding of the social situation and literature, consistent themes were noted. Collecting and analysing field data was an iterative interpretive process reflecting the *'shifting emphases dictated by new discoveries'* (Becker and Geer, 1982 p.240).

Methods

Phase one involved observing (N=7) student/participants in the field in order to identify whether observations of a disconnect in espoused theories and those in use (Argyris and Schön, 1974) in RMN meetings were also present in teaching practice. The experience of conducting field research in this context caused a 'duality' in purpose as I was actively assessing student/participant teaching practice *'while trying to take mental notes'* (Gans, 1991 p. 57) and brought me as close to phenomena as was possible (Gans, 1991*)*. The insights gained through this process directed a series of qualitative interviews for phase two of this study.

5.2.3 Phase two: Peer teaching review (interviews)

The *prima facie* validity of field observations (Becker and Geer, 1982) were explored through qualitative interviews and questions answered via email, these focused on four open ended questions based on an assumption that the student/participants were experiencing barriers to implementing change. The theme of *barriers* to bringing about change had been developed as relating to two dimensions, internal (self) and external (organisational systems, colleagues, students), both dimensions appeared to be fuelled by feelings of vulnerability and fear

Sample

The student/participants (N=11) were approached to answer a set of questions (see Appendices 5c and 5d) relating to implementing changes in their teaching practice and being part of the risk-e LO. Response to requests resulted (N=7) for research participation.

Data collection

Data was collected via telephone interviews (N=5) and (N= 2) questionnaires completed via e-mail. The qualitative questions were the same in each instance.

Data analysis

Given the methodological stance adopted not to divorce personal and professional knowledge and experience from data interpretation (Lincoln and Guba, 1985; Becker. and Geer 1982), knowledge about the student/participants working environments and working conditions was used to inform the development of a data analysis frame (Thomas, 2004). The frame included classifications (Neuwelt, *et al,* 2005) that included organisational environments that were *unsupportive, supportive in theory* and *supportive in practice*. Having this as an interpretative frame (Lincoln and Guba, 1985) helped to make sense of the data as it was produced. Data analysis within the frame included identification of embedded patterns which were clustered into responses and depicted in two concept maps. In accordance with the adopted hermeneutic approach (Guba and Lincoln, 1989; Lewin, 1947 I) the second map was produced by subjecting the first to further scrutiny with risk-*e* (Group A) colleagues using a process known as the '5 Whys' (Ohno, 1988) and reflecting on the anecdotal evidence and field data obtained over the eighteen months.

Methods

The same qualitative questions were asked of (N= 7) student/participants, all data was transcribed verbatim. In order to ensure reliability and validity data was relayed back to the student/participant so as to provide an opportunity to confirm (or disconfirm and alter) data. This also provided the opportunity for co-construction of findings (Lewin, 1946,1947 I). The four open ended questions included a probe question (3),

this was used enable student/participants to expand on question one. The questions were:

1. What barriers did you experience when you tried to practically implement learning theories into risk management practice?

2. How did you overcome these barriers?

3. What suggestions would you make to future students regarding implementing learning into risk management practices? (probe)

4. The risk-e project is predicated on incorporating teaching and learning into risk management by developing key change agents who can cascade the process within their organisations. Do you feel you have been part of this and if so how?

Ethics

As with previous studies, the ethical considerations (ESRC, 2005) that were observed for both phases in this study included assurance of confidentiality and anonymity for all student/participants, and the opportunity to discontinue with data collection or participation at any time. Consent was sought for the data to be disseminated and used for higher degree studies, and for dissemination of research findings through conference and publication. With regards field studies, in accordance with research ethics (Frankenberg, 1991) as soon as I became aware of peer observation assessment as an opportunity to collect data I informed the student/participants of my intentions, sought and gained permission to continue.

5.3 Study four: Change agents, educational leadership and learning elites

The second study in this cycle explored the ability for student/participants to be 'agents of change'. The study began with the identified 'problems' from study three which were perceived as barriers to the student/participants being agents of change. This study incorporated actions taken to help student/participants overcome these barriers. This is presented in the AR cycle (Figure 13 below).

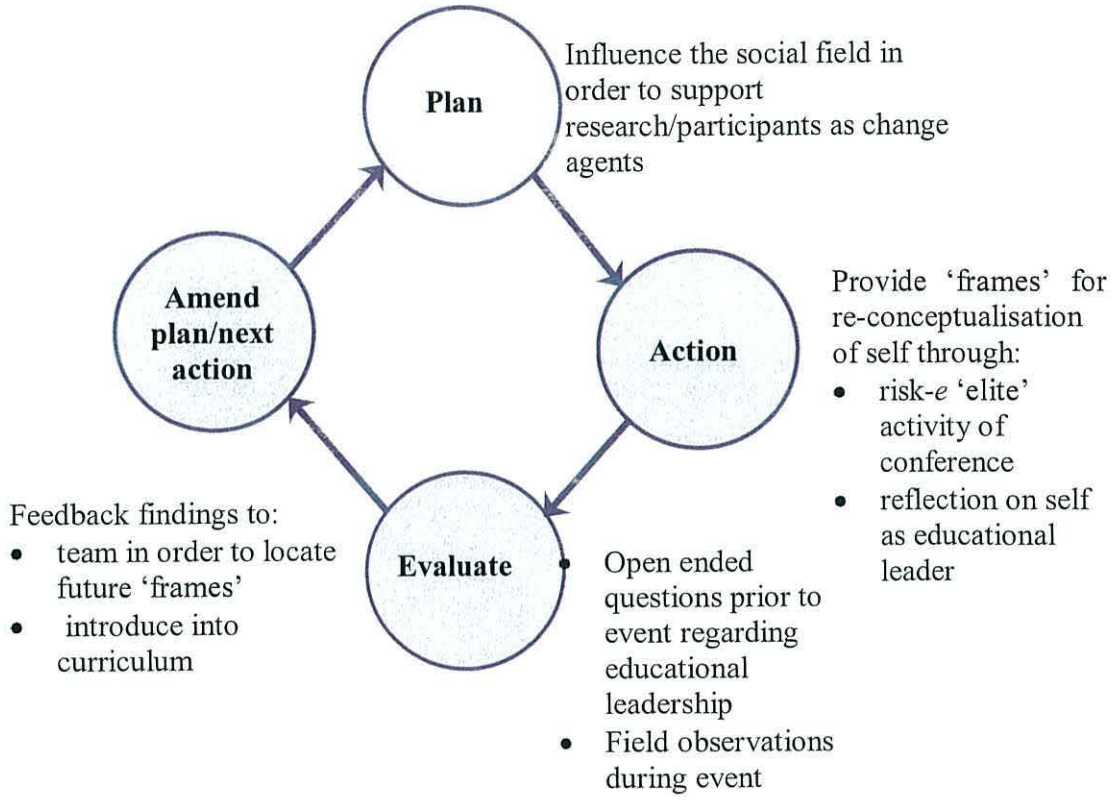

Figure 13: Lewin's AR cycle applied to fourth study

The role of a 'change agent' for the student/participants was determined to have two distinct values (Bourdieu, 1989), these were educational leadership and being part of a learning elite. How these values manifest were seen to be dependent on the context of two fields that were representative of the organisational field in which the student/participant were situated and the field of the risk-*e* LC. The risk-*e* LC was framed as having the potential for becoming a mobilising elite group (Strang and Jung, 2002) so elitism was determined value 'A'. The student/participants were perceived as having the potential to portray educational leadership, educational leadership was therefore determined as value 'B'. These values (A and B) were thought of as possible status symbols (Bourdieu, 1989; Eraut, 1994), with which to provide leverage (Lewin, 1947 (II)) for the student/participants to be successful in their change agent roles. The values are presented below in Table 5.

Table 5: The values and fields of study four

Values	Context/Field	Transfer via ↓	Context/Field
A =Learning elite	Risk-*e* LC	Change Agent →	Host Organisation
B = Educational leadership	Risk-*e* LC	Change Agent →	Host Organisation

The values determined how espoused theories of educational leadership exhibited by the student/participants, were put into action in the 'elite' frame of the risk-*e* international research conference (Goffman, 1974; Snow and Bedford, 1992).

Background

Understanding what it means to be a change agent requires an appreciation of the disposition towards achieving improvement, transformation, variation and modification (Angehrn and Atherton, 1999). Change agents are the driving force, the negotiator the mediator the manager (Bate, Bevan and Robert, 2005); they are indifferent to change for its own sake seeing this as leading to reform fatigue (Rushmer and Davies, 2004). Change agents introduce innovation into a society or organisation and can be internal / external to the organisation, work on an individual basis or be part of a team (Caldwell, 2003). The cascade effect, desired in social change programmes is often brought about through the utilisation of change agents (Hartley, Benington and Binns, 1997) with a variety of roles described by Caldwell (2003) that include educator, facilitator and innovator. It was in the role of educator that student/participants interacted with colleagues across the organisation, this factor provided the potential for the greatest impact on practices associated with adverse incidents as it also put them in the role of leader (Bate Bevan and Robert, 2005). Angehrn and Atherton (1999) identified a differentiation between the high level skills and competencies of change strategists and change agents, the former having a more directional function (technical, problems solving, team building, communication, influencing, decision making and people skills) and the latter a more hands on participative function with the ability to empower others. It was hoped the student/participants would utilise all qualities, so as to imbue a sense of '*personal*

purpose' (Fullan 1993, p.14) and influence decision-making (Bate, Bevan and Robert, 2005 p. 33) about learning from adverse incidents in their employing organisations.

Organisational position, AR methodology and LC were the three 'levers' (Bradbury, 2001) being used to support changes in learning from adverse incidents, these would only have a limited impact (McTaggart, Henry and Johnson, 1997, Smith, 2001,a) if the student/participants lost confidence in their change agent role and a sense of power outside of the risk-*e* environment (Bandura, 1985). The risk-*e* LC had sufficient *'psychological safety'* (Singer and Edmondson, 2006 p. 17) for student/participants to reveal failures, ask questions, and raise concerns in order to accelerate shared learning from adverse incidents; this same psychological safety could not be assured in the workplace which may have created a re-socialisation effect (Lewin, 1947 II, 1952) on student/participants causing a return to pre- risk-*e* patterns of behaviour in the workplace (King 1995).

Study Four explored internal barriers (within the student/participant) and external barriers (within the environment) (Lewin, 1947 II) to the change agent role, these were defined as:

- *Internal barriers* were based on a lack of understanding of what change agent meant, or resistance due to a perceived lack of value of the change agent role within the workplace field. Identified as 'personal' by Lewin (1947 II)

- *External barriers* were determined as having unsupportive colleagues and experiencing power struggles within the workplace field. Characterised as 'motoric' by Lewin (1947 I and II).

Both types of barriers had the potential to lead to a dissonance in mental models (Steiner, 1998) resulting in a resocialisation of student/participant behaviour in the workplace fields (Bateson, 1972). Re-motivating student/participants required *'tensions'* to be more *'creative'* (Senge, 1990 p.142) than constrictive, so student/participants could identify constraints and powerlessness, see the gaps between existing and desired states and build a bridge between the two (Senge, 1990). In order to influence both internal and external barriers, an opportunity was provided for student/participants to *reflect on* the role of educational leadership and rethink the

value of the change agent role. This was carried out in an environment (see Appendices 1a and 5e on international conference) that enabled the student/participants to enact the role of educational leader while sharing knowledge with other practitioners (Zeichner, 2001). According to Senge (1990) learning organisations need to be populated with leaders who are responsible for learning, who understand leadership is about everyone developing *'systemic understandings'* (Senge, 1990 p.356). Educational leaders enable truth finding through empowering others (Senge, 1990) and design learning processes so that critical issues can be dealt with in line with personal mastery (Senge, 1990). Educational leadership is also defined by (as leadership is generally) the ability to express influence in order to achieve goals (Tannenbaum, Weschler and Massark, 1961 p. 24) and to motivate others to contribute to organisational effectiveness (Dorfman and House, 2004). Leaders of 'movements' (Bate, Bevan and Roberts, 2005) in healthcare recognise that leadership processes are particularly important, this is especially true in leading change associated with the reporting and learning from mistakes (Singer and Edmondson, 2006)

In Study Four the student/participants were encouraged to move towards a personal mastery of *'lifelong generative learning'* (Senge, 1990 p. 142) with expertise that moved beyond skill or competence to one of vocation (Smith, 2001,(b)). In addition it was hoped student/participants would perceive organisational and individual learning as having shared goals (Grieves, McMillan, Wilding, 2006).

risk-e LC as a Learning Elite

Upon joining risk-*e* the student/participants 'signed up' essentially to a social movement that aligned with their values and aspirations (Bate, Bevan and Robert, 2005) regarding learning from adverse incidents. The positive value (Bourdieu, 1989) placed on being part of the risk-*e* LC by student/participants was evident in Study One, this had increased as student/participants had begun to see positive outcomes from their changed teaching practice manifest in organisational activities. Being part of the risk-*e* LC meant being part of a learning elite, membership was meritocratic and opportunities were provided for student/participants to become leaders in education. Leaders in education are also teachers (Senge, 1990), taking what they have come to understand and sharing that knowledge with others. In essence however belonging to

an elite group means more than being part of an advantaged or superior faction (Burton and Higley, 1987), whatever the determinants are for membership, members must have an amount of power (Scott, 2008). Awakening the student/participants to an image of themselves (Knock, 2001) as an educational leader and belonging to an elite group, meant providing the student/participants with the opportunity to feel powerful, this was enabled through 'acting' (Goffman, 1959) alongside luminaries of risk management education, leading politicians and clinicians.

The risk-*e* conferences formed part of the risk-*e* field, as jointly constructed social realities they helped to provide symbolic meaning (Knock, 2001). The international conference was constructed as an elite 'frame' (Bate, Bevan and Robert, 2005); 'reality' was defined through activities that might affect student/participants change agent roles back in the workplace (Bate, Bevan and Robert, 2005). Although the hosting of the international conference required the collaboration, support and contribution (Lewin, 1946, Reason and Bradbury, 2001, Gaventa and Cornwall, 2001) from risk-*e* (Group A and B) colleagues, my role during this phase was more than a participant observer within each 'field', as it involved 'strategic leadership' (Bate, Bevan and Robert, 2005) in an attempt to manipulate aspects of the 'field' (Lewin 1947 II, Baskerville 1996) and influence operant behaviour. Acting in this normative way provided legitimacy to assumed power in this and other social situations (Knock, 2001 p 49).

There were two phases to this study; phase one looked at educational leadership as the literature suggested that for the student/participants to be successful agents of change they also needed to see themselves as an educational leader (Rogers, 2005; Stacey, 2000; Appelbaum and Goransson, 1997; Bate, Bevan and Robert, 2005; Hancock, *et al*, 2005; Hartley, Benington and Binns, 1997). Student/participants also had to demonstrate '*a learning-oriented approach rather than a coping approach* (Edmondson, 2003) as it was here where their power base lay as learning oriented leaders '*have substantial power to influence*' (Singer and Edmondson, 2008 p.19)

Phase two examined learning elites and explored whether membership and involvement with an elite group stimulated and supported the change agent role.

5.3.1 Phase one: Educational leadership (interviews)

Sample

Purposeful or *'judgment sampling'* (Honigmann, 1982 p. 80) was used in the selection of key informants (Burgess, 1982 (b); Mead, 1934). In total N= 19 student/participants (representing the two student cohort groups) were approached and asked to answer two open ended questions relating to educational leadership as part of their change agent role, the response rate was N=4 out of each student/participant cohort groups (N= 8 in total).

Data collection

Student/participants were offered face to face or telephone interviews (N=2), student/participants who were unable to make time for this provided responses via email was (N=6). In order to assure a measure of reliability and validity all interviews were transcribed verbatim, relayed back to student/participants for clarification and verification (Silverman, 1993) and to continue the hermeneutic dialogue (Lewin, 1946). Data from emails were used in their entirety and the same opportunities for clarification were provided.

Data Analysis

All data was content analysed (Becker and Geer, 1982; Berelson, 1971) with the aid of a heuristic (Table 6) that contained two separate key concepts categories. The first related to 'Personal constructs' (attributes or traits) and could be termed espoused theories; the second refers to 'Process constructs' which were evidenced in behaviour and could be linked to theories in use. These were developed from an 'emic' view (Lincoln and Guba, 1985) of the literature that was searched using the terms educational leadership/leadership/organisational leadership (Lewin, 1947, I and II; 1948, Lewin, Lippitt and White, 1939; Nanus, 1992; Watkins and Mortimore, 1999; Senge, 1990; Light and Cox, 200; Rosenstiel and Koch, 2001; Sadler, 2001; Sternberg, 2005; Brown, Fry and Marshall, 1999; Covey, 1989; Heifetz, 1994; Schein, 1992; Stacy, 2000, Ramsden, 1992; Rogers, 2005) to find descriptors that might aid individual and organisational learning from adverse incidents.

To ensure a degree of trustworthiness the 'emic' concepts were subjected to discussion/ review with (N=7) University colleagues, comparing concepts to the nine

'eras' (Sadler, 2001) of leadership (Personality era, Influence era, Leadership behaviour era, Situation era, Contingency era, Transactional era, Anti-leadership era, Culture era, Transformational era). Allocation of the student/participant responses within each of the construct categories were peer reviewed by University colleagues and changed if deemed appropriate (2 changes were made overall), they were then aligned and recorded under each key concept. For the student/participants (N= 4) who did not provide data for the first question (*what is an educational leader)* it was inferred (Schwandt, 1994; Guba and Lincoln, 1989) in their answer to the second question (*are you and educational leader*) where they answered yes and gave a description, amounted to what they thought educational leadership to be.

Each data analysis session provided an opportunity to identify the 'frame' (Goffman, 1974) for individual student/participant's action theories of educational leadership. These were later combined in order to represent the student/participants as a group.

Table 6: Concepts and constructs used to compare and locate student/participant responses

	Personal concept (espoused theories)	Processes concept (theories in use)
C O N S T R U C T S	innovative /visioning	problem identification/ solving/proactive
	motivational	action orientated
	erudite/wise/adaptive/willing to learn	experimental/ exploratory/experiential
	learning from failure as well as success	learning from failure as well as success
	persuasive/influential/authoritative /negotiator	challenging and testing existing assumptions
	designer/steward/teacher/facilitator	systems/holistic approach/ team/shared learning/interdependence
	trustworthy/real	rewarding/acknowledging /caring

Individual student/participant educational leadership frames (Goffman, 1974, Johnston, 1995) were identified through a process of data analysis which compared and aligned their responses to the constructs in Table 6.

Methods

The study continued to use a hermeneutic constructivist paradigm so as to make sense of individual and shared experience of social phenomena (Guba and Lincoln, 1989;

Burgess, 1982 (a)). The interpretation of data utilised Goffman's (1959, 1974) social theories of frame analysis as well as symbolic capital (Bourdieu, 1989).

The two open ended questions *what is an educational leader* and, *do you see yourself as an educational leader,* were ordered to bring the student/participant to a particular *'mental orientation'* (Johnston, 1995 p. 217) that would require them to think about what educational leadership might be and then make a cognitive step towards thinking of themselves in this role. Thinking of themselves as educational leaders created powerful social symbols belonging to the category of elitism known as the expert elite (Scott, 2008) and may have contributed to a positive influencing force (, II, 1947) within the organisational field. It was anticipated the responses would make visible *'collective behaviour frames'* (Jonhnston, 1995 p. 218) and so shed some light as to whether educational leadership was part of student/participant change agent skill set.

Findings from Phase One of the study were presented as a reflection of the student/participants to the student/participants at the risk-*e* international conference (Walter and Marks, 1981). The reflection as a presentation demonstrated the tensions created by outer or motoric region and inner or personal region (Lewin, 1947, II) associated with educational leadership/change agent roles. The purpose of delivering the findings from Phase One to the student/participants in this environment was to deliberately 'stir up' (Lewin, 1947 I) the 'field' in order to stimulate change.

5.3.2 Phase two: Being and educational leader (field observation)

Phase two in this study involved observing the student/participants in the field. The field was the risk-*e* international research conference which had been 'framed' (Snow and Benford, 1992) in such a way so that risk-*e* (Group A and B) continued to focus on reducing adverse incidents through shared *'corrective action'* (Snow and Benford, 1992 p. 137). The student/participation presentation of self (Goffman, 1959) in the field provided the opportunity in which to observe whether the espoused theories of educational leadership were actually played out in practice.

Sample

Actions demonstrating learning elite activity were sought from all (N= 19) student/participants (both student cohort groups), these included an invitation to both

submit papers for presentation and attend/contribute to the conference workshops. Student/participants were invited to contribute to the conference via the online LC (FirstClass) and the risk-*e* website. Two student/participants (one from each student cohort) submitted papers and following peer review approval, presented their own experiences of changing teaching (and with it clinical) practice. In total N=11 student/participants attended and were observed during the conference. Out of the N=8 student/participants who provided qualitative data in phase one, N=6 (two did not attend) were observed in the 'conference field', this allowed the identification of espoused theories of educational leadership becoming theories in use.

Data collection

Observational data of everyday interactions (Goffman, 1974) were collected in the conference field (Gans, 1991) over two days. This was an iterative (Becker and Geer, 1982) data collection process guided by the student/participant 'presencing roles' previously identified. Data was collected through the sensitised lens of formerly observed or disclosed internal (personal region) or external (motoric region) barriers (Lewin, 1947 II). During data collection observed behaviour that corresponded to student/participant action theories was highlighted. The field notes were augmented by reflective summaries, written at the end of day one and day two in order to find explanations (constructs) on what I thought had played out over the day. Unlike previous studies, the data could not be relayed back to the student/participants, this would have been too intrusive during the conference proceedings and would have interrupted *'the smooth flow of activity'* (Goffman, 1974 p.39) of observations.

Data analysis

As with previous research practice significant observations, such as behaviour commensurate with espoused and offered roles or in direct contrast to them, were noted and highlighted. Analysis was aided by the presencing roles (Scharmer, 2008) presented in Table (7), this was developed and peer reviewed with risk-*e* (Group A) colleagues to enable location of student/participants within the conference frame. Post conference data was subjected to content analysis in order to identify whether observed behaviour compared with behaviours that aligned with educational leadership.

The data was interrogated a third time with a University colleague who was present during the two day conference. As part of this process any inconsistencies were removed and interpretation of findings (Lincoln and Guba, 1985) were arrived at through a more rigorous understanding of the social situation and parts played therein (Goffman, 1959, 1974).This process contributed to overall reliability of the findings, as thematic patterns derived from the situation in which they were found were opened up to scrutiny by a colleague who would challenge assumptions I may have developed.

Table 7: Presencing roles of N= 6 student/participants alongside their previously identified 'espoused' roles

Student/participant contributions	Personal = espoused theories	Desired Behaviour = theories in use
S/P 1 = think tank convenor and think tank topic and research participant	innovative /visioning/designer/ steward/teacher/facilitator/ erudite/wise/adaptive/willing to learn	problem identification/solving/ proactive/systems/holistic approach/team/shared learning/interdependence
S/P 2 = presenter and attendee and research participant	designer/steward/teacher/ facilitator/influential/ authoritative/negotiator erudite/wise/adaptive/willing to learn	systems/holistic/approach/ team/shared learning /interdependence/challenging and testing existing assumptions
S/P 4 = think tank convenor and attendee and research participant	designer/steward/teacher/ facilitator/erudite/wise/adaptiv e/willing to learn	systems/holistic/approach/ team/shared learning/ interdependence/experimental/ exploratory/experiential
S/P 5 = think tank topic and presenter and attendee and research participant	innovative/visioning/designer/ steward/teacher/facilitator /influential/authoritative /negotiator/erudite/wise/ adaptive/willing to learn	problem identification/ solving/proactive/systems/ holistic approach/ team/shared learning /interdependence challenging and testing existing assumptions
S/P 6 = think tank topic and attendee and research participant	innovative /visioning/ erudite/wise/adaptive/willing to learn	problem identification/ solving/proactive/experimental /exploratory/experiential
S/P 8 = think tank convenor and attendee and research participant	erudite/wise/adaptive/willing to learn designer/steward/teacher/ facilitator	experimental/exploratory/ experiential/systems/holistic approach/ team/shared learning/interdependence

Methods

During Phase two, field notes were taken in order to record naturally occurring data (Burgess, 1982 (a). Field observations were sensitised (Guba and Lincoln, 1989; Reason and Bradbury, 2001) to finding evidence of educational leadership roles that had been identified as espoused theories in Phase One, once identified these were deemed as educational leadership theories in use. Evidence indicated enduring transformative behaviour (Appelbaum and Goransson, 1997) which was more likely to become embedded in subsequent organisational practice. Educational leadership roles were located in actions that could be carried out in the conference field (presented in Table 8). These included suggesting topics to be discussed in think tank sessions, acting as convenor to co-ordinate and present findings back to the conference for think tank sessions, presenting their own research findings as part of their cycles of learning as risk-*e* student/participants, or simply attending the conference.

Table 8: demonstrating roles in which espoused theories of leadership from Phase 1 could be actioned in the field.

Personal - trait role	Processes – behaviour role
innovative /visioning *Contributing to topics to be discussed in think tank session –*	**problem identification/ solving/proactive** *Contributing to topics to be discussed in think tank session –*
motivational	**action orientated**
erudite/wise/adaptive/willing to learn *Attending the conference – conveying willing to learn and share learning*	**experimental/exploratory/experiential** *Attending the conference – conveying willing to learn and share learning*
learning from failure as well as success	**learning from failure as well as success**
influential/authoritative /negotiator *Presenting research -*	**challenging and testing existing assumptions** *Presenting research -*
designer/steward/teacher/facilitator *Contributing to topics to be discussed in think tank session –* *Acting as convenor –* *Presenting research -*	**systems/holistic approach/ team/shared learning/interdependence** *Contributing to topics to be discussed in think tank session –* *Acting as convenor –* *Presenting research -*
trustworthy	**rewarding/acknowledging /caring**

Ethics

All research continued to be conducted in line with sound research ethics and principles (ESRC 2005). Participation in each study was on a voluntary and permission given basis, each student/participant was reassured of anonymity and confidentiality. Consent was gained for data to be used for research degrees, and dissemination of research findings through conference and publication. Any misleading impressions (Jarvie, 1982) were removed through opportunities to discuss participation before, during and after research activities.

5.4 Third Cycle: Developmental Studies

The fifth and final study in this cycle produced significant PhD outcomes which resulted in the production of tools to support individual and organisational learning from adverse incidents. During the first phase of Study Five I piloted an approach that facilitated individual learning from adverse incidents, during the second phase I piloted a simulated dual learning and reporting system that would contribute towards organisational learning from adverse incidents. These two phases are presented under 'Quality Improvement through Questioning and Analysis (QIQA). In the third phase of Study Five I developed 'Whole System Learning Indicators' (WSLI) a tool for practitioners to support individual and organisational learning from adverse incidents.

5.4 1 QIQA

Located as an intervention within the AR cycle (see Figure14), QIQA incorporated creative exploration (Culvenor, 1997 (a)) of learning practices in an environment in which NHS staff could celebrate and communicate what they were doing *right*. QIQA involved reflection and dialogue about workplace practices in a shared learning environment that had no *'significant embarrassment or threat'* (Appelbaum and Goransson, 1997, p.116). This meant that covering up of events was avoided and learning was achieved.

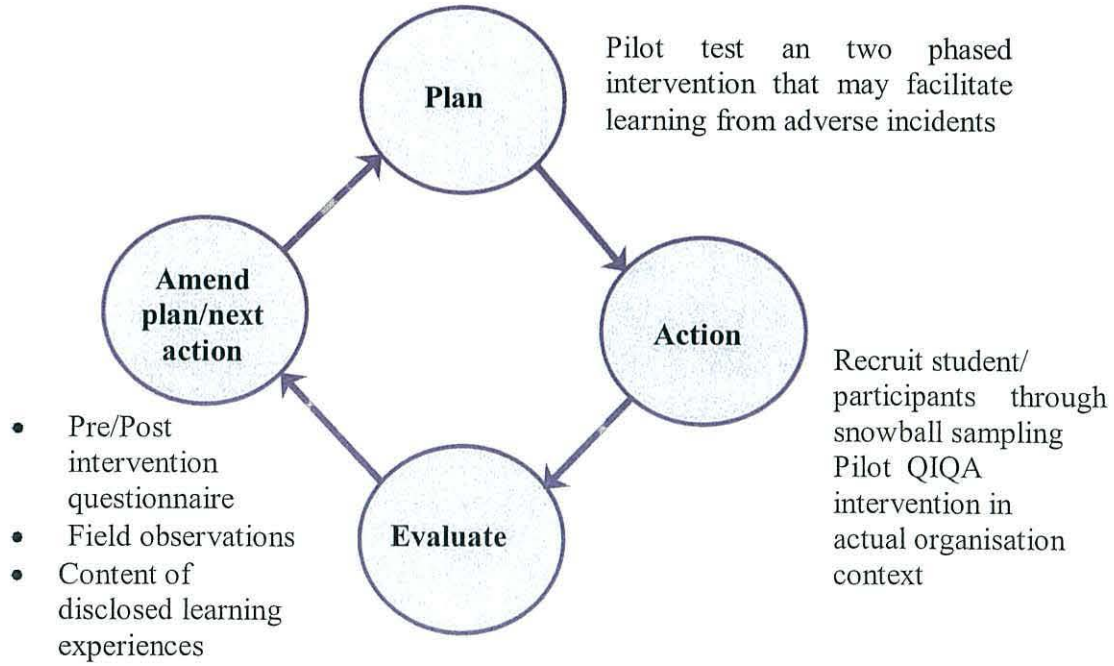

Figure 14: The QIQA intervention located within the AR cycle

Phase one incorporated a teaching intervention (Braithwaite, *et al,* 2006) that included propositional knowledge about learning from adverse incidents and reflective discussion (Light and Cox, 2001). Phase two utilised methods that would allow an organisation to capture innovation and improvements from adverse incidents. This was brought about through a re-framed (Goffman, 1974) adverse incident reporting function that required student/participants to report an adverse incident in which they had been involved, and think reflectively about this with the 'frame' (Bransford, *et al,* 2000) of searching for positive improvements and innovation on practice.

The two phases of QIQA were designed to provide employees with an opportunity to demonstrate how they are improving on practice through continuous learning from an adverse incident, in adverse incident situations this may remove some of the stigma attached to the adverse incidents itself.

Background

People often adopt strategic defence routines to cover-up mistakes which enable them to avoid *'embarrassment'* or '*threat*' (Grieves McMillan and Wilding, 2006 p.97) that might be associated *with* the mistake. These avoidance actions become '*mechanisms for psychological survival'* (Grieves McMillan and Wilding, 2006 p.97) and are viewed as normative over time; the problem with them is that they also lead to a range of unwanted consequences such as repetition of mistakes. While there is value on uncovering organisational defence routines, the importance of reconstruction after an adverse incident is as important. Instead of *'re-constructing a world which IS problematic a world of deficits, failure, and blaming*' (Hosking and Morley, 2004 p.11) there are opportunities for more positive building blocks using creative collaborative learning processes (Hosking and Morley, 2004 p.11). This learning is deemed transformative (Mezirow, 1991) and results in changes not just in thinking but in behaviour (Donovan, Meyer and Fitzgerald, 2007). Transformative Learning (TL) aligns well with AR and Framing due to the points of convergence between the processes involved. These are located at points of activity that either cause a 'stirring up' (Lewin, 1947 II, 1952) of the field, a flooding out when an existing frame doesn't fit any more (Goffman, 1974; Imel, 1998) or a 'disorientating dilemma' (Meizerow, 1991). They meet again with reconnaissance (Lewin, 1946) or self examination and critical assessment that come with challenging assumptions (Meizerow, 1991; Argyris

and Schön, 1978). Collaborative action is fundamental to TL and AR as it allows the discovery of new ways of acting and reconstructing of the self (schemata). TL requires that new concepts and behaviours be born out of the old (Hosking and Morley, 2004), as far as learning from adverse incidents is concerned this necessarily requires the sort of safe environment (Schön, 1983, 1991) that allows the surfacing of long held assumptions so that reframing and reconstruction can occur (Donovan, Meyer and Fitzgerald, 2007)

Scrutiny for TL learning opportunities from adverse incidents prevalent NHS require examination of RCA and FMEA(Vincent, 2003, 2004), this surfaces two key questions that RCA and FMEA ask of the learner. In RCA the learner reactively learns from an incident and *reflects* upon it by asking:

- What are the causal sets of each of all possible effects?
- What went wrong?

Both questions will produce information in relation to an adverse incident and may engage participants in rational discourse *if the facilitator is mindful of or skilled in searching for learning across a range of taxonomies.* Criticisms of RCA include that it infers a single root cause (Vincent, 2003) and perhaps with it a single individual to blame, giving the false impression that the rest of the system is unaffected (Vincent, 2004). The RCA process has also been criticised for dampening any creative intuitive understanding of why mistakes have been due to micro management (Nicollini, *et al*, 2009) that accompanies the process.

FMEA learning is a *proactive* event requiring extended abstract *cognitive* creative processes. Provision of FMEA training in the NHS is more ad hoc than RCA and relies largely on external consultants who require the learners to ask:

- What are the effects of all of the possible causal sets?
- What can go wrong?

FMEA is forward looking and may be more inclined to engage the learner in transformative learning as it draws on previous experience, again the skills of the facilitator are important as criticisms of the approach includes lack of clarity (Vincent, 2004) for busy professionals who need to know what they are expected to do.

The most significant aspect of learning that surrounds both RCA and FMEA is an emphasis on events that have or can go *wrong*; this provides a frame (Goffman, 1974) which denotes a negative connotation to learning (Benner, 1984, Vincent, 1997) and contributes to the overall culture of learning around adverse events (Barnard, 2008). Shifting the emphasis from 'wrong' or 'negative' aspects of incidents in order to bring a balanced approach to learning (Hosking and Morley, 2004) means re-framing learning so that there are opportunities to consider what has gone well (Evans, *et al,* 2006).

Piloting QIQA with one of the student/participants in their host organisation meant that an action from study four to lend visible support to student/participants to augment their change agent role was also addressed. Exerting influences on a field that rested on the perceived power (Sheaff and Pilgrim, 2006) of the student/participant was achieved through raising the '*symbolic capital'* (Bourdieu, 1989 p. 16) of the student/participants profile within the host organisation. This was achieved by representing (Gherhardi and Niclolini, 2000) the student/participant as someone connected to a high profile (ESRC funded) research project that included patient safety and risk management gurus as part of the broader risk-*e* network. The value or '*positive valance'* (Lewin, 1947 I p.471) placed by the group (QIQA students) on this intervention also determined levels of wanting to participate in or associate with student/participant change agent activities post QIQA piloting. This would have proven significant in contributing to the critical mass of support the student/participant needed to influence the larger '*central force field'* (Lewin, 1947 I p. 471) or *'field of power'* (Bourdieu, 1989 p. 14) located within the workplace.

5.4.2 Phase One: teaching intervention (questionnaires)

Sample

The approach was piloted in 2006 in England as part of a peer observation teaching session with N= 20 student/participants (anaesthetists), these student/participants were not part of the previous student/participant cohort groups. Although not generalisable to a larger population, as a purposeful sample (Blaxter, Hughes and Tight, 1996; Erlandson, 1993) they were deemed *"good" informants* '(Morse, 1991 p.132) and able to provide a depth and quality to the data required. The basis on which they were

declared as such was because they were all anaesthetists so belonged to a single professional group and body, worked together in the same organisation, had exposure to the same working conditions and risks as each other and had undergone the same professional education. The only difference that delineated the student/participants were levels of professional seniority.

Data collection

All data was collected under the auspices of naturalistic enquiry (Guba and Lincoln, 1989) within the third AR cycle that required reflection and evaluation as part of the process (Lewin, 1947 I; Susman and Evered, 1978). The student/participants were asked open ended questions relating to learning and how this may contribute towards a safety climate, the questions were:

Q1. Do you think understanding how things go wrong can contribute towards a safety climate? If you have answered yes please say why.

Q.2. Do you think understanding how we learn can contribute towards a safety climate? If you have answered yes please say why.

Q.3. Do you think a learning culture contributes to a safety climate? If you have answered yes please say why.

Data analysis

The interpretivist approach (Park, 2001) adopted in data analysis formed part of the ongoing hermeneutic cycle (Lincoln and Guba, 1985). Analysis included establishing whether QIQA could operate as a mechanism with which to construct a new world view, or re-frame (Goffman, 1974) learning from adverse incidents and re-state values of learning (Bourdieu, 1989). Data was compiled against each pre/post list of questions followed by an initial content analysis (Berelson, 1971) that enabled the identification of 'yes' or 'no' responses, elaborations to questions provided a rich source of data. What became apparent during this initial interrogation was a significant number of the student/participants related negative experiences to learning from adverse incidents. This sensitised (Guba and Lincoln, 1989; Reason and Bradbury, 2001) the second interrogation to search for indications of positive and negative learning experiences.

For the second interrogation the data was collated to represent a 'case' or 'profile' under each individual student. This enabled identification of 're-framing' (Goffman, 1974; Hosking and Morley, 2004) post teaching and was viewed as an indication that learning from adverse incidents shifting from a negative to a positive experience. Categories used for clustering responses included:

- Identification of 'yes' or 'no' response to questions
- Identification of positive and negative experiences
- Identification of single, double and triple loop type responses (which might determine the sort of learning undertaken in the organisation)

Part of the hermeneutic co-constructive process (Guba and Lincoln, 1989; Schwandt, 1994) resulted in discussions with academic colleagues to determine changes in frame. From these I concluded that each student/participants frame should begin from a 'starting point' or 'baseline' with which to ascertain what change (if any) had taken place. Defining a starting point meant looking for responses that indicated the 'original frame' of the student/participant, from this the post intervention data could be interpreted as belonging to the 'same-frame' or was evidence of 're-framed' (Sayer, 1992) thinking about learning from adverse incidents. This is depicted in the Table 9.

Pre QIQA intervention original frame			Post QIQA intervention		
Yes	No		Yes	No	
Positive	Negative		Positive	Negative	
Single	Double	Triple	Single	Double	Triple
Original					

Table 9. Frames with which to allocate student responses to QIQA teaching intervention

The data was searched for student/participant *values* (Bourdieu, 1989) on learning from adverse incidents as these were considered to be something that might determine the nature or tensions (Lewin, 1946 1947 I and II; Bourdieu and Wacquant, 1992; Gherhardi and Niclolini, 2000) within the employment field. The emergent values were;

- Value 1 = a value placed on learning itself
- Value 2 = a value placed on changing practice
- Value 3 = a value placed on wider implications of learning from adverse/critical incidents (indicating systems thinking and double loop learning in the student)

Through repeated interrogations, emerging patterns in the pre and post intervention data revealed barriers to learning from adverse incidents, post intervention data had an additional pattern which was identified as 'Learning in a no-blame culture'.

Method

Adverse incidents present an opportunity to view systems in the light of past events '*current weaknesses and future potential problems*' (Vincent, 2004 p .3); recreating a learning system that follows an idealised design (Ackoff, 2001) might result in combining aspects of both RCA and FMEA techniques (Vincent, 2004). To this end, QIQA incorporated a reflective looking back on adverse incidents, which meant how learning took place and what was learned from them. Reflexive learning incorporated what was being learned and how it was being learned in the here and now, and visioning aspects to learning which included, how you will learn, apply learning, share learning, and look for learning opportunities in the future.

QIQA was designed to:

- provide a safe environment that allowed for open discussion
- foreground learning with the possibilities of a new positive frame of reference
- ensure new frames of reference were born out of understanding and questioning of previous experiences

Learning encounters were meant to engage learners in a meaningful way so as to assure deep (Entwistle and Ramsden, 1983; Marton and Säljö, 1976, 1984; Biggs 1988) and transformational (Mezirow, 1991, Boyd and Myers, 1988) learning experiences. The content was designed to:

- relate to and draw on real work situations (Ramsden, 1992) such as reported adverse events and 'undiscussable' (Argyris and Shon, 1978; Alberti, 2001) situations or events that students felt were not open to critical review
- be aligned to existing knowledge and experience of reporting and learning from adverse incidents and (Miller, 1956; Tsoukas ,1994; Taylor, 1985; Prosser and Trigwell, 1999)
- be kept to a manageable amount to achieve de-routinisation (Eraut, 1994) and avoid overload (Schmidt, Norman and Boshuisen, 1990; Balla, 1990(a), 1990 (b))

The QIQA (teaching) episode incorporated an overview of QIQA followed by propositional knowledge that linked prior knowledge of RCA, FMEA and experience on safety climate and learning systems. The session included triple loop learning (Sheaff and Pilgrim, 2006), learning environments and learning cultures. Teaching methods used a combination of learning media to trigger (Meizerow, 1990) and anchor learning, and reflective/reflexive discussion that facilitated both 'Figureuring out' and creative abilities to emerge (Eraut, 1994; Steier, 1991; Bransford, *et al,* 2000)

In order to answer ontological questions associated with adverse incidents, the pilot was conducted at the 'local' level, this enabled 'socio-historically' constructed realities to be accessed (Guba and Lincoln, 1989) in the organisational 'field' (classroom) in which one of the student/participants were employed. QIQA formed part of a series of studies within this thesis that investigated "*the conditions and effects of various forms of social action and research leading to social action*" (Lewin, 1946 p.150). Epistemological questions (Guba and Lincoln, 1989) regarding what was known and could be known about adverse incidents required capturing experiences through questioning (Kolb, 1984;Susman and Evered, 1978; McTaggart, 1996) a common understanding of the phenomena under scrutiny.

5.4.3 Phase Two: learning and reporting (interactive data collection)

Sample

The student/participants N=20 who had participated in Phase One were approached to participate in a new simulated 'dual' reporting system that afforded prospects for learning, (N=10) of the N=20 original student/participant group volunteered.

Data Collection

Qualitative data was collected using a data collection tool that asked the student/participants to recall and report an adverse incident (reporting stream one) or critical event (reporting stream two) in which they had experienced a positive learning outcome. They were also asked to record the impact the experience of disclosing events in this way may have had on them.

Data Analysis

The data was transcribed verbatim; to aid analysis data was clustered under headings of, adverse learning incident or critical learning incident according to the content of disclosure and impact of disclosure the learning experience may have had on the student (Watkins and Mortimore, 1999). The data was scrutinised for evidence of learning constructs that may have occurred or developed from the named incident (s) and whether the experience to try dual reporting may have influenced mental schemas (Gick and Hollyoak 1983; Johnston, 1995) associated with learning from adverse incidents.

Methods

The students were invited to experience the 'dual reporting' element of QIQA, this required them to, reflect and 'report' on an incident they had been personally involved in which there had been adverse consequences, and, reflect and 'report' on this incident to look for positive consequences and or improvement on practice. If the student/participants were unable to locate a positive improvement/innovation within the adverse incident they had recalled the student/participants were invited to disclose an example of practice where an insight or improvement was gained in a *critical* incident (Benner, 1984, Eraut, 1994). The emphasis on positive learning moved student/participants away from what had gone 'wrong' in practice and provided the

student/participants with an opportunity to re-construct their mental schema (individually and then collectively) to thinking about what had gone right; this allowed for a disconnection from previous negative learning experiences. Reporting was framed with key questions intended to guide students towards '*"mindfulness" – the ability to become reflexive by sensing the unexpected in its earliest stages'* (Mathews and Thomas, 2006 p.186). The questions were fore-grounded with a statement that asked the students to consider the questions in the frame of positive outcomes for their practice:

> *'Think about an aspect of your practice that has had good outcomes'*

This was designed to 'frame' (Goffman, 1974) their thoughts to consider adverse incidents as having a good outcome and in some way break the pattern of a 'recursive relationship' (Harkema, 1003 p.344) with previous experiences.

The key questions were explained to the students as being useful post an event (reflection on action) or during an event (reflection in action or reflexivity). For the purposes of the study the students were required to be reflective, the reflective questions are underlined.

- *What did I do? (reflective)*
- *What am I doing? /reflexive)*
- *How did I do it? (reflective)*
- *How am I doing it? (/reflexive)*
- *Was there any way I could have done it better? (reflective/ visioning)*
- *Is there any way I can do this better? (reflexive/visioning)*

The questions were also designed to elicit tacit knowing about adverse and critical learning incidents so as to locate possible innovations in practice (Bate and Robert, 2002; Harkema, 2003) that might otherwise remain hidden. In order to identify any early indications of transformative learning (Mezirow, 1990) the students were also asked to comment on what effect (if any) did having an opportunity to report a positive as well as a negative incident have on them, the responses from this were added to data collected from the pre and post intervention questionnaires.

Ethics

The QIQA student/participants had been informed by the risk-*e* student/participant who had arranged the teaching session, about the risk-*e* project and that this teaching intervention had developed from the research associated with the project. This was reiterated at the start of the session and explained as an opportunity for 'deep change' within the organisation through transformation at the individual level (Donovan, Meyer and Fitzgerald, 2007). As per previous ethical considerations (ESRC, 2005), participation in research activities was voluntary and on a permission given basis, this meant that opportunities to disseminate research findings and use as part of ongoing research degrees was possible. Students could opt in or out at any time and were welcome to stay on a CPD learning basis alone. Confidentiality of data and participant anonymity were assured.

5.4.4 Phase three: WSLI

The WSLI are theoretically founded on a hypothesis generated from using the Deep Learning Indicator (DLI) data analysis tool produced in study one (phase 2) and from the field experiences (Lewin, 1947, I) from Studies Three and Four. The hypothesis generated was that if practitioners had a tool that supported them to facilitate their own and others learning from adverse incidents, this may reduce the reoccurrence of adverse incidents and contribute to individual and organisational learning. The tool in question would need to indicate whether there had been sufficient 'deep' learning (Biggs, 1987, 2003) from adverse incidents; as such the tool would need to focus upon deutero learning (Haho, 2004; Visser 2007) and encompass more than one learning domain. This meant finding ways in which to measure double loop or triple loop learning so that deeply held assumptions about learning from adverse incidents could be challenged (Aryris and Schön, 1974) and where appropriate, changed. The WSLI is presented under headings that correspond with the three refinement stages;

- Stage one: a review of the literature up to the current date,
- Stage two: identification of a new set of indicators
- Stage three: locating the model in domains and taxonomies

The three stages are presented in the AR cycle diagram below (Figure 15).

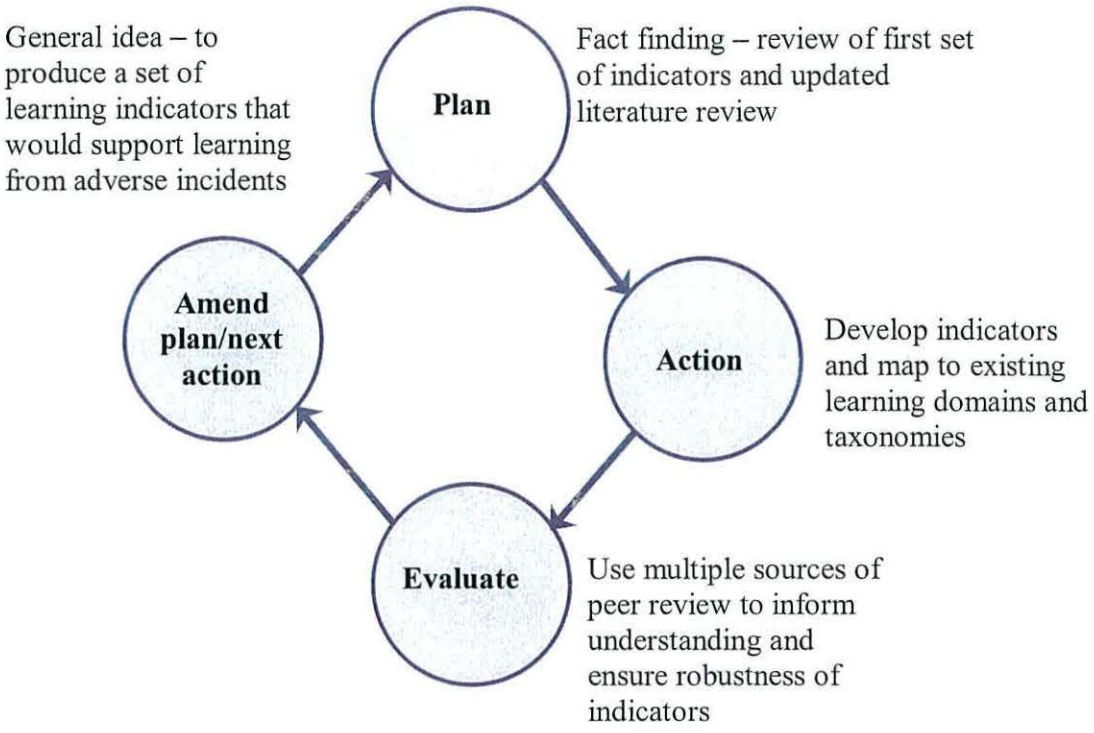

Figure 15: Lewin's AR cycle depicting stages of development for the Whole System Learning Indicators

Stage one: a review of the literature up to the current date

Government reports published after 'Organisation with a Memory, DOH (2000)', continued to underline the importance of learning from mistakes (*Building A Safer NHS For Patients DOH,* 2002; *Making Amends DOH,* 2003; *Building a memory: preventing harm, reducing risks and improving patient safety, NPSA* 2005) but the practical application of policy recommendations remained hard to achieve in practice. The NPSA's National Reporting and Learning System (NRLS) was rebuked by the National Audit Office NAO (2005) for failing to meet predicted deadlines in the delivery of important learning messages and reports to NHS organisations. The NPSA was subsequentially denigrated by the Select Committee on Public Accounts (2006) for providing little actionable learning for local NHS organisations or accruing and disseminating good learning practice from NHS Trusts, a view endorsed by Sir Liam Donaldson in the policy ' *Saftey first: a report for clinicians, patients and healthcare*

managers' (DoH 2006). Since 2008 the NPSA augmented their reporting system and RCA training to include report writing tools, templates and training from their National Clinical Assessment Service on lessons learned in case assessment, but there were no moves to evaluate whether learning has taken place either during the adverse incident learning sessions or whether learning has been implemented in organisations post and adverse incident enquiry, this was left to NHS organisations themselves. The NPSA performance on providing information from adverse incidents was hampered by underreporting from health care staff (Singer and Edmondson, 2006). This was picked up by a media that claimed doctors and nurses were not reporting either due to a lack of feedback from the NPSA or, because they thought that they were the only person who knew about the incident or near-miss and so did not think there was any need to let anyone else know (Guardian, 2009). Under-reporting became a political priority and by May 2009 not only were death rates published for the first time from every hospital in England but 'new levels of transparency' were called for (The Independent, 2009*)*. This new level of transparency translated into mandatory reporting of patient safety incidents to the NPSA in England, and from April 2010 brought an end to voluntary reporting (Wise, 2009). Unsurprisingly, the NPSA (www.npsa.nhs.uk. March 2010) was able to declare an increase in reporting from March 2009 – March 2010 in England (from 379,345 to 473,162) and Wales (from 22,500 to 27,049). Following Lord Darzi's report *'High Quality Care for All'* (2008) the NPSA published a policy entitled 'Never Events', these are a list of events that should never happen during NHS health care provision. 'Never Events' were introduced through phased implementation into the NHS in England in April 2009. At the time of writing a new framework for these were outlined for 2010/2011. RCA has become the most often used method of learning from adverse incidents in the NHS, the tools and external training for which is provided by the NPSA. A recent study (Nicollini, *et al*, 2009) on the effectiveness of RCA in selected NHS Trusts in England, stated that the linear cognitive learning model adopted by RCA leads to micro management, with the result that actions are not implemented or produces '*only temporary changes'* (Nicollini, *et al*, 2009 p.5). This implies that if RCA does not encompass learning across other learning domains assessment of learning using the current model may also prove to be limited and inconclusive. The report concludes that there is *'little support that what is learned on a local level circulates effectively*

across the organisation, and certainly not across different organisations' (Nicollini, *et al*, 2009 p.5).

Emerging curriculum

The challenge of providing education in patient safety was taken up by the Canadian Patient Safety Institute, who gathered together a team of experts in 2007-8 to work collaboratively on producing a learning competency framework that could be used across professional disciplines. The framework was constructed around six subject areas (culture, teamwork, communication, risk management, human and environmental factors, adverse incidents) under which key and enabling competencies are identified. The framework is simple and practical and covers knowledge, attitudes and skills of health care practitioners; further development of the framework stopped it becoming the national curriculum for Canada as it was deemed inappropriate to have a 'one size fits all' given Canada's diverse culture and population. Instead a curriculum that might fit all was developed by the World Health Organisation (WHO) in 2009 because *'the higher education sector has not kept up with workforce requirements'* (WHO, 2009 p.5). The 'Patient Safety Curriculum Guide for Medical Schools' introduces patient safety at an early stage of medical education. The guidance states that medical educators had failed to recognise that '*teaching and learning patient safety is an essential part of the undergraduate medical curriculum*' (WHO, 2009 p.5). The curriculum is based on the Australian Patient Safety Education Framework (2005), it includes 7 learning categories (communication, using evidence, adverse incidents, working safely, being ethical, learning and teaching and specific issues) in three domains (knowledge, skills and behaviours) with increasing complexity of learning identified in four levels (foundation, front line/supervised/managed, managers / supervisors, clinical / administrative leaders), the work is currently being developed for all health professionals. Another inroad into introducing the science of learning into learning from adverse incidents has been the General Medical Council (GMC) Generic Standards for Training. This was originally the remit of the Post Medical Education Training Board (PMETB) and is now part of the GMC function which lays down the minimum regulatory requirements for training providers (educational and clinical supervisors) and training. The requirements include amongst others achieving mandatory areas of competence in establishing and

maintaining a learning environment. This is not a new role for the GMC, in their *Recommendations on the Training of Specialists,* (GMC 1999) the GMC state, '*the teacher is the most powerful influence upon the standards of conduct and practice of every trainee, whether medical student or junior doctor*'. The emphasis on the professionalisation of teaching within the medical profession, and with it the emergence of a Faculty of Teaching across the medical deaneries led by the London Deanery, has come about due to an increased accountability and emphasis on quality (Swanwick, 2008).

Teaching and learning across the learning domains

Teaching and learning programmes that map across the interrelated and overlapping learning domains (Cognitive, Affective, and Psychomotor) and their associated taxonomies have become the benchmark standard (Martin and Briggs, 1986; Gagne, Briggs and Wager, 1992) to ensuring curriculum meets the needs and characteristics of intended learners (Dreifuerst, 2009).

When considering how to teach and learn from adverse incidents, the learning theories relating to cognitivism, constructivist and behaviourism are particularly useful. Understanding schemata theory (cognitivism) is important for educators as it is this aspect of the natural process of the human brain to 'pattern' in order to make sense of the world (Bartlett, 1932; Minsky 1975; Anderson, 1977), that may be particularly useful in learning from adverse incidents. Processes associated with schemata production include identifying when an existing schemata is no longer useful in the current context and producing one that is (Atherton, 2010). For example an anaesthetist recognises conditions in which an adult patient does not fit a particular usual intubation technique but would respond to something normally used on children, the existing schemata is no longer useful so another is produced that allows the anaesthetist to recognise a similar set of circumstances at a later date and so be able to perform quickly. These processes have been given terms such as assimilation (when circumstances fit with existing schemata) and accommodation (when a new schemata is produced) (Atherton, 2010). Schemata production has been distinguished by Rumelhart and Norman (1978) as the evolution of existing schemata (tuning) and the creation of new ones (restructuring). The identification of, and interest in schemata was sparked by Bartlett in 1932, subsequent theorists have recognised that

schemata are not learning domain specific which means that in the design of learning programmes attention should be paid to schemata that habits or overlaps cognitive, affective and psychomotor domains (Gagne, 1985).

The students who participated in the first set of studies in this thesis usually identified that someone had learned if they could observe a change in behavior. Yet before the risk-*e* project began and up to the present date, NHS staff are perplexed by recurrence of adverse incidents (Davis, *et al,* 2001; Cuschieri, 2006; Donaldson, 2006; Evans, *et al,* 2006; Anderson and Kodate, 2010). Then, and now if NHS staff are asked 'how do you know the staff member(s) or colleagues have learned from an adverse incident?' they usually reply that a RCA had been performed, the cause (s) had been identified and everyone had agreed not to do the 'thing' again. These responses to evaluating learning caused me to consider individual learning, OL and assumptions.

- Assumption 1: if you observe a change in behavior then the individual(s) who were involved in the adverse incident have learned from the adverse incident and will not repeat the same mistake again.
- Assumption 2: if you conduct a RCA everything will be openly discussed so you will locate all possible causes of an adverse incident and the mistake will not be repeated again.

There are two factors worth challenging about these assumptions.

1. Observed behavior may be transient and the individual can fall back into routineised practice because they have not learned at cognitive, affective and psychomotor levels. Observed behavior may be transient because the culture or systems in place in which the individual has to practice new learned behavior does not allow them to or does not sustain new behaviors.
2. There may be 'undiscussables' that will prevent those participating in the RCA to reveal information that might lead to a fuller learning from the adverse incident. This means key information never surfaces and individual learning and organisational learning is incomplete.

Learning from adverse incidents should incorporate pedagogical practice that recommends constructive alignment between domains that link learning, process, content, outcomes and assessment (Anderson, 2002). Cognitive learning, like all OL learning from adverse incidents, needs to lean towards meta-cognitive processes (Argyris and Shön, 1978; Haho, 2004); the challenge of this means finding valid and reliable processes (Airasian and Miranda, 2002) that are distinguishable from those associated with assessment. One such process might be borrowed from naturalistic enquiry, using narrative told by real people about real events (Greenaway, 1995, NAO, 2005), this would require a safe environment (Edmonson and Singer, 2008) so that the experiences and knowledge embedded within them are surfaced and shared. An even greater challenge for the NHS is to inculcate a learning climate that embraces *'organising to learn'* (Singer and Edmondson, 2006 p.54) which accepts failure accompanies innovation and often where real learning occurs (Singer and Edmondson, 2006).

Stage two: identification of a new set of indicators

Key to understanding why adverse incidents occur and are repeated can be found in a quote by Albert Einstein *'You will never solve the problem with the mindset that created it'* (Postel, 2003), for it is the mindset (schemata) that individuals have developed that influences practice. Learning through the accumulation of mental models (schemata) involves using an independent frame or sequence of *'pattern recognition, hypothesis formation, deduction using currently held hypotheses'* (Arthur, 1994 p. 3) and discarding of hypotheses or mental models that are no longer plausible. The *'built-in hysteresis'* (Arthur, 1994 p.4) of this as a personal learning system means in effect that the memory of what has gone before informs the present and future learning states. Arthur refers to accumulating a *'record of failure'* (Arthur, 1994 p.4) before a hypothesis or mental model is worth discarding. Accessing these mental models requires a deep approach (Biggs 1987, 1988; Bransford, *et al*, 2000) to learning. Exemplars to a deep approach to bringing about change in thinking and practice already abound in Action Research, Action Science, Action Learning, Clinical Inquiry and PRAR. Of Senge's (1990) five disciplines that build a LO, it is those associated with personal mastery and mental models that are of significant importance in learning from adverse incidents as they aid schemata production and

development. Scharmer's (2008) 'Theory U-process' used in innovation projects and action-learning leadership development may also be useful for individuals or groups to learn from adverse incidents. Scharmer (2008) builds on Arthur's (1994) work on schema change from 'downloading' and observing (Arthur, 1994), to incorporate a process of immersing oneself within the context one is experiencing, followed by a period of retreat and reflection allowing inner knowing to emerge which results in action (Brown, 2005, Scharmer, 2008).

Micro	Meso	Macro	Mundo
Me	It	You	Future emergent
Habit of thought downloading	Factual object processed	Empathetic	Generative

Table 9. Scharmer's four fields that determine the structure of attention and learning within them (Scharmer, 2008 p.55).

NHS staff who have experienced an adverse incident may be caught up with the Micro ('Me') or Meso (It) elements; this may be due to trauma associated with the incident, they are unable or unwilling to discuss what has happened, or because they are used to ('routineised') this Micro/ Meso behaviour. The outcome of remaining in this space becomes one of single loop (Argyris and Schön, 1978) learning in which the practitioner may recognise an error but will only correct their own practice. In order to rectify this practitioners need to engage with Macro (You) and Mundo (Future Emergent) thinking, so they begin to develop schemata that encompasses the part others (or systems) may have played and proactively engage in error detection and learning. This may, though not always at an individual level happen quickly, '*it can take a millisecond. All it takes is a click in the mind, a falling of scales from the eyes, a new way of seeing*' (Meadows, 1999 p.18), changing collective schemata is more difficult as collectives oppose *'challenges to their paradigms harder than they resist anything else'* (Meadows, 1999 p.18). Because of this the real impact of the WSLI might lie in their use with learning communities (Bate and Robert 2002; Barnard 2008).

While significant strides have been made in the development of education in patient safety, learning from adverse incidents in the NHS appears to be relegated to the process of incident reporting (WHO, 2010) and RCA. Learning from adverse incidents is a subject in its own right and what has failed to be noted is that out in the field there is a need for a learning tool that aids learning in more than one domain.

Methodology of indicators

Borne of a pragmatic epistemology (Heylighen, 1993 (b)), the WSLI were constructed on a trial and error basis, developed from *other models* (Heylighen, 1993 (b)), informed from empirical data from Studies One to four and augmented by experiential and professional knowledge. The ontological account of the learning indicators is based on the conceptualisation of a body of formally represented knowledge, as such the axioms that may constrain the possible application of the learning indicators result from not just what has been included but what may have excluded (Eisner, 1985). Relativism was avoided as the learning indicators were produced normatively inasmuch as the hypothesis that informed their development was justified (Klein, 1998, 2005). Hypothesis formation and hysteresis was gained through a process of abduction, induction and deduction, incorporating constructionist interpretation and analysis. This enabled the identification of patterns or regularities over time thereby adding to validity (Berelson, 1971; Silverman, 1993).

The WSLI underwent three major revisions, initially called Deutero Learning Indicators (DLI) they were reworked due to the academic debate as to the use of the term deutero learning (Visser, 2007). The second version entitled Gray's Learning Indicators (GLI) incorporated Vissor's argument for a tripartite distinction of what constitutes learning, because of which the pedagogy underpinning GLI included deutero learning, meta cognitive learning and systems/planned learning (discussed below). The final version of the learning indicators were renamed Whole Systems Learning Indicators (WSLI).

Deutero learning

Deutero-learning is based on Bateson's (1958, 1972) and Argyris and Schön's (1978) *'behavioural adaptation to patterns of conditioning'* (Vissor, 2007 p. 660) that are brought about through interrelationship interactions in the organisational setting.

This tacit knowing brings about a strategic awareness of choice in relation to task and approach taken to learning (Marton, Hounsell and Entwistle, 1984) from adverse incidents, and produces an ability to recognise contextual facets (i.e. culture) that inform strategies undertaken. Senge's *'Personal Mastery'* fits well with deutero learning as it requires individuals to strive to find clarity in real world situations, while coming to terms with new 'truths' about what causes adverse incidents and how to learn from them. Deutero learning encompasses both affective and psychomotor domains; contextual markers would be the learning culture, cultural capital (Bourdieu, 1989), cognitive dissonance and stress (Mayer, 2002).

Meta cognitive learning

Meta-cognitive learning incorporates general knowledge about cognition as well as 'knowledge *about one's own cognition evidenced in self-awareness* '(Pintrich, 2002 p. 219). Situated within this is double and triple loop learning. Double loop learning involves critical reflection and inquiry (Argyris and Schön, 1978; Argyris, 2003), reflecting on one's own or other's practice, challenging one's own and/or others assumptions through open dialogue and involves the practitioner in creativity and critical thinking about adverse incidents. Triple loop learning includes learning about learning (schemata/ frames), this helps practitioners to search out reasons, locate systems and structures that influence performance in order to understand why a particular solution works better than others in reducing adverse incidents. An indication of triple loop learning is the ability to retain information/knowledge and transfer this to solve new problems, making for a forward thinking and proactive approach (Pintrich, 2002) to learning from adverse incidents. Triple loop learning "learning how to learn" (schemata/ frames) involves reflecting on key aspects that have contributed to what and how we know what we know. Identifying schemata rests on a process that requires focusing on a given adverse incident and the systems structures that surrounded (or still surround) it, recognition of meta-cognition is valuable as *'this is how people negotiate and shape power, authority and culture* (Tosey, 2008 p. 455). Mental models sit in the cognitive domain, Senge's (1990) *'Mental models'* align here as the process of surfacing, testing and improving internal pictures of reality of adverse incidents, dovetail with the motivational force of *'Personal Mastery'*.

Systems/planned learning

Systems or planned learning represent structured and formal learning. The WSLI are a good example of systems learning as they provide architecture with which to identify learning from adverse incidents and develop interventions to meet learning needs. They also map across and could guide organisational policy/direction. Vissor (2007) considers only meta- cognitive learning fits well in the systems learning category as it can be identified and formerly delivered, the contextual markers included in the WSLI expose the patterns of conditioning under which deutero learning operates, this renders experiential tacit knowledge/learning explicit so that it too can fall into the planned learning category (Greenaway, 1995). The relationships between deutero, meta cognitive and systems learning and learning from adverse incidents are depicted in Figure 16.

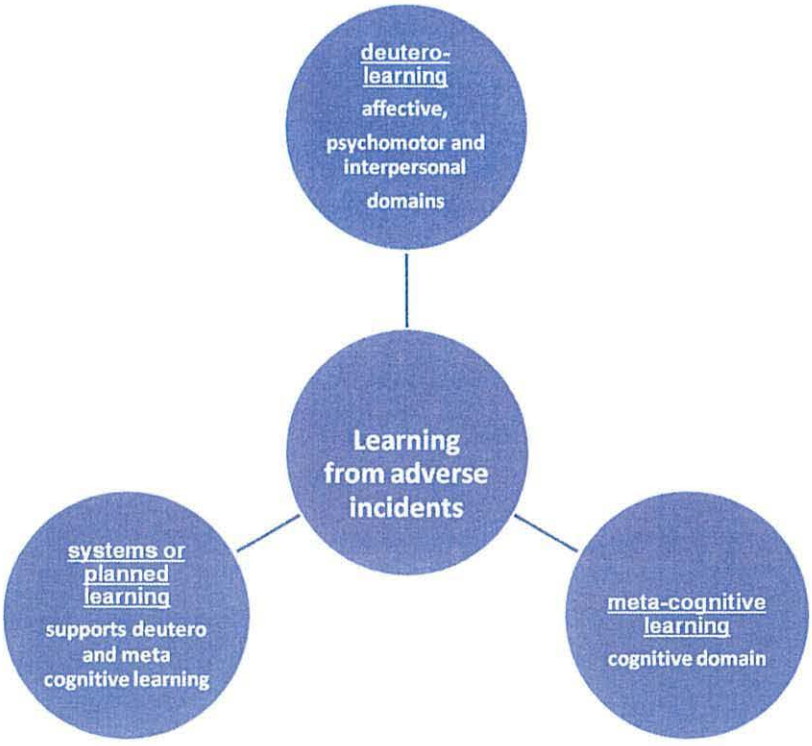

Figure 16: diagram showing how learning from adverse incidents connects to each domain.

Stage three: Locating the GLI model in domains and taxonomies

Cognitive domain

The cognitive domain requires the learner to master processes that include invariant tasks (Ausubel, 1968) relating to adverse incidents, for example the risk assessment calculator requires in the first instance a simple remembering of the categories of risk, the trickier part of allocating a risk to a category comes with practice and experience. Knowledge can hold a particular significance for the learner depending on the context in which it was learned, for example a high stress risk laden environment that was however supportive and blame free may influence learning positively. This subsequentially influences the location of knowledge in a particular mental schema that enables sense making and memorisation of vast amounts of information input. In turn this process contributes to recognition of subsequent information input and informs responding action (Hollnagel, 1998). Ultimately it leads to an understanding of factors that surround adverse incidents as schema are restructured through assimilation (Dreifuerst, 2009) onto existing schema or accommodated (Atherton, 2010) by the construction of new schema. Learning in the cognitive domain means understanding or 'sense making' of the various concepts relating to adverse incidents, these include routineised practice, schemata, human error and organisational systems. Health care delivery is made particularly complex not just because of the nature of disease a person may present with but also because the outcome of care is reliant on multiple choices of schemata from multiples of health care practitioners. Choosing the appropriate schemata is important and is often achieved through reflection and reflexive processes, both of which can lead to anticipation of what may come next (Dreifuerst, 2009) and distinguishes the novice from the expert (Benner, 1984).

Affective Domain

The affective domain is the domain that deals with attitudes to learning. Teaching interventions in this domain extol the value of learning and participation in learning and work towards changing negative attitudes to learning from adverse incidents (Detert and Edmonson, 2006). The effects of a learning intervention that focuses on the affective domain are not limited to the initial learning event, so that lessons learned may later be incorporated into life. Essentially this means that negative experiences can be changed through positive learning experiences. Learning that

evokes emotion, stirs up the field (Lewin, 1947 I) and creates a kind of inner tension, such as those stimulated in experiencing and learning from an adverse incident, falls within this domain (Miller, 2005 p.3). *'Composed of four interrelated qualities: affective responses, cognitions, behavioural intentions, and behaviours'* (Mayer, 2002 p. 3), attitudes are often made visible through the actions of the individual. Attitudinal learning and change is possible because attitudes are acquired, and as attitudes are often linked to how or what we feel about something these too may be influenced and changed in a *'knock on effect'* (Miller, 2005 p.3). While individuals may have moments of epiphany and personal insight learning in this area is incremental and takes time (Nicollini, 2009). Quintessentially, learning is about influencing the attitude of learners (Pronovost and Sexton, 2005) to reflect ethical, political, financial and spiritual imperatives, this might be achieved by endorsing and participating in a no blame culture when learning from adverse incidents so that lessons are learned and resources are appropriately used.

Learning theories in this domain focus on creating a cognitive dissonance between the desired and pre-existing attitudes. The tension created by dissonance makes for an *'unstable state'* (Mayer, 2002 p.4) and is used as a lever for change (Meadows, 1991). Change is made easier if the new alternative attitude is persuasively presented with the result that attitudes and behaviours align to achieve harmony. This is useful when learning from adverse incidents as it enables us to understand the influence of hidden factors such as emotions, values and beliefs that shape our attitudes to learning and in turn affect behaviour. Learning from adverse incidents is a particularly charged experience (positive and negative), and where the individual is trying to achieve an internal consistency this might mean dumping uncomfortable feelings associated with dissonance as quickly as possible.

Adopting a new attitude is made easier if the individual is aware of a more attractive, more desirable and important alternative; the change process is augmented by *'providing free choice, and establishing a wide latitude of acceptance through successive approximation* (Miller, 2005 p 4). For example a role model that preaches and practices no blame in learning from adverse incidents will present as a considerable force (Lewin, 1947 I and II; 1952) with which to influence the attitude of a learner, similarly the culture in which the practitioner operates will significantly

shape attitudes and resultant actions (Sexton, *et al*, 2004; Pronovost and Sexton, 2005; DOH 2002). As with espoused theories and theories in use, the individual has to have an ability to identify that there might be a difference in attitudes and actions.

Psychomotor Domain

The psychomotor domain focuses on performing sequences of motor activities to a specified level of accuracy, smoothness, rapidity (Eraut, 1994; Cusheri, 2006), or force. Underlying all motor activity is cognitive understanding. Cuschieri (2006) stated that adverse incidents are the *'flip side of correct human* performance' (p. 642), and are the result of *'cognitive ability and the level of psychomotor skill, which in professions requiring dexterity and eye-hand coordination (as surgery), determines safe and optimal execution (proficiency)'* (Cuschieri, 2006 p. 642). Although there may be physical skill in task performance, without the cognitive stretch of propositional knowledge or understanding how the cardio vascular system works, some tasks are performed in rote fashion or as an automaton which is the opposite of expert practitioner (Barshi and Healy, 1993). Learning procedures feature heavily in the psychomotor domain (and the NHS), these can be linear or branch, vary in size and complexity (Reigeluth, 1999). Importantly with regard to adverse incidents the context (or system) in which a procedure is applied provides the variables (Reigeluth, 1999) as to whether or not the procedure is appropriate or inappropriate. A good example of this in practice are 'variations' in a Clinical Care Pathway when it is legitimate to deviate from a pathway (procedure) as the patient no longer met the pathway criteria (Tingle, 1995; Anders, *et al*, 1997). Learning psychomotor skills in simulated or controlled conditions have long been recognised as having a positive effect on the learner (Helmreich, 2003; Cuschieri, 2006), although ultimately ability is dependent on eye-hand co-ordination of the learner in any given situation.

Interpersonal domain

The interpersonal domain developed by Rackham and Morgan (1977), has gained a useful reputation in the NHS particularly with identification of continuing professional development needs. Effective communication appears to be the cornerstone of this domain which has found favour in the training of medical students (Cocksedge and May, 2005). Effective communication by nurses is also believed to

positively influence patient health and recovery (Chant, *et al,* 2002). It is worth noting that an often cited factor in adverse incidents, and ensuing litigation, is the breakdown in communication (DOH 2002). This has led to a profusion of training courses for health care staff such as 'breaking bad news', and 'team communication', especially in relation to consent to treatment (DOH 2002). The taxonomy in this domain is of particular relevance to learning from adverse incidents as the abilities required dovetail with those that enable deutero learning, particularly when practitioners are required to challenge others assumptions about care delivery.

5.5 Summary

The Three AR Cycles were dynamic generative research episodes (Lewin, 1946), because of this the questions or problems that formed the basis for each of the studies required sufficient interrogation to warrant the construction of separate study phases. AR facilitated the interconnectedness between each of the phases that linked the studies together; when the studies are viewed as a whole, a picture emerges of how progress can be made towards harnessing individual knowledge gained from experiencing an adverse incident for the benefit of the collective (Senge, 1990).

It is from this perspective that the PhD tools developed out of Study Five can be viewed as 'Tools for Individual and Organisational Learning', these are presented and discussed in Chapter 7.

CHAPTER 6: FINDINGS

6. Introduction

This chapter presents the findings from Cycle One and Cycle Two and determined that a systems approach to learning from adverse incidents could be encouraged by establishing a LO ethos and structure (Senge, 1990; Dodgson, 1993; Davies and Nutley 2000; Oborn, Barrett and Racko, 2010), outcomes from this adopted approach was evidenced in the emerging learning communities (Koffman and Senge, 2001; Donovan, Meyer and Fitzgerald, 2007) and learning dispositions of risk-*e* (Group A and B). Learning as a vehicle for change appeared to demonstrate positive outcomes for practitioners who were teaching others to learn from adverse incidents; this success was subjected to further scrutiny when field research discovered a gap between espoused theories of bringing about changes in practice and those observed in use (Argyris and Schön, 1974). Overcoming barriers (Grieves, McMillan and Wilding, 2006) to achieving change through change agent roles (Friedman, 2001) focused research on educational leadership (Rogers, 2005; Sternberg, 2005) Cohen, Eustis and Gribbins, 2003; Hancock, *et al,* 2005) and the potential this had as a lever with which to bring about change in student/participant employing organisations.

The findings in this chapter are presented under the thematic headings that link them to the studies within the AR Cycles; each study begins with a reflexive account followed by more detailed presentation of the results. The format demonstrates how the iterative (Lewis, Perry and Murata, 2006) process involved in each of the studies, led to an evolving and sophisticated understanding of individual and organisational learning (Eraut, 1994; 2004, Oborn, Barrett and Racko, 2010) from adverse incidents (Reason, Carthey and Leval, 2001; Firth- Cozens, 2004; Braithwaite, *et al,* 2006). Portraying the findings this way demonstrates an interconnectedness in the studies that contributes to a systems (Senge, 1990; Oshry, 2007) view of learning from adverse incidents. Each Cycle contains two studies, in Cycle one Study One has two phases; in cycle two Study Three has two phases.

6. 1 First Cycle: the risk-*e* studies

The research behind the findings from Study One focused on developing risk-*e* as LO, the findings are presented in two phases, the first phase examined the development of

the risk- LC and demonstrated that the learning environment was something that would be constructed over time with the help and contribution of the whole of risk-*e* (Group A and B). The second phase investigated ways of developing a learning culture and identified that the cognitive ability and disposition for a deep approach to learning are essential components (Koffman and Senge, 2001) of a LO. What became apparent was the majority of the first cohort of student/participants appeared to possess sufficient knowledge, skills and ability to engage with learning from adverse incidents in a deep way (Biggs, 2003). It was anticipated that the student/participant majority would be able to positively influence other group members (Lewin, 1947, 1952) to develop their learning approaches in this manner (Marton and Säljö, 1984).

The findings from Study Two considered whether learning in itself could be a mechanism for change and suggested that this was possible with student/participants reporting clear outcomes in their professional practice.

6.1.1 Study One: Developing risk-*e* as a Learning Organisation

6.1 2 Phase One: Interviews

The findings from phase one led to a conclusion that in order to progress development of risk-*e* as a LO (Nevis, DiBella and Gould, 1994), due consideration had to be paid to both the practical technicalities and pedagogical methods of running an e-learning environment (Childs, *et al,* 2005). The practical implementation of e-learning software and amassed group knowledge on teaching practice proved to be insufficient in providing accessible and useful learning experiences for the student/participants. The AR methodology brought the student/participants into the experiential AR cycle (Lewin, 1947) to resolve some of the problems with access and engaged risk-*e* (Group A and B) in the hermeneutic process (Guba and Lincoln, 1989), this meant that barriers to learning were overcome and actual collaboration was achieved. By emphasising the importance of each person to the collaboration as a whole and the value each brought with their own stock of knowledge (Reason, 1999), much was achieved in the creation of interdependency (Lewin, 1947). The reality of interdependence came to life through collaboratively solving the access problems of the e-learning platform; this brought the student/participants to work alongside risk-*e* (Group A) and ultimately resulted in sharing control of course curriculum (Light and Cox, 2001).

Findings

The responses from the student/participants were content analysed (Guba and Lincoln, 1994) and categorised (Polit and Hungler, 1989) under three themes. These were:

1. Access

While access to learning had been a significant consideration in developing the LC, it had anticipated that the e-learning platform would enable student/participants to overcome these barriers (Clark, 2002; Childs, *et al,* 2005; Cobb, 2004). Upon using the risk-*e* learning environment it became apparent however that the student/participants experienced unforeseen problems associated with the e-learning system that *had* been devised;

> *'Although I have asked our IT department to ensure my computer lets me in the classroom they have other priorities and say it needs clearance higher up'*
>
> (Student/participant 6)

> *'I have a firewall problem.....what is a firewall!'*
>
> (Student/participant 7)

Although we (risk-*e* Group A) had considered that adopting a blended delivery (Childs, *et al,* 2005) for risk-*e* may overcome many of the known problems relating to access (Clark, 2002), student/participants were unable to get into the FirstClass e-learning platform until well into the course. The problem was caused by NHS firewalls which either caused long delays in connecting with the e-learning platform or blocked participation altogether. This unforeseen problem caused a loss of momentum in student/participant motivation to learn, motivating our student/participants to remain engaged with learning was seen as critical (Siedlacczek, 2004) to success.

> *'I make time in a very busy day to learn and the computer just keeps crashing'*
>
> (Student/participant 10)

In essence the IT problems had the same effect on the student/participants as if a lecturer had not 'turned up' to teach, at this beginning stage of the project even temporary hurdles were enough to disenfranchise student/participants from participating. Experiencing barriers to e-learning due to incompatibility with IT learning systems is reported in the literature (Thomas 1986; Pande and Hart, 1998), and with hindsight the risk-*e* team should have been better prepared given the depth of knowledge in the partnership. The firewall problem was slowly overcome on an organisation by organisation basis. This often involved locating the IT manager for the organisation with the help of the student/participant and getting permission to bypass fire-walled computers. Fortunately the student/participants were patient during this period for a number of reasons. Firstly we fed back to them about how hard we were working to resolve the problem and informed them of progress. Secondly because they were called on to help resolve problems they became practically involved in the construction of the e-learning community itself. Lastly we also ensured provision of materials from missed learning opportunities.

2. *Engaging with e-learning format*

Even though student/participants had been fully informed that they would need to engage with an e-learning community some student/participants disliked e-learning and were reluctant to engage with this as a learning medium.

> *'I prefer books and face to face stuff I am not a natural with computers'*
>
> (Student/participant 12)

Some disengagement had been caused by a dislike of e-learning caused by levels of computer literacy, this meant finding solutions that mapped across to learner ability (Clark, 2002). Extra support and encouragement was provided in order to bring about familiarity and ease of use of the e-learning environment; this was provided in the form of additional workshops in which a mix of using the VLE with classroom activities engaged the student/participants in a mutually supportive climate. The student/participants who were less able to learn via computer were teamed up (Knowles, 1984; Ramsden, 1992) with the more computer literate. A natural enthusiasm to learn was generated by handing over the choice of the learning subject

to the student/participants themselves (Ouellette, 1999); these changes provided a bridge over any resistance to engagement as learning how to engage with e-learning was a less obvious objective.

3. *Engaging with learning process*

Student/participants were not engaging with learning in a way that demonstrated the process had become meaningful to them:

> *'I found it difficult to get to the stuff with the little time I had, I know I can try this at home later but I just need it to made obvious so I don't waste time getting lost'*
>
> (Student/participant 3)

As lecturers we had attempted to encourage learning, engage with learners and support the LC (Biggs, 1987) by providing a huge variety of resources in the form of uploaded documents, links to websites and e-resources. These resources were available for student/participants to access and develop their knowledge base in their own time. Augmentation of this knowledge repository was met through group discussions using questions posted into student conference areas. We were confounded by the fact there was limited uptake of these resources and facilities, this participant/ student response gave us clues as to why.

> *'I just need it to be made obvious so I don't waste time getting lost'*
>
> (Student/participant 3)

After reviewing the format (Ouellette, 1999) with the student/participants (Ouellette 1999; Billings and Rowles, 2001, Lewin, 1947) we decided to change our delivery approach and hold hour long synchronous weekly workshops relating to one area only. It was anticipated that this would lead to clarity and ease of use with the e-learning platform. Building on the success experienced by handing over choice of subject to the student/participants meant future sessions were driven by the student/participants (Biggs, 2003). The programme was called 'Hot Topics' and were the online activities that were successful. Student/participants were provided with background materials to the subjects they wanted to discuss (Clarke and Wilcockson, 2001) and discussions were documented and made available to student/participants

who were unable to log on at the set time. The subject remained 'live' over the following week so that student/participants were able to add to the initial discussion before each new topic was started.

Working collaboratively (risk-*e* Group A and B) to solve the problems identified with the e-learning community transformed the risk-*e* communication platform into an e-learning community; this was evidenced through active on-line discussion and exchange of knowledge (Wakefield, *et al,* 2008). Active participation contributed towards reducing the isolation (Rovia, 2002) student/participants may have experienced working in different employing organisations dispersed across Wales. The LC became so successful that the student/participants requested, with support from risk-*e* (Group A), to lead 'Hot Topic' sessions of their own and 50% were ultimately provided by the student/participants themselves. The student/participants had over a very short space of time moved through the five stages of interaction (Salmon, 2000) with e-learning environments consisting of access and motivation, online socialisation, information exchange, knowledge construction and development. In addition student/participants had begun to enlarge their existing learning networks through the student/participant populated learning communities. Through the LC's the student/participants called on each other for advice, guidance and mentorship, invited colleagues to meet as study groups to develop compulsory and mandatory training in risk management, worked together on the development of risk management in the use of Visual Display Units (VDU's) and supported each other in the development of their individual teaching materials and teaching practice (Billings and Rowles, 2001).

The facilitation of e-learning was a challenge for risk-*e* lecturers, answers were often found, in true organisational learning style, by trial and error. Phase two of study one examined whether the student/participants learning dispositions (Bourdieu, 1989, Marton and Säljö 1984) aligned with the desired risk-*e* LO culture (Schein, 1991; Firth-Cozens, 2001; Levinathal and Rerup, 2006).

6.1.3 Phase Two

The learning dispositions that were sought in the student/participants included deep experiential approaches (Biggs, 2003) to learning and an ability to share learning (Mcardle, Burns and Ireland, 2003) from adverse incidents. The overall findings from phase two demonstrated that the student/participants possessed these by providing

double loop responses (Argyris and Schön, 1974) to research questions, and by relaying that sharing knowledge was a valuable and insightful learning process.

> *Q.12. 'It makes me think about what I know, or in some instances only think I know because when I think about some things by discussing them I can realise I have gotten something wrong, it is an 'aha' moment but not just for me for everyone'.*
>
> (Student/Participant 1)

Discovering learning dispositions was an important indication of how the student/participants might support others to learn from adverse incidents (Alberti, 2001) through the process of reframing mental schemas (Taylor, 1985; Goffman 1974; Johnston 1995). While the student/participants demonstrated their mental schemas could be influenced and change the study also indicated that the majority of student/participants assessed learning had taken place through observed behavioural change, this is exemplified by the response from Student/Participant 12.

> *Q.7. 'When you see others taking the same preventative measures, you assume they have learned the same lessons'.*
>
> (Student/Participant 12)

Observing behavioural change as a means of assessing others are 'taking preventative measures' may in itself be insufficient (Eraut, 1994); learning assessment should include some form of cognitive test to ensure that individuals are not performing without understanding (Hayes and Allinson, 1998). Another interesting aspect that emerged from the data related to tacit knowledge. The majority of student/participants provided examples of tacit knowing as *acting*, when asked to reflect on the example they had provided the student/participants were able to give cognitive reflective responses, examples of which were;

> *Q.9. 'Teaching, being confronted with difficult or tricky questions in public situations and dealing with the situation promptly and constructively'.*
>
> *Q.10. 'Knowing how I would feel if I had asked the questions why I asked them and why I needed to communicate this*

helped me to answer in a considerate and appropriate way'.

(Student/Participant 1)

Q.9. 'Yes usually in a crisis situation. I react instinctively and then reflect on appropriateness. It does feel scary at the time'.

Q.10. 'Could be intuition, belief in self and own judgements or life and death situations where doing something is better than nothing'.

(Student/Participant 5)

Q.9. 'Yes, when using a patient's religious faith to aid them to a peaceful death. Intuitively sought the patient's strength and harnessed it'.

Q.10. 'Lacked guidance from others, relied on intuition and the patient's response'.

(Student/Participant 2)

It appeared that the student/participants constructed tacit knowing as involving 'action' rather than 'thinking' and was in some way linked to the way the majority assessed learning, through action rather than cognition. The meta-cognitive abilities that enable reflexive learning and knowledge development (Eraut, 1994, 2000) are often embedded in action, making these processes explicit may improve our understanding and learning from adverse incidents. Also emerging (Eisener,1991) from the data was evidence that dispositions to construct a LC were driven by a student/participant's personal desire to learn, to acquire information, gain knowledge, source advice or just find a 'sounding board' for discussion.

Q. 2. 'Group learning should be encouraged as we maximise on what others know about a subject, it can also be distressing if the subject is sad or negative it needs careful handling'.

(Student/Participant 5)

Q.11 'Demonstration, discussion, explanation, directed supervision, setting targets, asking them to teach me then engage in reflection with them'.

(Student/Participant 2)

Personal learning dispositions utilise tacit knowledge which aids the understanding of complex situations and events through '*shared beliefs about a situation*' (Von Krogh, *et al*, 2000 p.31). The student/participants learning dispositions that had been identified included those associated with deep learning and incorporated OL and LC features; these findings were viewed positively as they aligned to the OL profile of risk-*e*.

Findings

Most student/participants (N=10) provided double loop type responses to how we learn as an organisation (espoused theories):

Q.3. 'As an organisation, once an individual is rooted in the organisation, the tools and methods used by the organisation can be clarified enabling the culture of the organisation to be identified. Beyond this there should be recognition of the value of the components, the individual contribution and the organisation's contribution. Thus learning as an organisation shows the culture of learning itself'.

(Student/Participant 1)

Examples of how they may do this in practice (theories in use) also demonstrated that student/participants influenced organisational learning in a variety of ways, not relying on management meetings and policies to pass on knowledge.

Q.8. 'Organising and set up a lessons learned report have presentations at meetings, circulate quarterly newsletter. Also share lessons learned at all Wales network of risk managers and also participate in regional office reporting cycles'.

(Student/Participant 11)

In order to identify whether student/participants possessed deep or surface approaches to their own and others learning, questions 1, 4, 12, 5, 6, 7, 9 and 10 were reclassified and data was interrogated for single/double loop type answers in order to locate deep or surface constructs. The student/participants provided 'deep' (Biggs, 1987) responses to individual and experiential learning questions,

> *Q.1 'Individual learning is usually associated with targets, in terms of topic, timescale and evidence of achievement. The process is aided by prior and allied experience to which new knowledge is added'.*
>
> (Student/Participant 2)

The data from study two was initially subjected to content analysis pre and post risk-*e* tHE teaching intervention. This was undertaken in order to identify the learning dispositions (Ramsden, 1992) of the student/participants under each given theme and to ascertain whether the learning intervention was having any effect on professional practice (Braithwaite, *et al,* 2006).

The themes were based on the literature review and shared knowledge and understanding of risk- *e* of deep learning (Fazey and Marton, 2002, Marton and Säljö, 1984). The themes were understanding learning, understanding experience, tacit knowledge and sharing knowledge. LC is seen as a significant contributing factor in the development of a LO (Senge and Scharmer, 2001) so this was defined as a distinct category for analysis. This enabled the identification of data relating to the social capital of the 'classroom' (Bourdieu and Wacquant, 1992) and whether the student/participants had experience, understanding and/or knowledge of how to be a LC (Tsoukas, 1994). LC characteristics were interpreted as an inherently a deep approach to learning (Biggs, 2003, Senge, *et al,* 1995).

Answers (Appendix 4c) to questions 2, 3, 8, 11, and 13 were reclassified as having LC and/or LO constructs. Student/participants interpreted *learning as a collective* in terms of a LC construct and importantly for the risk-*e* course they interpreted *sharing learning* more of a combined LC and LO construct (N=5 pre N=9 post) after the course.

The findings from phase two are presented thematically, in Table 10 as theme A, Understanding learning, Table 11 as theme B Understanding experience, Table 12 as

theme C Tacit knowledge and Table 13 as theme D Sharing knowledge. Each table provides a summary of the data so that student/participants learning dispositions are easily identified.

Table 10. Theme A: Understanding learning

Responses to Q. 1.What do you understand about how you learn as an individual? **N=13 prior/post responses:** ***Summary: Most students provided deep descriptions towards learning***	The responses didn't change much after the tHE course, N=7 pre and post student/participants provided deep descriptions of individual learning, N=1 changed from surface to deep and N=2 changed from deep to surface. N=1 retained surface descriptions before and after the tHE course. N=3 student/participants who's responses were linked to OL provided surface responses pre course and N=2 deep post course.
Responses to Q. 2. What do understand about how we learn as a collective? ***Summary: Majority of responses demonstrate deep descriptions of either a LO or LC.***	N= 7 before and after = LC deep N= 2 before and after = LC+ LO deep N= 2 prior responses did not link to either LC or LO but linked to LC after N= 1 prior response linked to LC and to LO post N= 1 prior response linked to LO prior and LC post N= 1 response linked to LC prior and neither post Other changes N= 1 prior to course LC deep response to surface response post. N= 2 responses changed from surface to deep LC
Responses to Q. 3. what do you understand of how we learn as an Organisation ***Summary: Slight change to double loop post course.***	Learning as an Organisation = Overall double loop responses N= 3 pre and 2 post = single loop OL N = 10 prior 11 post = double loop type LO

Analysis of student/participants data before and after the risk-*e* tHE demonstrated a slight increase in 'double loop' type responses post course. The majority of responses provided 'deep' descriptions commensurate with that of a LO or LC.

Table 11. Theme B: Understanding experience

Responses to Q. 4 Do you know what it means by learning from experience? ***Summary: Significant change to reflective/reflexive post course.***	N= 6 responses 'action' orientated pre course of those 5 had action responses post course. N=7 responses reflexive/reflective pre + 10 post reflective/reflexive post course.
Responses to Q.5. Can you recall an incident where you have learned from experience? ***Summary: most see learning change represented in acting differently.***	Examples of experiences are almost same mixture of action (A) and cognitive (C) examples N= 8 responses 8 pre (A) + 4 (C) + 1 missing N= 8 responses 7 post (A) + 5 (C) + 1 missing
Responses to Q. 6. How do you know you learned from experience? ***Summary: Overall behavioural responses demonstrated***	N= 5 Pre course Cognitive responses + N = 8 Behavioural responses N= 3 Post course Cognitive responses + N=9 Behavioural responses + 1 missing
Responses to Q. 7. How do you know others have learned from experience? ***Summary: Most assessed learning through behavioural change 7 pre course and behavioural change after 6 post course, slight increase in combined after 3 – 4.***	(A = action, C = cognitive, B = behaviour) N=3 A + C, N=3 C, N=7 = B N= 4 A+ C, N= 2 C, N= B 6 + 1 missing
Responses to Q. 8 What have you done to share learning from experience? ***Summary: Overall there were more LO responses.***	N=2 LC, N=4 LO pre and post course. N=2 moved from LC prior to LO post course. N=2 were LO but had data missing post course. 2 moved from OL to LC post course. 1 moved from OL to combined OL/LC post course.

Analysis of responses to questions 5, 6 and 7, identified a pattern of response from the student/participants that indicated assessing learning from experience was represented as an observed change in behaviour, evaluating learning in the cognitive domain actually reduced post course. These findings corresponded to data for Q. 4 where student/participants defined learning from experience (N=6) as involving 'acting'. There was no mention of identifying learning from experience along the affective or psychomotor domains at all.

Table 12.Theme C: Tacit knowledge

9. Have you ever been in a situation when you have known what to do but haven't understood at the time why? ***Summary: Overall reflexive/reflective responses 9 no 6 yes.***	N= 3 +3 pre and post yes, N= 1 yes prior changing to N= 1 no post course, N=3 no remaining no post course but demonstrating '*action schemas*', N=3 were missing pre and post, N=2 were yes but missing post and N=1 no and missing post course.
10. What do you understand about why you were able to perform at the time? ***Summary: 6 gave responses pre demonstrating an understanding in performance, 4 stated did not understand.***	pre and post yes N=5, pre and post no N=3, pre no changing to yes N=2, pre yes with data missing N=2, pre post data missing N=1 pre yes post no N=1.

Discovering whether student/participants had an understanding of tacit knowledge, mental schemas and reflexive ability was important as student/participants would be required to be able to locate their own mental schemas regarding learning about adverse incidents (and possibly change them); they would also need to be able to enable others to do the same. Overall reflexive/reflective responses were less (N=6) there were slight changes after the course (N= 9).

Table 13. Theme D: Sharing Knowledge

11. When you know how to do something how do you share this with others? ***Summary: Overall student/participants do share knowledge.***	Prior OL N=6 + N=5 OL/LC, 2 no Post N=3 OL + N=9 OL/ LC, 1 no Significant change to OL/LC responses post course.
12. Does telling others reinforce what you know? ***Summary: Most student/participants demonstrated reflective responses.***	Pre responses reflective yes N= 10 pre + N=3 routineised Post responses reflective yes N= 11 + N= 2 routineised
13. What do you think the words the 'learning organisation' means? ***Summary: Student/participants demonstrated understanding of LO.***	Pre Yes N= 9 N= 4 no Post Yes N=11 N=2 post
14. Do you think that by sharing knowledge we can perform better in the workplace? ***Summary: Majority in favour of sharing knowledge to improve performance***	Yes N=11 pre + N=11 post No N= 2 pre and 2 post

These findings were important in order to identify if student/participants practiced knowledge sharing, if they did this attribute could be utilised by risk-*e* in the development of organisational knowledge though the LC. There was a significant change to OL and LC responses after (N= 9) the course. Overall student/participants did share knowledge. Most student/participants demonstrated reflective responses and an understanding of aspects of LO, the majority (N=11) were in favour of sharing knowledge to improve performance

The findings produced from Study One led to the questions for Study Two, the second study began by considering whether learning in itself could be a mechanism for change. This was considered to be important in order to identify whether a first level change (Bradbury, 2001) within the student/participants themselves had the potential to bring about second level changes (Bradbury, 2001) in their professional teaching practice. Given the fact that their professional teaching practice focused on the better management of risk it was inferred that ultimately this may reduced adverse incidents

(Hartley, Benington and Binns, 1997) in the workplace.

6.1.4 Study Two: Learning as a vehicle for change

The student/participants exhibited willingness and ability to change their practice of teaching risk management to an extent it demonstrated adaptive learning ability (Meizerow, 1990; Bransford, *et al* 2000). Overall there was a clear indication that the students viewed learning as a vehicle for change and were using reflection as a mechanism to begin the process. This indicated an ability to become an adaptive learner but may in itself not demonstrate double loop learning. Arguably a constant comparison between espoused theories and what happens in practice (theories in use) (Argyris and Schön, 1978; 1996; Visser, 2007) gains credibility through a shared experience and understanding (Guba and Lincoln, 1989) of the same event. This was identified in the data and focused on the shared experience of the student/participants whose espoused theories of learning bringing about 'change' was demonstrated in the practical examples they provided, these examples are presented below as resulting in cognitive change, attitudinal change and changes in action (behaviour) for the student/participants.

This first response is more intention (affective) than action based but perhaps for this student the intention to do something different was the first 'change' that was needed.

> *'I will build on the session on the importance of corporate governance and develop for the next session'.*
>
> (Student/participant 9)

This second response demonstrated another affective change as the student/participant was 'trying' to change,

> *'I am trying to be more flexible as a teacher, not just talk and chalk. I am trying to be more interactive with the students and am delivering some sessions in the workplace with the students'.*
>
> (Student/participant 10)

These next two responses were from student/participants who already hold teaching qualifications. The first response demonstrated that the student/participant was reflecting on her previous teaching experience and qualifications and using it to improve her performance.

'I am revisiting and making things more formalised'.

(Student/participant 3)

These cognitive responses demonstrated an increase in propositional knowledge and changes in thinking processes themselves.

'Haven't done much teaching so far and already have a PGCE. The main change for me is the new knowledge about risk management rather than education and teaching'.

(Student/participant 6)

'I am more conscious'.

(Student/participant 5)

'The course has made me think more about how I teach and present risk management'.

(Student/participant 2)

'Yes I am more aware I need to make sessions more meaningful to the individual rather than just deliver a package'.

(Student/participant 8)

These five responses demonstrated the student/participants were actually putting changes into practice. These responses are different from those of 'intention' and 'trying' (supra) as these student/participants *were* 'the change'. This is highlighted in the following extracts:

'For someone like myself who is hardly computer literate I am developing a blended approach'.

(Student/participant 1)

*'With informal sessions such as health and safety I have changed my approach, instead as if **I** know it all I have made the sessions more interactive I wouldn't have done that before'.*

(Student/participant 13)

'I am doing more reflection. For instance the organisational profile I have developed has been interesting because I have gone on to develop it more to the needs of the individual. Originally it was aimed high in the organisation but needed the views of staff working at different levels so I have adapted it'.

(Student/participant 4)

'It has made a difference in my perceptions of what the students are getting and taking into account, what ways they are thinking so they will retain knowledge. My delivery has changed because I am finding ways to motivate and involve students so they are not bored. I am directing my questions and asking opinions etc and relating content to their area of work. So I am bringing this into sessions by making them more discussion based. I feel better, there is more achievement and they are more involved the more they can remember'.

(Student/participant 11)

'My attitude to learning has changed'.

(Student/participant7).

What is significant about all of these responses is that the student/participants identify with the changes, they say 'I' am doing this, 'I have done that', they are beginning to *be* the change.

'It has made me analyse more and become more reflective post event to plan when I have a similar event. One incident I had was not about the content of a session but about managing the group, I now have a couple of back up plans for the next time. When you are developing a teaching session individuals will attend according to what you have advertised, when you are invited in it is different because you can't plan as easily. This experience has actually made me less harsh on myself I know I couldn't have prepared better but now know how to manage better because of the reflective process with better results'.

(Student/participant 12)

These last responses show that the student/participants 'felt better' and were 'less harsh' on themselves as a result of the changes in their practice. At one level it appears that the effect on the student/participants to be 'life enhancing' (Bradury and Reason, 2003)

The habitus of the actors within the risk-*e* social field (Group A and B), appeared to incorporate a value (Bourdieu, 1989) of adopting a deep approach to teaching and learning. Lathem *et al*, (2003), described trying to hit a target in complex adaptive change was akin to throwing a rock or a bird, the risk-*e* approach appeared to fall into the former category with student/participants reporting some evidence of change. While the changes reported by the student/participants were interesting, the quality of learning transfer (Eraut, 1994) of a deep approach to teaching and learning at this stage may have been limited to no better than average. With practice however (Fazey and Marton, 2002) and deconstruction of the process through reflection (Eraut, 1994, 2007) the student/participants should have moved from novice to expert (Benner, 1984) and developed a 'personal mastery' (Senge, 1990) to form part of the risk-*e* OL whole. The findings from Study One and Study Two are presented below in more detail.

Findings

The quality of the data that was produced in this study through qualitative interviews was rich, broad, meaningful and truthful (Lincoln and Guba, 1985; Appleton and King, 2002; Schwandt, 1994; Becker, 1982). After an initial data interrogation the

responses produced by questions 6 and 13 were considered an early indication of a *'practical outcome'* (Bradbury and Reason, 2001) of risk-. This was because responses indicated what student/participants thought about the ability of learning to bring about changes in professional practice, and whether the tHE/risk-*e* was facilitating this. Further analysis of the data from key questions Q.6 and Q.13 resulted in reclassification of these responses under two themes. These were *theories of action* (question 6) in which students said this was how learning could bring about change; and *theories of use* (question 13) in which student/participants presented changes they had made in their own practice due to their involvement with the tHE/risk-*e* course. The data is discussed under these themes below.

Theme one: Espoused Theories

The theme relating to *espoused theories* produced a range of cognitive responses that indicated that all (N=13) student/participants considered learning in itself could bring about change. Some (11, 12 and 13) made a connection between education and changes in practice through the process of action. The comment from student/participant 13 is a good example of first and second level (Meizerow, 1991) learning:

> *'You have to do something with the learning for example share knowledge or action it. Take it forward and do something with it. It is important when learning to share examples from real life and not just text books now* ***that*** *brings about real change'.*
>
> (Student/participant 13)

A practical example of how student/participants were achieving change is provided by student/participant 1 who had realised that one way to positively change the recruitment and retention problem in her Trust was to present risk management education as a form of investment to bring about change in practice. This is illustrated in the following extract:

> *'For example through a training needs analysis I identified fifteen new staff members would need to have risk management training and certification in addition to arranging this I also organised learning support groups for*

them. They are now all qualified and the desired change was achieved namely that we were able to retain a more competent workforce achieved through education'.

(Student/Participant 1)

Some student/participants suggested how education about risk management had removed fears about learning from adverse incidents within the organisation and brought with it an improvement in practice, student/participant 5 also claimed: *Training is the key to cultural change in organisations* and Student/Participant 6 recalled how learning through negative experiences can have a positive outcome:

'For example with medication errors, for the individual there is the experience of going through the incident, through reporting the incident and learning from the two so nothing is lost. That way individuals learn and organisations learn'.

Interestingly, student/participant 2 stated that education could change inappropriate behaviour or reinforce appropriate behaviour. For some students *how* education was delivered was important, for example it could make learning meaningful, providing reasons for change was an important (student/participants 3 and 8) part of the learning process. For some learning of itself was enough to bring about change (students 4 and 7). Significantly, for one student/participant learning meant many changes:

'It can mean a new qualification, or revisiting and reflecting using the learning cycle, am I staying here? am I developing? how can I involve myself in my work? It is about a preparedness and making transitions, seeing what might happen and develop that into a learning cycle for yourself'.

(Student/participant 10)

<u>*Theme two: Theories in Use*</u>.

Asking student/participants to say how they had demonstrated their own first level changes associated with learning by bringing about second level changes in practice would close the gap between what they say they did and what they *had* done. It is often at this stage when looking for possible disconnect between theories of action and theories of use that a dissonance or 'stirring up' (Lewin, 1947) causes a

transformative (Meizerow, 1991) learning event.

All student/participants reported a variation in their teaching practice, either with the planning and development of sessions (student/participant 2 and 9) or implementation of sessions (student/participant 8) or in ways their own stock of knowledge had changed (student/participant 6). The biggest change was in delivering more interactive sessions (student/participants 4, 7, 10 and 13).

> *'With informal sessions such as health and safety I have changed my approach, instead as if **I** know it all I have made the sessions more interactive I wouldn't have done that before'.*
>
> (Student/Participant 13)

It was notable that student/participants also mentioned revisiting previous 'stocks of knowledge' (student 3), using action learning cycles as part of their delivery (student 1), using reflection to understand and change teaching (students 4 and 12). One student who at the outset of the course had been 'techno phobic' and was 'hardly computer literate' was now using a blended approach to her teaching, adopting many of the ideas and content provided by the tHE/risk-*e* course (student 1).

The personal and professional satisfaction being experienced by student/participants was self evident; there was a clear demonstration that what the student/participants were learning (either in formal teaching sessions or through the LC) was being transferred to the workplace in much more deep and meaningful way (Prosser and Trigwell, 1999). This is illustrated by the following extracts:

> *'It has made a difference in my perceptions of what the students are getting and taking into account, what ways they are thinking so they will retain knowledge. My delivery has changed because I am finding ways to motivate and involve students so they are not bored. I am directing my questions and asking opinions etc and relating content to their area of work. So I am bringing this into sessions by making them more discussion based .I feel better, there is more achievement and they are more involved the more they can remember. I have changed my presentations because they are more interactive*

people sit up and listen because they are more meaningful'.

(Student/participant 11)

'This experience has actually made me less harsh on myself. I know I couldn't have prepared better but now know how to manage better because of the reflective process with better results'.

(Student/participant 12)

'I am more conscious in getting individual groups together to cascade knowledge down and use some of the ideas generated. For example within the Trust with the newly formed National Public Health Service I am using the techniques I have picked up as I need to ensure a cultural change within this new division. With all of the training I am putting together I have the course in mind, it has helped a lot'.

(Student/participant 5)

The success of risk-*e* in using education as a vehicle for change was encouraging, realising the limitations of this success only became apparent through opportunities for field research. These limitations were explored in Cycle Two, Study Three.

6.2 Second Cycle: Change in Practice Studies

The findings from Cycle two were produced from two studies, the first (Study Three) involved collecting data from the 'field' (Burgess, 1991) in which student/participants operated. The study is presented in two phases, phase one relays findings from field observations (Johnston, 1995) in the form of initial reflections (Schön, 1991) and constructed interpretation of findings (Schwandt, 1994). Phase two presents findings from qualitative interviews (Silverman, 1993).

The second study (Study Four) in this Cycle involved creating a frame (Goffman 1974, Johnston, 1995) in which student/participants could action espoused educational leadership skills.

6.2.1 Study three: discovery of a dissonance in espoused theories and theories in use

6.2.2 Phase One. Field studies

The data obtained from network meetings and peer observation of teaching practice was representative of two 'field' areas that the student/participants occupied. Significant events observed in each field triggered critical learning episodes (Benner, 1984) and helped to inform my own teaching and research practice within risk-*e* (Donovan, Meyer and Fitzgerald, 2007; Ross and Steadman, 1995; Somekh, 1995; Cowan and Weedon, 2000). For example after a field observation in RM network meetings in which I observed student/participants fail to connect with a change agent role I wondered whether the context in which they were placed prevented this; after a field observation in peer review of teaching practice I perceived a lack of confidence in the student/participant which caused me to reflect on how positive or negative I had been during my own early teaching practice. Ultimately these *reflective critical learning* points (Elliot, 1991; Cowan and Weedon, 2000) led to the consideration that the perceived obstacles identified and subsequentially relayed by some of the student/participants may have been linked to the 'frame' (Goffman, 1974) with which they viewed their change agent and teaching practice roles and experiences. It seemed that the student/participants that were using a 'frame' in which they were looking for success were successful. Those who used a 'frame' that had passion, enthusiasm and motivation about wanting to improve teaching and clinical practice were equally successful in improving practice.

Observing the student/participants in the 'field' identified a disconnection with student/participant espoused theories of being agents of change and those in use. Some of the student/participants demonstrated behaviour associated with surface approaches to teaching which was at odds with the way they took on their teaching roles within the risk-*e* LC field. Presenting these observations back to the student/participants resulted in defensiveness (Argyris and Schön, 1978), only one (student/participant 12) was prepared to discuss the observations and acknowledge them. This raised questions regarding the validity of earlier study findings in which the subjective 'truth' (Guba and Lincoln, 1989) was deemed reliable. This was reconciled after interrogating the findings in this study and the disconnection was explained (Bradbury and Reason, 2001). The findings in Study Two were still viewed

as 'truthful' as the student/participants had in fact made changes to their teaching practice, what had become obvious through field observations was that there were barriers to their educational change agent role that limited the ways in which they behaved. By recognising the concept of 'vulnerability' experienced by the student/participants as having an influencing force (Lewin 1947) on behaviour in the workplace field, and the concept of 'fear' (Sirkin, Keenan and Jackson, 2005) associated with the challenges that bringing about change produces, sense was made between the two studies. The findings are presented in depth below.

Findings

The findings from Study Three are presented in a conceptual order of understanding gained through three iterations. From the first iteration of data analysis two themes were identified that related to 'internal' (themselves) barriers and/or barriers that were external (within the environment). Significant observations were presented back to the student/participant in order to provide opportunities to disconfirm data, allow me to challenge observed practice and facilitate problem solving through dialogue (Lewin, 1947). The second iteration represents my immediate reflections on observations. The third iteration involved a further analysis of data representing the barriers the student/participants were experiencing, this resulted in an explanation of why student/participants were finding it difficult to overcome barriers constructed on two key areas of vulnerability and fear.

First Iteration

Field notes observations were clustered under the thematic headings of *internal and external barriers*. An internal barrier was interpreted as student/participant ability (or inability) to change their own routineised practice of teaching/training and adopt a more deep, experiential and collaborative approach. Inability may have been due to a resistance to change or lack of awareness of routineised practice (Barshi and Healy, 1993). The coloured text indicates where the student/participants were challenged on their observed behaviour; these challenges were meant to surface assumptions (Argyris and Schön, 1978) that lay behind the difference in espoused theories and theories in action.

Observation one: Internal barriers

The theme of *internal barriers* included cognitive ability to grasp new learning, a

desire to control the learning situation using controlling methods, lack of self awareness in reverting to existing methods and expecting to fail.

Student/Participant 5 appeared to find the reality of delivering a teaching session in which her own students had to become reflective quite challenging.

> *'The experiential methods appeared to be difficult for her, I asked her if she felt out of her 'comfort zone'. She replied as far as RM was concerned people 'turned up in order to be told how to do it' and were not encouraged to 'think about it'. She herself was finding the thinking part 'woolly' and she was resisting the temptation to just deliver what she always had'.*

(Observation of student/Participant 5)

It was clear that Student/Participant 9 was not aware of a disconnection with her espoused theories of student autonomy and her autocratic teaching approach:

> *'Although she espouses student interaction and participation she actually controls sessions, even a session on action learning she interrupted her students and would answer for them. After the sessions had finished I decided to tell her of my observations to see if I had observed correctly'.*

(Observation of student/Participant 9)

The teaching practice of Student/Participant 12 resembled more his known management style, which was of a 'command and control' type exhibited as telling people what to do and not used to having his own knowledge base questioned.

> *'As a senior manager he is influential on how RM is delivered but here was a prime example of reverting back to 'no I will tell you what to do'. When the student/participant' students suggested innovations they were told they were 'wrong' and should adhere to organisational structures and form filling. This startled a few of them, as senior managers themselves they are used to a fair degree of autonomy'.*

'I asked the student/participant if he thought what I had observed was the right approach'.

(Observation of student/Participant 12)

Interestingly, one student/participant's barrier to change was her own expectation of failure,

'She felt that I would expect her to make a 'dull bunch' enthusiastic about learning about RM when everyone knew that they just wanted to be 'told'. This was so at odds with her previous espoused theory in which she had stated that what they were doing just wasn't working. I tried to explain that she didn't have to turn them into pedagogues just use methods that encouraged deep approaches so they would learn better. This didn't go down too well either as she said that they just wanted to be 'ticked off the list' for attending'.

(Observation of student/participant 11)

Observation two: External barriers

The examples of *external barriers* perceived by the student/participants included those relating to the organisation such as the learning systems which were inadequate (Grieves, McMillan and Wilding 2006), a culture which was not often open to learning from mistakes (Bhatia, *et al,* 2003), their own students who resisted the effort required in deep learning, and their colleagues who were often geared towards a 'managing to execute' style rather than 'managing to learn' (Singer and Edmondson, 2006). For example with regard to the learning system, most of the student/participants had to deliver mandatory pre-designed programmes that encouraged surface learning, this caused a stifling of their own creativity (Sternberg., 2005 and created tensions within the field (Lewin, 1952).

The field observations demonstrate this:

> *'Observing delivery of what the student/participant called 'rigid' curriculum. Because it is classified as 'mandatory and statutory' the student/participant felt it had to be covered in its entirety and as there was such limited time to do this the opportunity to be creative in delivery of education (she felt) was restricted. This is at odds with the deep approach to learning we (UWB) promulgate. I asked her what she might do about this... '.*
>
> (Observation of student/Participant 10)

An organisational culture which caused 'defensive routines' and 'undiscussables' (Argyris 1995, 1999) were made explicit by these barbed comments.

> *'At first they seemed to challenge the student/participant when he asked them to assess and report risks or concerns with 'yes but we can't do that here', their reasons for not being able to 'do it' were not clear although there seemed to be some tacit understanding of some organisational culture or norm that remained unspoken'.*
>
> (Observation of student/Participant 2)

The student/participants were aware that a percentage of their student's resistance to new teaching methods was a barrier to change, some stated that their students did not want to be encouraged 'how to think' as they were used to being told 'what to do', the data below highlights problems the student/participants were experiencing.

> *'I asked her what she thought of her students and she agreed with her colleague that they 'were not the keenest' but there were one or two that she could encourage and move along and that she would concentrate on these'.*
>
> (Observation of student/Participant 13)

'I asked her why she would not hand over more control to her students. She said that handing over control to her students would mean they would go off 'like a box of frogs' and her organisation was explicit about 'managing what people do'. People were not encouraged to think too far away from organisational dictate'.

(Observation of student Participant 9)

'The crux came when the session students asked the student/participant what he was going to do to help them in the future if he really expected them to change things on the ground and I could tell he was stumbling. What could he do? I asked him that question too'.

(Observation of student/Participant 2)

Barriers that related to the student/participant's colleagues appeared to be in connection to feelings of vulnerability with senior management. The student/participants were also unsure of their own new teaching skills and ability to change embedded practice:

'She also said that she was finding it hard to answer questions from bosses who wanted to know 'the ins and outs' of what she was doing as she didn't yet know herself, this made her feel vulnerable'.

(Observation of student/Participant 5)

'She would have to negotiate with her bosses. This would be difficult as time away from the workplace was at a premium so she would have to make a case for the merits of spending more time to deliver the curriculum this way. She was prepared to do this although was 'not looking forward to that conversation'.

(Observation of student/Participant 10)

Second iteration: Reflections on findings

This reflection on findings brought to the fore significant events from each observation (Benner, 1984), findings were used to support the future development of

risk-*e*. For example after one observation (with Student/Participant 5) I realised that the LC needed to be better utilised by the student/participants, another observation (with Student/Participant 11) caused me to reflect on how positive/negative I had been about my own early teaching practice.

Observation summary for Student/Participant 13

> *'What was significant about this? Although this was team teaching the two student/participants are very different. One seems to expect failure before she has started and the other looks for success how does this relate to approaches to teaching and learning? How can I use this in my own teaching, I would like to think I am more like the second student/participant but have I ever been like the first and if so what did I do to overcome it?'*

What became apparent through reflective analysis of the data was that the student/participants who used a 'frame' that incorporated passion, enthusiasm and motivation about wanting to improve practice were the student/participants who were successful, this is demonstrated in the observation summary below:

Observation summary for Student/Participant 2

> *'What was significant about this? This student/participant was using deep approaches to RM education, he is enthusiastic and motivated and wants things to improve. His students could become his agents of change but there appears to be some tacit (possible cultural?) obstacle to him achieving this'.*

These observations were taken forward and used in the more in depth reflection that formed the third iteration.

Third iteration

Emerging from the reflected upon (Carr and Kemmis, 1986) data in the 7 post observation summaries were two key constructions that related to *vulnerability* and *fear*.

1. Vulnerability

The first construction related to the vulnerable position the student/participants

may have been in as risk-*e* change agents (Hartley, Benington and Binns, 1997). For those that were aware of going through a change process there may have been a 'temptation' to revert back to previous ways of working. This was understandable since the employing organisation environment may have had the effect of 're-socialising' (Bourdieu,1989) the student/participants within the existing system. It would have been hard for the student/participants despite their key positions in the organisation to bring about a change in the system. The observations below highlight these insights.

Observation summary for Student/Participant 5

> *'What was significant about this? The fragility of the student/participant and the tensions to go back to what she had always done. What about the bosses? Were they a legitimate obstacle to her proceeding or were these her fears?'*

Observation summary for Student/Participant 11

> *'What was significant about this? I think the student/participant is afraid and because of that she interpreted my presence as being there to catch her out in some way. What reassurance/support does she need? What kind of failure has she constructed for herself before she has had any?'*

2. Fear

Analysis of the student/participants data appeared to indicate there was a fear (Alberti, 2001; Firth- Cozens, 2004; Jack, *et al,* 2010) of changing from providing the risk management education/training that they were used to delivering, which may be because they adhere to a system based on controlling (Skinner, 1972) a workforce that operates in a state of flux. The observations below support this.

Observation summary for Student/Participant 9

> *'What was significant about this? The student/participant is a construct of her own constructs! The RM system in the organisation appears to be based on controlling the workforce, using deep approaches to learning for some reason*

makes the student/participant think her students will become uncontrollable'.

Observation summary for Student/Participant 10

'What was significant about this? Rigid curriculum and rigid routineised practice as a way of delivery promotes a surface approach to learning, the student/participant is frustrated and what I have heard from other student/participants people only turn up to get themselves ticked off some sort of list of attendance. This supports the lit I reviewed and the market research on current RM education. Arhhhhh'.

Observation summary for Student/Participant 12

'What was significant about this session? Can it be that the student/participants themselves are in such a reutilised practice of delivery they have a lot of unlearning to do before they can encourage a deep approach to learning about RM. I have a feedback session planned for this student/participant next week, I will raise these observations outside of the evaluation and see what happens'.

The data from RM network meetings and peer observation is representative of two 'field' areas (Figure. 16) that the student/participants occupied. In the RM network meetings and during peer observation teaching practice there was an observed incongruence of the espoused theories demonstrated in the risk-*e* field.

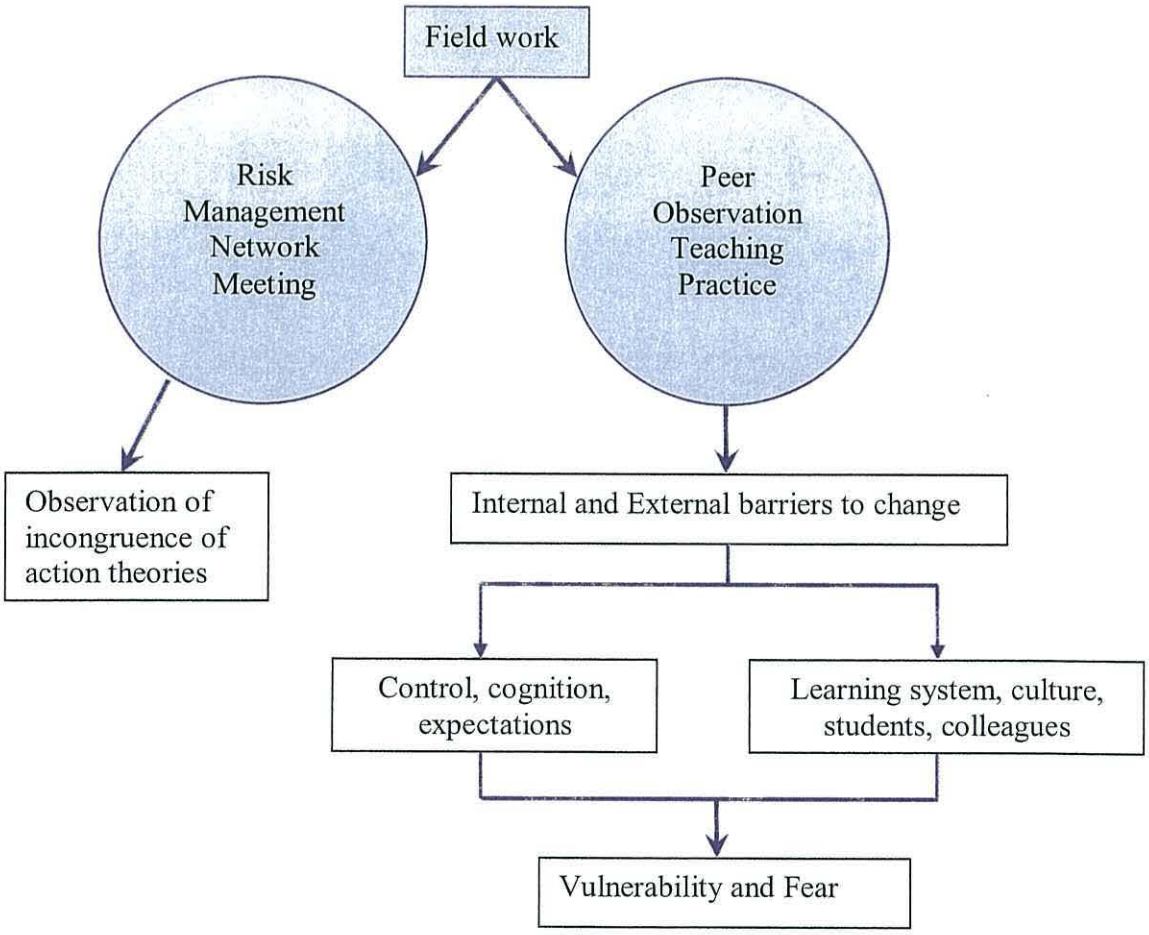

Figure 16: Development of concepts from fieldwork

A subjective interpretation born of a *'personal understanding'* often becomes part of both the *'recording of the observation and the deductions that follow'* (Baskerville, 1996 p. 2). The subjective experience in field research had been used reflexively to provide insight to a possible disparity between espoused theories and theories in use (Argyris and Schön, 1996). The observations and constructed interpretations were taken forward in phase two of Study Three.

6.2.3 Phase two: Interviews

The data generated by qualitative interviews (N= 8) provided the opportunity for a deeper exploration of the internal and external barriers that the student/participants were experiencing, this also helped in the formulation of how barriers may have been overcome in the future. In considering possible explanations we (risk-*e* Group A)

included whether the student/participants had not been taught well enough or whether we had wrongly assumed they had understood the role of change agent. In truth these suppositions were in contrast to the fact that I (and my colleagues) had experienced many risk-*e* learning situations where the student/participants had demonstrated both a real understanding of reflective practice and their role to play as AR participants. We (risk-e Group A) discussed whether the level of support provided for the student/participants to be agents of change had been sufficient. On reflection we surmised that the student/participants had been adequately supported and if anything the risk-e team had overcompensated for early difficulties in the availability of the e-learning platform by offering visits to assist with teaching sessions, to set up local AR projects, to help with portfolio development and revisit all previous learning sessions through the e-learning platform. It became apparent that perhaps the envisioned network of risk-e 'disciples' were less disciple like and more 'ordinary students' as only two out of the cohort (N=11) had completed portfolios within the anticipated timeframe of twelve months. Frequent offers of support to develop and implement AR projects had at best been discussed and although some tentative projects had been drawn up, many offers had been stonewalled because student/participants were 'too busy'.

It was this notion of being 'too busy' because of having to meet organisational targets, such as the delivery of existing statutory and mandatory training, and shrinking resources that perhaps lay at the heart of the problem (Som, 2009). The deep approach (Biggs, 1987) embedded in the risk- *e* methods of teaching risk management required student/participants to have time to reflect in order to be able to identify, challenge and possibly change assumptions. While the checklist procedures (Barshi and Healy, 1993) currently used to assess learning and risk management practices had the potential for negative learning outcomes, they were quick and currently there was little symbolic capital (Bourdieu, 1989) in changing a system that *prima facie* worked due to an inherent political value (Brown, 1979; Walshe, 2003).

The risk- *e* egalitarian environment, created to bring about individual, organisational and systemic change, was now viewed in the light of what was practically achievable in the student/participant workplace (McTaggart; 1996; Smith, 2001b). On reflection it was apparent that there would need to be a critical mass of risk-*e* student/participants in order to change the dominating learning from adverse incidents system and by doing so alter the social field (Bandura, 1985). We (risk-*e* Group A)

realised that tensions between AR and the realism of the NHS working environment was such that any changes in practice may be small and incremental. The Findings from this study are presented in depth below.

Findings

The inductive processes utilised in phase one had led to the production of four interview questions. The responses to questions 1 and 2 demonstrated overall the student/participants (N=5) saw no barriers to implementing learning theories and N= 5 gave practical examples of how they had achieved implementation.

Stating there were no barriers appeared at odds with what was known about the contextual environments in which the student/participants worked. It was known by risk-*e* (Group A) that some of the student/participants worked in *unsupportive environments* and so may be restricted to what they felt able to convey (Alberti, 2001; Bourdieu and Wacquant, 1992), even so we had expected some comments about difficult working conditions or the complexity of learning new theories and practice, instead N=5 of the student/participants claimed they were experiencing no problems. This included the student/participant who saw her own students as *'dull'* and *'expecting to be told what to do'* and the student/participant who was having difficulty changing from a rigidly set curriculum that encouraged *'tick box attendance'*. This incongruence may be explained as an *internal barrier* of the student/participants which was present because the gap between espoused theories and actual practice remained invisible (Argyris and Schön ,1996); or because student/participants were aware of a theory practice gap but were resisting change because of what that might bring (Lewin, 1952: Eraut, 1994).

Of the three students who acknowledged internal and external barriers they described them in the following ways:

Q. 1 answers

> *'You need to understand the learning theories before they can be applied. Understanding is a barrier to be overcome'.*
>
> (Student/Participant 2)

'There are time wasters and it can be difficult to get staff to appreciate the importance of these things'.

(Student/Participant 7)

'My main learning theory was accepting responsibility for your learning and using action learning to achieve change. I tried this approach with three separate groups (one internal, one external and a network)'.

(Student/Participant 9)

How the student/participants had or were in the process of overcoming these internal and external barriers is demonstrated in the responses below.

Q.2 answers

'Taking time to understand'.

(Student/Participant 2)

'Making risk management relevant to everyone'.

(Student/Participant 7)

'The main issue for all three groups was the prior preparation of the participants in order to make the group work/action learning possible'.

(Student/Participant 9)

The proposition that student/participants were experiencing barriers but were not relating them was substantiated by the answers provided to question 3 '*what suggestions would you make to future students regarding the application of learning theories to risk management practices*'. Question 3 had been set as a 'probe' question (Foddy, 1993) and was designed to enable a conversation with the student/participants at 'arms length'. This meant student/participants who were perceived of as working in

unsupportive environments and felt unable to 'complain' about their employing organisations were able to discuss the question in the context of helping future students. The process uncovered what may have been behind an espoused (Argyris and Schön, 1974) theory of 'there are no barriers' and presented a fuller idiographic explanation of what may have been happening in practice. The internal and external barriers identified in the findings are explained in relation to what was known about the working environment for student/participants in terms of whether it was *unsupportive, supportive in theory and/,or supportive in practice.*

Unsupportive

Student/participants who were known to the risk-*e* team (Group A) to be working in *unsupportive* employing organisations, suggested that future students needed to overcome barriers associated with senior management and garner support from influential colleagues.

> *'Need to get boss on your side, if you don't you will fail'.*
>
> (Student/Participant 1)

> *'Point out benefits to management, incorporate feedback, be prepared for knocks'.*
>
> (Student/Participant 3)

> *'Think of what they are trying to achieve, the scale of the change and whom they can rely upon for support... I suppose that I would also link it to change management – again their own need will depend on their individual position, experience and ability to make change happen'.*
>
> (Student/Participant 9)

> *'Work with the decision makers, the 'movers and shakers' of the organisation, get influential people on your side'.*
>
> (Student/Participant 10)

Supportive in theory

The responses from the student/participants, who were known to risk-*e* (Group A) to be working in organisations that were *supportive in theory*, related barriers associated with teaching itself. For example one student/participant had been told by senior colleagues while she would have time to implement the new curriculum had not in fact been allowed to delegate other responsibilities in order to do so.

> *'Have more time to prepare to learn in order to make explicit what you know tacitly'.*
>
> (Student/Participant 2)

Another student/participant had realised from actual experience that the new learning how to learn curriculum had to be made an integral part of risk management education and practice so that transformative learning (Appelbaum and Goransson, 1997) could take place.

> *'Try to include as part of risk management and not as a separate teaching element so that staff can learn by working through the teaching cycle in practical terms'.*
>
> (Student/Participant 5)

Supportive in practice

The student/participants who were known to the risk-e (Group A) to be working in an organisation that was *supportive in practice*, had operationalised collaboration as integral to successful change (Lewin, 1946), for this student/participant (10) it meant *'Work with others'*.

In question four the student/participants were asked to reflect on the risk-*e* approach of developing key change agents (Berger and Luckmann, 1966; Bradbury, 2001) and whether they had felt a part of this and if so how? The responses to this question produced more *barriers* by the same student/participants who had initially claimed they had experienced none. The data is explained under the earlier themes of *internal barriers* in relation to self and *external* barriers in relation to the environment, for example the organisational systems or colleagues.

Barrier: internal

Two of the student/participants had not engaged in change agent activities that would develop the risk-*e* network despite opportunities to do so. Possible explanations may be they either did not understand the potential a change agent has to influence an organisation (no matter it's size) and resistance to acting out a role that they could see little value in (Bourdieu ,1989).

> *'My role was already one of cascading the risk management process to support newly developing organisations through teaching and learning events so I thought I didn't need to do this'.*
>
> (Student/Participant 5)

> *'The organisation I work in is small so there is not so much change within it I can influence'.*
>
> (Student/Participant 2)

A third student/participant constructed the question of the role of change agent into whether the risk-*e* learning platform had fulfilled her own learning needs. Her answer was perhaps an indication of whether she had understood (or had the ability to understand) what risk-*e* had been trying to achieve.

> *'For me, I discovered I need group interaction and discussion as part of my own learning as that is how I convert reading and references into use. However, I recognise that virtual teaching and learning is the way forward for the 21st century'.*
>
> (Student/Participant 9)

Barrier: external

These student/participants were known to risk-*e* (Group A) to have been employed in *unsupportive* employing organisations, the barriers identified to being an agent of change as an educator included the role having a perceived lack of value within the social field; this is demonstrated by the following student/participant whose employing organisation placed little significance on this function.

'In order to achieve this you need to get management in the organisation to see the value of education. It was hard for me as management were not happy for me to be a teacher'.

(Student/Participant 1)

Securing time away from existing responsibilities to engage with change agent activities was a barrier for student/participants; whether this was because the employing organisation did not facilitate the freeing up of time to enable student/participant to engage with change agent activities or whether the student/participants did not incorporate change agent activities into their existing roles wasn't always clear. Whichever the reason the result was de-motivating.

'We are all so busy, so for me this was an expectation that went unfulfilled'.

Student/Participant 6

One of the student/participants had experienced particular problems accessing the risk-*e* LC, this they felt to be an important barrier to the continuing support provided by the virtual LC:

'I lost my network of colleagues because of problems with the e-learning system, some of that was down to me'.

(Student/Participant 3)

The barriers that the student/participants relayed were not unusual, nor were they insurmountable, they had nevertheless become sufficient to stop the student/ participants progressing with their change agent roles. In order to understand what lay behind the perceived disconnect in espoused theories and what was known about the organisational fields, the findings from both phases were scrutinised with risk-*e* (Group A) and academic colleagues (Lewin, 1947). This process resulted in a synthesis of findings that provided two concept maps. The first concept map (Figure 17 below) exposed the relationships between the perceived obstacles to learning and change.

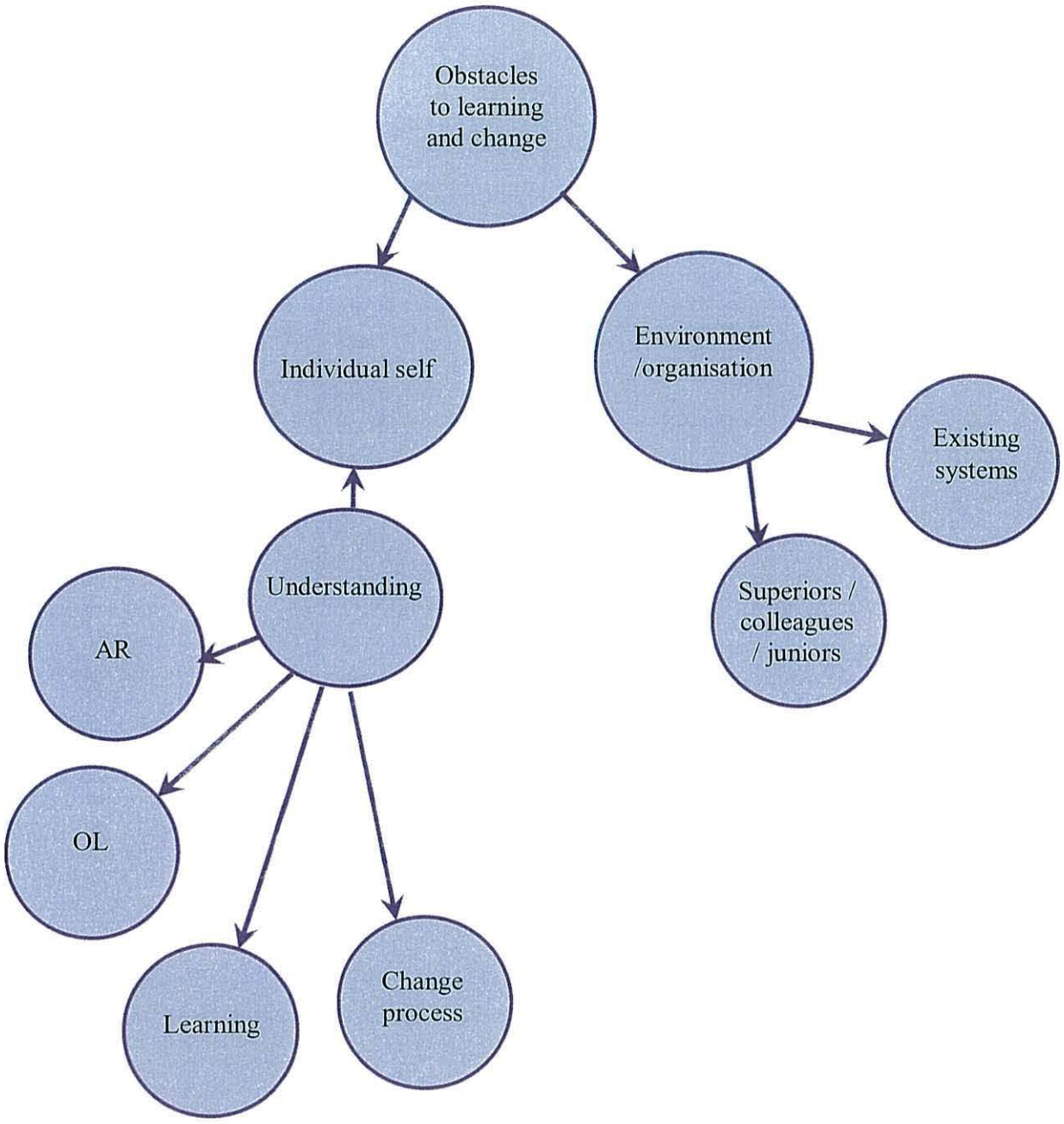

Figure 17: First Concept map presenting student/participants perceived barriers to change.

The first concept map was further interrogated using the '5 whys' (Ohno, 1988) approach, the results of this second interrogation enabled the drawing on collective knowledge and experience (Lewin, 1947, 1952) in order to arrive at possible explanations as to what was happening for student/participants at a personal learning and practical implementation level. The outcome of the second interrogation is presented in the second concept map (Figure 19).

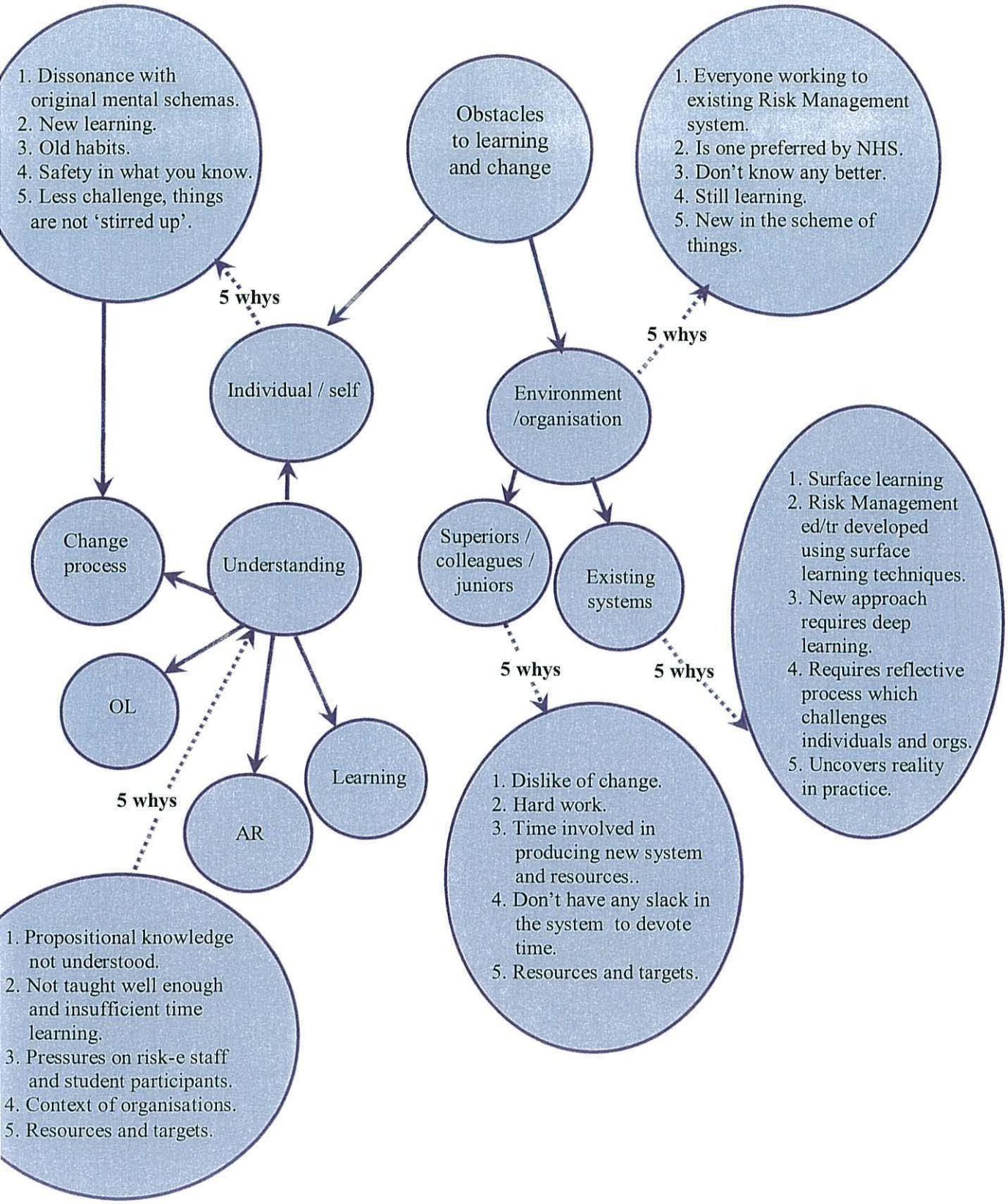

Figure 18: Second concept map presenting possible explanations to barriers experienced by student/participants (produced after using the '5 whys' approach).

The barriers identified in study three led to the understanding that changing how we learn about adverse incidences requires us to re-pattern social relationships through situated practices (Giddens, 1984). In order to overcome barriers sustained support for student/participants based on a more realistic and informed understanding of how AR success and failures are played out over time. The exploration to find ways in which to overcome barriers to the change agent role led to study four.

6.3 Study four: Change agents, educational leadership and learning elites

As educational leadership was understood to be a motivating factor in bringing about change, it became important to establish whether educational leadership formed part of the student/participant 'mental frame' (Johnston, 1995). If this was the case then this could contribute to a change agent schemata and skill set and could be drawn on to expand the risk-*e* social movement to reduce adverse incidents.

The findings from Study Four are presented as Phase One (interviews) and Phase Two (field observations).

6.3.1 Phase One

Although previous studies had identified barriers to the change agent role revolved around loss of influence or *'control over the system'* (Grieves, McMillan, Wilding, 2006 p. 87), the group 'cosmology' (Goffman, 1974 p. 27) leant towards *'elite and OL leadership categories'* in the data analysis framework. This provided evidence of student/participant educational leadership core values (Bate Bevan and Roberts, 2005) that closely aligned with the overarching risk-*e* 'master frame' (Goffman, 1974; Johnston, 1995; Caldwell, 2003) and indicated that essentially the student/participants still had the potential to fulfil change agent activities through educational leadership roles.

The process of self reflection involved in answering the two research questions may have enabled the student/participants to resurface aspirations and accord a positive value (Bourdieu, 1977, 1989) to educational leadership. This was an encouraging result and indicated where risk-*e* resources could be prioritised in two ways. Firstly the work of Burton and Higley (1987) demonstrated that elite groups by definition hold positions of power, influence and authority (see their comparative study on the work of Giddens,1971; Dye, 1983; Field and Higley, 1983; Marger, 1981; Moore, 1979; Ornstien and Stevenson, 1981; Putnam, 1976; Suleiman, 1978 and

Zartman, 1982). Although the student/participants had degrees of power, influence and authority, as far as risk-*e* change agents were concerned they could be likened to an emerging learning elite group closely associated to, but without the authority and power of the elite group in their own bureaucratic organisations (Burton and Higley, 1987). In order to positively influence the student/participant power base, efforts were targeted at raising the profile of student/participants and risk-*e* with those who held the reins of power in student/participant host organisations. Secondly developing risk-*e* as a cohesive learning elite group would take time (Burton and Higley, 1987) and require a considerable amount of nurturing, sponsorship and championing. Essential to this was to develop a supportive infrastructure so the 'psychological safety' (Singer and Edmonson, 2006) experienced in the risk-*e* LC (learning elite) was transferred. A more in depth presentation of the findings from this follows.

Findings

Responses that aligned closely with those of change agent included how student/participants saw educational leadership as involving the ability to '*persuade*' or '*negotiate*' any barriers they might face in providing education for their NHS colleagues (Angehrn and Atherton Angehrn, 1999 p. 5). For example student/participant 1 stated that:

> *'Statutory and mandatory training is an easy thing to get past the bosses as they are pushing for it but often difficult to get past the personal agendas of those coming on the courses'.*
>
> (Student/participant 1)

Data that also aligned with being a change agent was expressed in terms *of 'realising the potential'* of everyone in the organisation, responses resonated with a sense of self esteem, achievement and power (Rogers, 2005), which are often key to developing authentic leadership (Ladkin, 2010). It was here the passion to be an educational leader lay. For example the following student/participants state:

'I use it as an opportunity for personal development for not only myself and my team but for the all staff in the organisation to ensure knowledge is there and people have the appropriate skill set. I try to ensure that all staff have educational opportunities that will not only ensure "competence" but enable them to develop'.

(Student/participant 1)

'To lead and motivate others whilst also imparting knowledge and encouraging others to share knowledge and skills.'

(Student/participant 3)

Some of the student/participant responses linked educational leadership and change agent attributes with being the '*driving force*':

'Well ...what is an educational leader..? If it were me then I see myself as a driver for change, a provider, an expert and someone who believes in transferring knowledge around and sharing expertise'.

(Student/participant 1)

Other student/participants saw educational leadership as involving '*personal change*' through learning, this compared with change agent '*analysis and reflection skills*' and the ability to '*learn from failures*' (Angehrn and Atherton Angehrn, 1999 p.7)

'Working on the skills at present to allow me to do this'.

(Student/participant 2)

'Yes, I feel I have potential to be...I feel there is always opportunity to expand skills and knowledge, whatever level of an organisation an individual works at'.

(Student/participant 3)

'Someone who can adapt and change what they know and who are not afraid to do so publicly! What do you call it Dee challenging your own assumptions'.

(Student/participant 8)

'I accept how using education is a good vehicle for bringing about change, I have certainly seen this is practice, I surprised myself. Does that mean I have adapted in public, yes and it is scary and empowering at the same time...a few colleagues said I was wasting my time that things would just go back the way they were. My feeling is they might if we don't change the reporting systems to match the teaching sessions, it has to be joined up. I am working on that one but some people do not want change'.

(Student/participant 8)

It was clear that '*status*' also formed the educational leadership frame, for example in response to the question 'Do you see yourself as an educational leader?' these student/participants responded,

'Not yet. As a consultant I will be in a position to be a leader and in a position to educate'.

(Student/participant 2)

'One could be described as an educational leader if one leads in some way at the educational policy making level, the strategic planning level, the operational level, or the theory development level, or in research'.

(Student/participant 4)

The original Table (6) used to analyse data to identify personal and process constructs of educational leadership was amended in order to re-classify 'erudite/wise/ adaptive/willing to learn' as falling within 'expert elite'. Re-classification was necessary to determine whether the student/participants could be motivated to act out the change agent role by recognising themselves as part of an elite learning group. Constructs relating to designer/steward/ teacher/facilitator were reclassified as integral to an OL role. The amended table made visible the '*mental orientations*' (Johnston,

1995 p. 217) of the student/participants and enabled alignment with constructs under the 'Personal' and 'Process' concept headings, summarised here as;

Personal

- Most (N=5) present responses that fell into the learning elite category
- Second (N=4) most popular responses fell into the OL category, responses were closer to designer/teacher/facilitator roles.

Process

- N=4 responses fell into action orientated process and N=4 fell in to the OL practice categories.
- There were NO responses for the trustworthy + rewarding/acknowledging caring category.

In addition the responses were compared with the nine eras (Sadler, 2001) of leadership, this demonstrated leadership student/participant styles that could be located in the Influence era (2), Leadership behaviour era (3), Situation era (2), Culture era (2) and Transformational era (2).

The findings from phase one formed the espoused leadership theories of the student/participants. These became the basis upon which to evaluate whether given the opportunity the student/participants would act them out in phase two of the study.

6.3.2 Phase two: Field observations

The findings of this study identified that the student/participants possessed educational leadership traits and behaviours which were operationalised during the risk-*e* conference. This moved the student/participants to transformative behaviour (Appelbaum and Goransson, 1997) and bridged the theory practice gap (Roth and Senge, *et al,* 1995). During the conference the student/participants had assumptions challenged which allowed for a *'flooding out'* (Goffman, 1974 p. 357) from mis-framed events (Goffman 1974). For example student/participant 1 changed her leadership behaviour from a 'driving' to a 'passive' role, this caused an *'increased distance from the initial activity'* (Goffman, 1974 p. 359), resulting in de-routinisation through *'reflexive monitoring of action which individuals sustain in circumstances of co-presence'* (Giddens, 1984 p. 64).

The risk-*e* international conference frame provided the student/participant with opportunities to present themselves favourably (Goffman, 1959; Johnston, 1995) as educational leaders. The frame itself was designed so as to be beyond the view of the student/participants (Goffman, 1974) but known to the risk-*e* team so that *'the staging of these actions was really or actually occurring'* (Goffman, 1974 p.47). The reality of the environment (setting, speakers, and activities) provided a stage for the student/participants to play out their educational leadership roles; this may have provided a motivating force (Lewin, 1947) with which to subsequentially carry change agent activities forward in host organisations. Transference would depend on the power and influence (Rogers, 2005; Hancock, *et al*, 2005) owned by the student/participants and the psychological safety that would support action (Singer and Edmonson, 2006). If transference did not occur then the experience would remain 'bracketed' (Goffman, 1974 p. 251) to the conference itself. Student/participants required future opportunities to be able to perform the same part they played at the risk-*e* conference to employees within their host organisation on different occasions so that *'a social relationship'* (Goffman, 1959 p.27) would arise. This new social relationship would recognise and legitimise the role and contribute to exerting a positive force on the learning culture within the field (Lewin, 1947; Hancock, *et al*, 2005; Singer and Edmondson, 2006). The more detailed findings are presented below.

Findings

When one is trying to sell a particular image of oneself it is done in such a way as to impress upon the 'other' not only what or who it is you are trying to be but also that you are competent within that role (Goffman, 1974). The risk-*e* conference had been staged in such a way as to exude an image of professionalism, contributions had been secured from world leaders in risk management education, high profile clinicians and politicians endorsed the event, all of which contributed to an image of an elite group coming together to discuss and learn about risk management practice. Student/participants who had been successful in having their papers accepted for the conference were allocated a time in the programme that would accord them high profile status. They were in effect acting on the same stage (Goffman, 1974) as the very people they acknowledged as risk management 'gurus', this should have had the effect on self and colleagues as enhancing their leadership image. In lesser roles as

convenors or attendees(Goffman, 1959), the student/participants should have had a similar experience as they would have the opportunity to associate with role models (Bandura, 1977 a) directly during think tank sessions and during networking opportunities over the two days. All student/participants would attempt to present the 'right face' (Goffman, 1959) and so act out the role they had volunteered for. In essence the conference provided the 'frame' (or stage) within which the student/participants could engage in and practice educational leadership, this practicing would allow for existing roles to be '*deconstructed and deroutinesed in order to incorporate something new*' (Eraut, 1994 p.20).

The findings are presented to include the individual student/participant's profiles (in a table format) that aligns accepted role(s) with the espoused theories identified in phase one of this study. This is followed by the conference (field) observations of each student/participant during the two day conference period; for example during the think tank sessions in which particular accepted roles (such as convenor) could be observed in action. The acted out role was then compared to the espoused role and any perceived barriers were identified. Observations were reflected upon at the end of each conference day and form the basis of a final reflexive account.

Table14: Student/participant 1 profile

S/P contributions	Personal = espoused theories Located from interview data	Behaviour = theories in use Located from interview data
think tank convenor and think tank topic contributor and research participant	innovative /visioning designer/steward/teacher/ facilitator erudite/wise/adaptive/willing to learn	problem identification/ solving/proactive systems/holistic approach/ team/shared learning/interdependence

Field notes: observing the student/participant in the accepted role of convenor

Day one: Thursday March 30th 2006 2 – 2.30 p.m.

Before joining the breakout table I had been close enough to observe this student/participant (who had accepted the role of convenor) behaving more

authoritative than facilitative, and, as identified in phase one of this study still appeared intent on 'driving' the session rather than supporting learning. The student/participant appeared knowledgeable about the creative work of Edward de Bono 'six thinking hats', which had been incorporated in the think tank sessions to generate creative solutions to questions. This aligned the student/participant with elite role and problems solving role which was useful to some of the other attendees. The student/participant proved to be less a guiding influence for those that could learn through exploration and at times her behaviour bordered on 'telling' others what to do Bob Helmreich, (plenary speaker) sat at this table and took this good humouredly, at the end of the session he made a poignant comment '*what have we all learned here then*'? and each attendee commented in response, at this stage the student/participant faltered as the role that she had played did not appear to include that of reflective learning. To her credit she said '*Oh I forgot about that! But I won't tomorrow*'.

Field observations were scrutinised for *internal* and *external barriers* that may have influenced how the student/participant expressed their espoused educational leadership role. The student/participants appeared to assume a 'driving' manner in her educational leadership role this was in accordance with her earlier statement that she saw leadership in this light. At an *internal* level barriers to changing from a driving to a facilitating learning role may have been due to old behaviours and *routineised* practice being deeply embedded. No *external* barriers were observed, the environment was very supportive and the prompt about reflective learning was given in such a way as not to offend.

Day two: Friday March 31st 2006 1. – 2.30 p.m.

The student/participant appeared tired but again took on the role of convenor. The make-up of the group had changed (as attendees self selected to work on think tank questions) to include a University colleague. The student/participant appeared less confident and deferred to those around the table more, it seemed like the balance between 'driving' had shifted towards a lack of direction. The attendees however had quickly moved to the process and the session seemed to progress without much input from the student/participant. The student/participant delegated feedback at the end of the session to the conference to one of the attendees, unlike the day before when she had presented back findings in her convenor role. When the session was over I managed to ask her, how do you think that went? *'not sure really, I was trying to*

learn but that made me quite passive, haven't got the hang of this yet'.

Identifying barriers the student/participant may have experienced in taking up an educational leadership role suggests that *internal* barriers may be caused by moving from the routineised role of '*driver'* to that of educational facilitator resulted in loss of confidence and direction. There were no *external* barriers observed as again the learning group appeared supportive.

Table 15: Student/participant 2 profile

S/P contributions	Personal = espoused theories Located from interview data	Behaviour = theories in use Located from interview data
presenter and attendee and research participant	designer/steward/teacher/ facilitator influential/authoritative/ negotiator erudite/wise/adaptive/willing to learn	systems/holistic approach/ team/shared learning /interdependence challenging and testing existing assumptions

Field notes: observing the student/participant in the accepted role of presenter of research and conference attendee

Day one: Thursday March 30th 2006 1.30 – 17.30 p.m.

The student/participant presented his research on day one of the conference. Rather than just observe him during this I decided to observe his behaviour before and after presentation. As an attendee to the conference the student/participant contributed to think tank sessions and took advantage of networking opportunities. During the think tank session the student/participant adopted the role of 'black hat' (as per de Bono's 6 thinking hats) with enthusiasm, he pointed out the pitfalls of the proposals suggested around the table but was keen to point out that this would help them not come unstuck later so it was *'actually a positive not a negative'*. This appeared to align with the OL role of designer/teacher and demonstrated his adaptability by adopting different roles dependent on the context in which they needed to be played out; he was also willing to challenge assumptions of those around the table by focusing their attentions on

'what if's' that come with the black hat role.

Immediately prior to presenting the student/participant was surprisingly nervous but afterwards appeared blasé about the experience. I asked him how it had felt and he laughed and said *'oh yeah fine..up there with the greats now'*. Afterwards during coffee the student/participant chatted with other presenters and not with his student/participant colleagues.

The field observations were interrogated for *internal* and *external* barriers that may have affected the educational leadership role; internal barriers may have been caused by a degree of nervousness in presenting his own research alongside risk management luminaries such as Bob Helmreich and John Culvenor; the student/participant appeared at ease with his educational leadership role in which he was convenor the learning group. There were no *external* barriers observed to the student/participant acting out his educational leadership role either as convenor or as conference presenter.

Day two: Friday March 31st 2006 1 – 17.00 p.m.

I observed the student/participant at intervals during the conference, he frequently asked questions (demonstrating willingness to learn) and challenging knowledge of speakers (aligning with elite category and OL category of challenging assumptions). There appeared to be a social connection (rapport?) between the student/participant and the other speakers. Bob Helmreich referred to him in the first person and even to his presentation the day before. I asked him if this was greatness by association. The student/participant actually blushed at this although was smiling too.

Searching the data for *internal* and *external* barriers to the student/participant acting out his role of educational leader on day two of the conference found that non were observed, the student/participant appeared confident and actively engaged the environment seemed positively supportive.

Table 16:Student/participant 4 profile

S/P contributions	Personal = espoused theories Located from interview data	Behaviour = theories in use Located from interview data
think tank convenor and attendee and research participant	designer/steward/teacher/ facilitator erudite/wise/adaptive/willing to learn	systems/holistic approach/ team/shared learning/ interdependence experimental/ exploratory/experiential

Field notes: observing the student/participant in the accepted role of convenor

Day one: Thursday March 30th 2006 1 – 1.30 p.m.

I observed the student/participant during part of this first think tank session where he had the role of convenor, he had no prior knowledge of using de Bono's thinking hats and quickly asked who had (none did) and then suggested everyone read the instructions and then choose a hat so they could contribute. He became slightly confused with what was required (pointed out to him by one of the other attendees) to which he responded in good humour and suggested they run through it again, some wanted just to carry on but he assured them it would be worth it. This appears commensurate with his OL role of steward and teacher, that he was willing to learn and that he could communicate the interdependence of learning within the group.

There appeared to be no *internal* barriers to the student/participant enacting his educational leadership role, *external* barriers could have presented themselves in the form of the think tank delegates as some of them were initially resistant to his approach of taking time to go through the process and appeared to want to just get on with it. The student/participant was not swayed by this and ensured that the whole group learned the process.

Day two: Friday March 31st 2006 1 – 1.30 p.m.

I observed the student/participant in his role of convenor on the second day. The make up of the group had changed (due to self selection) and as he now knew the six thinking hats process, by the time I had joined them the session was moving pretty

quickly and creative suggestions were flying thick and fast. This seemed too much too soon for the student/participant and he asked them all to calm down so they could think. This seemed to have a dampening effect on those in the group and I was aware of the beginnings of disengagement. The student/participant's approach was consistent with day one and the reaction to having to stop was similar even though the group had changed, perhaps the groups are used to working at such a speed that they don't allow themselves time to think. My colleague joined this session as I was leaving.

Internal barriers that were identified in this session may have caused by the speed at which the student/participant (Eraut, 1994) was required to react to new knowledge and make decisions on that knowledge. The student/participant was still learning the new material, although there had been a 'performance' the day before it appeared he needed more practice. The *external* barriers were the think tank delegates, some of which presented with strong personalities and could have run away with the session, this did not happen as the student/participant continued to lead the group and maintained control.

Table 17:Student/participant 5 profile

S/P contributions	Personal = espoused theories Located from interview data	Behaviour = theories in use Located from interview data
think tank topic + presenter + attendee+ research participant	innovative/visioning/designer/ steward/teacher/facilitator /influential/authoritative /negotiator erudite/wise/adaptive/willing to learn	problem identification/ solving/proactive/systems/ holistic approach/ team/shared learning /interdependence challenging and testing existing assumptions

Field notes: observing the student/participant in the accepted role of presenter and attendee

Day one: Thursday March 30th 2006 12 – 12.30.p.m.

I observed the student/participant during lunch time, he was in deep discussion with the three other attendees (one of which had been a conference presenter that morning)

they were relaying personal experiences of risk management practice around issues of confidentiality (this was the topic the student/participant would present on). The conversation was equally shared amongst the group, with the student/participant contributing expert knowledge on UK legislation. Towards the end of the discussion that morning presenter remarked that as the student/participant was due to present the following day he would look forward to the second day with enthusiasm. This caused the student/participant to remark '*oh, thanks' I will try to make it interesting then!*' in this context the student/participant aligned with the influential category and the elite category demonstrating wisdom and willingness to learn (although his comment about making it interesting reminded me of Goffman and the act of 'saving face' in advance of anything going wrong.

Any perceived *internal* barriers may have been evidenced in the self depreciating remark about trying to make his presentation interesting and could have been associated with confidence in his role as presenter. There were no *external* barriers observed on day one.

Day two: Friday March 31st 2006 2.45 – 3.30 p.m.

The student/participant presented his research on day two. He was much more at ease than student/participant 2 (this surprised me as student/participant 5 had been hesitant in submitting a paper and had required some assurance to see it through). The student/participant was relaxed and invited questions from those present, even joking about being with the conference 'elite'. At the end of the session he invited attendees to ask him questions during break and share what else he had learned. As on day one the student/participant portrayed a role commensurate with the elite (erudite) category, he demonstrated an OL systems approach evidenced in both his participation and encouragement of shared learning.

The data was scrutinised for any *internal* and *external* barriers to the student/participant enacting his educational leadership role and none were found.

Table 18:Student/participant 6 profile

S/P contributions	Personal = espoused theories Located from interview data	Behaviour = theories in use Located from interview data
think tank topic + attendee + research participant	innovative /visioning erudite/wise/adaptive/willing to learn	problem identification/ solving/proactive experimental/ exploratory/experiential

Field notes: observing the student/participant in the accepted role of attendee

Day one: Thursday March 30th 2006 12.30 – 1.00 p.m.

I observed the student/participant on and off from mid morning on the first day during the conference proceedings and during lunch. During the morning the student/participant had been quiet and had not asked questions during any of the sessions. During lunch however he was in discussion with the day's keynote speaker asking many questions relating to ergo-dynamics and risk. This aligned him with the problem identification/solving and exploratory categories. The keynote ended by asking the student/participant if he had any material he could send him and asked him why he wasn't presenting! The student/participant responded with a *'yes'* to the first and in answer to the second *'no time'*.

There were no *internal* barriers observed, although the student/participant was quiet during the conference proceedings this proved insignificant when he was observed during the lunch break. There were no apparent *external* barriers to the student/participant acting out his educational leadership role.

Day two: Friday March 31st 2006 9 – 5.30 p.m.

I observed the student/participant during conference proceedings. His behaviour followed a similar pattern to the day before. At registration he asked the risk-*e* core team questions about the previous day's proceedings, he asked no questions during presentations but immediately after the KTP presentations he approached presenters engaging them in conversation and asking them in depth about the accuracy of their findings and experiences. This aligns the student/participant with the elite category

of willing to learn and moved him into an additional category of challenging assumptions.

Interrogating the data for any *internal* or *external* barriers to the student participant in acting out his educational leadership role found none to be apparent.

Table 19: Student/participant 8 profile

S/P contributions	Personal = espoused theories Located from interview data	Behaviour = theories in use Located from interview data
think tank convenor + attendee + research participant	erudite/wise/adaptive/willing to learn designer/steward/teacher/ facilitator	experimental/exploratory/e xperiential systems/holistic approach/ team/shared learning/ interdependence

Field notes: observing the student/participant in the accepted role of convenor and attendee

Day one: Thursday March 30th 2006 1 – 5.30 p.m.

I observed the student/participant from the afternoon during conference proceedings. I was only able to observe him in his role of convenor when he fed back findings after the think tank session. In this aspect he appeared confident and aligned with OL category of teacher/facilitator.

During presentations the student/participant asked questions and was active in taking notes, when two of the presenters suggested the limitations of their work he offered ideas and experiences where he had 'got stuck' but had been able to resolve problems associated with this. This aligns the student/participant with the elite category of willing to learn and the OL category of sharing learning.

Searching for any observed *internal* or *external* barriers to the student/participant acting out his role as educational leader found that there were none, the student participant appeared confident in this role and the environment was both supportive and appreciative of his contribution.

Day two: Friday March 31st 2006 1.30 – 2 p.m.

I observed the student participant in his role as think tank convenor. He appeared to have an air of authority, and seemed comfortable with discussing the think tank question while delegating each group member an allotted time to represent their 'hat'. This aligned the student/participant with the OL category of shared learning and interdependence, it also demonstrated he was able to allow others to have the space to contribute, his comment *'that's a good idea'* to one of the group added him to the group of rewarding/recognising in educational leadership.

Scrutinising the observations for *internal* or *external* barriers to the enactment of the educational leadership role found none to be observed, the student/participant appeared confident and influential, the environment remained supportive and appeared to value his leadership approach.

Reflective summary day one

This is written after the conference dinner on the first day of the conference proceedings. While analysing the leadership traits/behaviours of the student/participants they have surprised me more than once. I was amazed at the nerves of student/participant 2 and the confidence of student/participant 5. The ability for the student/participants to adopt a particular role appears to be something that is individualistic, although I think that with practice and support they could all develop their educational leadership abilities.

During the conference dinner the student/participants were lively and overheard conversation included from one student/participant to another, *'yes but what do you think about when he said the culture is as important to learning as clinical knowledge'*? *'you seemed to be well in with Bob'*? *'when is your book coming out then*?' In order for the positive effects provided by this conference 'frame' to continue student/participants need to now act out their roles in host organisations and one of the best mechanisms already in place to achieve that is through peer review of teaching practice.

I discussed the data from day one with my colleague who agreed with my interpretation of observed behaviour, he was also surprised by the apparent nerves of student/participant 2 and confidence of student/participant 5 and added that he had observed student participants 6 and 8 offering help and advice during break

time to other attendees. He also recounted a conversation in which one of the presenters asked how we had gotten Bob Helmreich to come to be keynote, to which he responded *'we asked'*.

Reflective summary day two

The atmosphere at the end of this day was markedly relaxed, not that day one appeared stressful but the student/participants appeared to have 'settled'. I noticed this previously during the induction course time spent with them at Gregynog, once they became accustomed to the environment and what was expected the overall mood changed then too. Generally the student/participants appeared more confident (except student/participant 1 who appeared 'stirred up' by having her assumptions challenged). I noticed some student/participant behaviour repeated itself (6 and 4) and some student/participants (8 and 6) moved into new categories. On the whole the student/participants were interactive, knowledgeable, shared learning and were willing to learn. Their pace and style of acting style might be different but as individuals they appeared able to act out roles associated with educational leadership, they appeared to be able to change and adapt, what happens when they move out this frame and back to the frame of the host organisation?

The data from day two was reviewed with a risk-*e* colleague who confirmed interpretations of observed behaviour that were either consistent or inconsistent with the educational leadership role. Themes that were explored (Silverman, 1993) included the transition (Appelbaum and Goransson, 1997) of student/participants leadership traits to those that aligned with trust/recognition and reward. We interpreted (Eisener, 1991) this as representing a 'higher level' aspect of educational leadership as it meant the student/participant would need to feel more emotionally secure (Kotter, 1996; Hancock, *et al,* 2005) in order to be able to exhibit this. In addition my colleague had joined student/participant 4's group when student/participant 4 acted out the role of convenor, he agreed that student/participant 4 needed to take time in acting out the processes required but ultimately the group kept pace with him. I asked if he (my colleague) had contributed in any way *'ah'* he said, *'yes, I said good, I have time to think'*. On reflection we both realised that this may have lent legitimacy to the way in which student/participant 4 was acting as convenor and so by association (Bandura, 1977 (b), 1985) had the effect of endorsing the actions of student/participant 4, this had been observed with plenary speaker Bob

Helmreich and student/participant 2. Endorsement through association may be something that could be drawn on to support student/participants back in their host organisations in the future.

Reflection on Field Notes

Taking these findings as a whole we can see that given the opportunity and support the student/participants were able to portray educational leadership roles in unfamiliar surroundings in what could have proven to be challenging circumstances. The student/participants were put in real life situations where they were alerted to the fact that their espoused theories would be examined to ascertain whether they would be put into practice. During the two days the student/participants were able to reflect on how they were achieving this and experience de-routinisation of embedded practice. De-routinisation was particularly evident in student/participant 1 who exhibited a sense of loss of direction after she had failed to facilitate a group learning experience. What became apparent is that the student/participant displayed similar behaviours on each day, although some moved into different educational categories and given time and support Student/Participant 1 may have developed a less driving and more facilitative educational leadership style. These field observations relied for the most part on witnessing behavioural change, this itself may have been insufficient (Eraut, 1994) and proved a source of potentially invalid data had the peer review of the initial findings not been discussed with a risk-*e* colleague.

Rogers (2005) identified that in order to develop educational leaders, 'champions' need to be found and their positions augmented by '*institutional support, the identification and recruitment of potential teacher-leaders, and a leadership development program'* (Rogers, 2005 p. 13). The risk-*e* OL structures already in place had identified the student/participants as 'champions' and the educational development programme in the form of the risk-*e* curriculum could be said to contribute towards leadership development. An improvement on existing OL structures and processes might in future have seen a closer alignment of the conference frame with learning opportunities and a coaching/mentorship resource. These additions may produce a deeper learning experience for the student/participants, contribute towards their abilities to recognise their own mental schemas particular to educational leadership and assist them in developing

'conference frames' within their employing organisations.

6.3.3 Summary

The findings demonstrated that while the individual learning dispositions of the student/participants aligned with the deep approaches (Biggs, 2003) utilised in the construction of risk-*e*, the employing organisations of the student/participants did not appear to support this; once outside of the risk-*e* LC field the student/participants were not able to bring about as much changes in the way NHS staff learned from adverse incidents as had been anticipated. Using educational leadership and developing further organisational support was perceived as significant levers (Meadows, 1999)with which to sustain educational change agent activities in the future..

In order to support the student/participants post conference, interventions were sought that may overcome '*structural barriers'* (Grieves, McMillan, Wilding, 2006 p. 87) to change agent activities. Interventions that were developed as products are discussed in Chapter 7.

CHAPTER 7: DEVELOPMENT OF TOOLS FOR INDIVIDUAL AND ORGANISATIONAL LEARNING

7 Introduction

This chapter presents PhD tools intended to support individual and organisational learning from adverse incidents. The tools were developed through a systems (Senge, *et al,* 1995) approach to learning that has aligned individual learning *with* organisational learning (Bate and Robert, 2002; Kafman and Senge, *et al,* 1995). Alignment was achieved by connecting individual and group learning opportunities from adverse incidents with organisational reporting and learning systems.

The PhD tools comprise of, tool one, a teaching intervention designed to improve learning from adverse incidents and with learning enhanced performance (Braithwaite, *et al,* 2006). The second tool facilitates the identification of positive learning that comes with reporting adverse incidents and through this learning process locates innovation on practice. These tools were piloted through QIQA. The third tool to be developed from the PhD was 'Whole System Learning Indicators' (WSLI), this was a tool developed to support practitioners in the organisational field to evaluate their own and others learning from adverse incidents. WSLI has been constructed as a 'deep' learning tool (Biggs, 1987, 2003), as such it identifies learning and gaps in learning from adverse incidents across four learning domains (Atherton, 2009). While each tool was valuable individually, their greatest potential might be realised if they were combined and augmented with action research activities, learning communities and coaching, this would provide a comprehensive package that would facilitate individual and organisational learning from adverse incidents.

As in the previous chapter, this chapter begins with a reflexive (Eraut, 1994; Steier, 1991; Bransford, *et al*, 2000) overview and analysis of the tools, signifying their importance to the academic and wider public and private sector organisational communities.

7.1 Reflexive analysis of tools

The objective of the QIQA pilot was to test theories and tools that might positively influence (Lewin, 1947; Brookfield, 1987; Cross and Steadman,1996) learning from adverse incidents, it was envisaged through this process practical workable solutions might be discovered that would enable the flow of organisational learning (Kodate, Dodds and Anderson,2010). QIQA was devised to capture and reframe (Goffman, 1974) thinking associated with learning from adverse incidents and shift this towards a positive mindset.

The first tool that was piloted was a constructed teaching intervention (Braithwaite, *et al,* 2006) that included propositional knowledge on learning from adverse incidents, types of learning (single, double and triple loop) and an introduction to how 'mindfulness' (Levinathal and Rerup, 2006) brings about changes in practice. The learning outcome of the intervention was to achieve transformative learning (Meizerow, 1991) founded on direct life experience, critical reflection of that experience and a rational discourse (Mezirow, 1991) that incorporated *'intuitive, creative, emotional process'* (Grabov, 1997 p.90). This was achieved in a learning environment that removed conditions that may have otherwise created defensive routines (Elliott, Smith, and McGuinness, 2000), removal opened up the classroom to dialogue and experiential learning (Fazey and Marton, 2002; Kolb, 1984). As a corrective process learning required questioning *'cultural norms and prescriptive rules'* (Mathews and Thomas, 2006 p. 186) associated with organisational learning, which, to a greater extent engaged the student/participants in challenging their own assumptions (Argyris and Schön, 1978; Argyris, 1995, 1999) about how they had learned from adverse events.

The potential of engaging in this method of learning cannot be understated and is *'considered paramount to clinical risk management'* (Mathews and Thomas, 2006 p. 186). Being able to accommodate and construct new schemata in relation to learning from adverse incidents was a vital part of the learning change process. Without the ability or the opportunity to challenge existing knowledge and construct new schemata (frame) with which to recognise and retrieve knowledge, there was the potential for mistakes to remain hidden in single loop learning (Meizerow 1991; Elliot, Smith, and McGuinness, 2000; Grieves McMillan and Wilding 2006; Argyris

and Schön 1978).

As a proof of concept, the second tool demonstrated significant potential with which to positively affect the quality of health care provision (Braithwaite, *et al,* 2006). The process consisted of re-framing learning from adverse incidents towards a more positive mindset, and directing learning where valuable stocks of knowledge relating to innovation or improvement on practice (Goffman 1974; Cooperrider, *et al,* 2003; Hosking and Morely, 2004) often remain hidden. The opportunity to demonstrate improvement on practice from adverse incident situations may in itself remove some of the stigma and blame (Huntington, Gillam and Rosen, 2000; Hart and Hazelgrove, 2001; Jackson, 2001) associated with the adverse incident and contribute towards a positive organisational learning culture. There is significant potential for the second tool developed through QIQA to utilise existing NHS reporting and learning systems such as DATIX. Bringing the two together would capture innovation and improvements borne out of learning from personal experience and could be used for the benefit of the organisation as a whole (Senge and Scharmer, 2001).

The third tool, WSLI were developed in order to meet the legitimate demands of health care practitioners, patients and carers to ensure lessons are learnt from adverse events, core to this was that health care practitioners are supported through the process of learning. This is because learning from adverse incidents requires change, change in thinking, feeling and acting, all of which can be a traumatic and difficult progression (Hart and Hazelgrove, 2001; Vincent, 2003; Donovan, Meyer and Fitzgerald, 2007). The WSLI encourage learners to change the way they think about and learn from the 'field' (Lewin 1947, 1948) of adverse incidents. In order to ensure a holistic evaluation of learning from adverse incidents the WSLI were designed to span four learning domains, these are cognitive, affective, psychomotor and interpersonal. This was undertaken because learning limited to behavioural observation was deemed insufficient (Eraut, 1994; Doyle, 1997; Fontana, 1996; Mullins, 1993; Stacy, 2000).

By demonstrating psychomotor skills, exposing attitudes and interpersonal abilities that could (have) contribute (d) to an adverse incident, learning from adverse incidents may be secured and further occurrence avoided in the future. The WSLI were designed to be used by the learners themselves to ascertain personal learning from adverse incidents, they are also intended to guide the educator/trainer/facilitator/coach

to where support is needed to enable others to learn from adverse incidents.

The WSLI align with learning methods such as;

- Discussion/discourse (Habermas, 1974);
- Question and answers sessions;
- Authentic demonstration (using the situated cognitive approach of Brown, Collins and Duguid, 1989);
- The use of simulation in order to make visible learning in the interpersonal and psychomotor domains;
- Use of a talk aloud approach to expose schemata that underpins action.

As transformative learning from adverse incidents may include the use of authentic case studies, role play and re-play (Brown, Collins and Duguid, 1989), the skills required of the educator/trainer/facilitator/coach should include those of managing (Habermas, 1974) what may become emotionally loaded learning experiences (Mezirow, 1991) and the ability to create trusting relationships (Gubbins and MacCurtain, 2008) between social learning actors.

The WSLI were developed in such a way that the learner is asked to deconstruct and construct their own knowledge in relation to an adverse incident (Decker, 2007); this relocates the learner at the core of learning contextually (Boud, Keogh and Walker, 1985; Mezirow, 1991) enabling learners to draw on prior experiences and knowledge through a process of *'remembering, recognising and retrieving material consistent with current situations'* (Pintrich, 2002 p. 22). Critical learning points of the learners are identifiable by marking changes over time on the WLSI competency scale and by being alerted to learner reactions in the Contextual Markers (CM).

The WSLI adopted a constructivist approach to learning and knowledge development (Fry, Ketteridge and Marshall, 1999) which was fundamentally important to ensuring the identification of schemata change and in ensuring learner knowledge is captured. Knowledge capture is assured through a mechanism located within the WSLI which requires learner feedback and suggestions for future development. The WSLI support 'consensus' (Heylighen, 1993 b) amongst learners through shared learning opportunities, for example through peer to peer or coaching learning relationships (Hawkins and Smith, 2006) and/or LC's (Knowles, 1984; Prosser and Trigwell, 1999;

Light and Cox, 2001). This pluralist approach to knowledge construction and OL (Jackson, 2003) may bring the learner to an appreciation that an individual construction of an adverse incident may not be the same or even similar to another's.

A caveat stands in the use of the WSLI which relates to determining learning, firstly some credence has to be given to the fact that unless the educator/trainer/facilitator/coach is able to facilitate learning in such a way that the learner is '*willing to view the world through alternative theoretical lenses*' (Jackson, 2003 p. 202) the learner is likely to cleave to a mindset already favoured (Goffman, 1974). Also the point on the competency scale in which the learner might be placed is not fixed, this is because the learner may assimilate knowledge or accommodate new schemata, they may also react to a particular situation or context (Visser, 2007) differently at any given time (Doyle, 1997; Mallon, 2007) and play out different roles accordingly (Hosking and Morely, 2004). In essence this means that the educator/facilitator/trainer/coach is not working with an 'exact science', the states are not fixed because the human condition does not allow for it.

The WSLI lend themselves to a variety of learning experiences, they may be of especial use in a dyadic coaching learning relationship as this often involves the adoption of reframing techniques (Hawkins and Smith, 2006), challenging assumptions and asking pertinent questions that lead to personal growth (McDermott, 2007).

The section below (table 20) taken from the WSLI, illustrate how they may be utilised in a coaching relationship to gauge espoused theories in relation to an adverse incident and compare them with those practiced.

Table 20: Section of the WSLI

WSLI		
Cognitive domain *Demonstrating meta-cognition in relation to one's own (and others) learning from adverse incidents*	Learners demonstrate ability to critically reflect upon adverse incidents through which they are able to: Recognise/differentiate/evaluate own (and others) underlying taken-for-granted assumptions and locate them within a schemata/frame utilised when learning from an adverse incident.	**Not competent** **Competent** 1 2 3 4 5 6 7

Learning through coaching might be achieved by asking the learner to think about an adverse incident in which they may have been involved, the learner is invited to describe and place themselves within the event in order to discuss what happened. This is followed by a series of questions to locate the learner's schemata, locate how the learner perceives the schemata of others involved, and ascertain the ability of the learner to critically reflect and to accommodate new schemata, or assimilate knowledge in relation to the adverse incident. The coach can initially subjectively locate the learner on the competency scale; this should then be discussed with the learner in order to provide the opportunity for exploration and co-construction (Hosking and Morely, 2004). The process is one of guided *inductive* reasoning (Arthur, 1994) in which the learner is able to identify schemata that possibly no longer work and replace them with others. A key learning point emerges with an identification of dissonance in action theories (Argyris and Schön, 1978) used by the learner and where the CM's become most useful.

The potential for QIQA and WSLI tools to have maximum learning impact on individual and organisational learning from adverse incidents is suggested in the format Whole Learning Systems: adverse incidents (WLS:ai). The emphasis on aligning *positive* with *negative* learning experiences through reporting adverse incidents remains the prominent feature, there are four distinct phases (see appendices 8a and 8c) within WLSI:ai table (21) below presents each of the phases.

Table 21: Four Phases of Whole Learning Systems: adverse incidents (ai)

Whole Learning Systems: adverse incidents (ai)
Phase one: (Theory/propositional and experiential knowledge) Session(s) on learning how to learn (frames and learning schemata), learning systems (including WLS: ai), organisational learning, approaches to learning, reflective/ reflexive thinking about adverse incidents (using key questions). Introduction of an AR project focusing on constructing a dual reporting/learning system. Establishing the LC.
Phase two: (Practicing) Participants are provided with the tools (2&3 supra) that will enable delivery of WLS: ai and are supported in the practice/use of these through coaching and coaching supervision relationships.
Phase three: (Action) Engagement with the 'dual' reporting/learning system that the learners have collaboratively constructed
Phase four: (Feedback) Participants will be included in staged evaluation and feedback on the learning system structure, content and results of learning on practice. This utilises constructivist principles as the learners become part of co-constructing the learning system (Huit, 2009).

The WLS:ai combine the tools with a focused AR project that is designed to engage the learners in the construction of their own organisational reporting and learning facility (Donovan, Meyer and Fitzgerald, 2007; Friedman, 2001); learners are encouraged to build on the findings from the QIQA pilot and adopt a reframing approach to incident reporting. This underlines the collaborative nature of WLS:ai by bringing new learners to a change agent role (Hartley, Benington, and Binns, 1997) and brings learning from adverse incidents back to the 'local' responsibility (organisational) level (Bate, and Robert 2002). The WLS:ai also attempts to move incident reporting from data classification which is a significant feature of most NHS reporting systems, to one that incorporates learning. If blended approaches are applied this may harness face to face and e-learning potential (Kodate, Anderson and Dodds,

2009) for the benefit of the whole organisation. The PhD tools are now be presented as a detailed analysis.

7.2 Third Cycle: Developmental Studies

7.2.1 Study Five: Quality Improvement through Questioning and Analysis (QIQA) and Whole System Learning Indicators

QIQA incorporated two phases from Study Five, the first phase presents findings in table (table 22 a and 22b), clustered under the headings of values of 'Learning', 'Changing Practice', 'Wider Implications' and 'Barriers'; post intervention data had an additional emerging pattern presented as 'Learning in a no-blame culture'. These findings contributed to the development of tool one.

Phase One. ***Table 22 a: Pre Teaching Intervention Data Demonstrating Values and Barriers to Learning from Adverse Incidents.***

PRE TEACHING								
Q.1. Do you think understanding how things go wrong can contribute towards a safety climate? All students (N=20) answered yes (before and after the teaching intervention), data used represents answers that elaborated on a 'yes' in response to questions.								
Value 1: Learning	1. Yes – *as good analysis of case is shown*	5. *Yes. Everyone learns by experience of what has happened whilst working.*	11. *Yes- pre empts mistakes*	12. *Yes having an understanding can lead to appreciation of adverse events and possible reparation*	15. *Yes- may think more about what can go wrong with each of my actions + consequences*	17. *Yes. It is the old saying 'learn from your mistakes'*	19. *Yes. Awareness if crisis evolution so important*	20. *Yes. Preventing problems before they arise. Vigilance*
Value 2: Changing Practice	3. *Yes, only then can you institute changes*	7. *Yes learn from your mistakes, you feel bad and do not do it again!*	8. *Yes – through identification of risk factors change can be implemented.*	10, *Yes it makes you aware of potential risks and they can be changed*	13. *Yes. ID problem can then institute changes to improve*	14. *Yes reduce 'holes' in Swiss cheese model*	18. *Yes know or see things go wrong can compensate for them*	
Value 3: Learning has wider implications (Indication of systems thinking and double loop learning)	2. *Yes analysis of incidents can change systems and reduce risk of further harm*	6. *Learning from mistakes enables the same mistakes to be avoided. Seeing where the errors occurred enable changing the system and avoiding the same mistake*						
Identification of Barriers								

Q.2. Do you think understanding how we learn can contribute towards a safety climate? Out of (N=20) students (N=13) answered yes to the question before the teaching intervention. In itself this is worthy of note as it demonstrates an interest in triple loop learning which is a deeper (Biggs, 1999) and longer lasting form of learning (Eraut, 1998) and has significant effect on OL (Argyris and Schön, (1978); French and Bazalgette, 1996); quotes used are those that elaborated on 'yes' in response to questions.								
Value 1: Learning	2. *Yes = reflection/understanding which improves safety*	11. *Yes learning safety measures teaching*						
Value 2: Changing Practice	4. *Yes. If you can improve learning and therefore have more knowledge then your work practice should be improved.*							
Value 3: Learning has wider implications (Indication of systems thinking and double loop learning)	10. *Yes it should help us to teach more effectively*	12 *Yes – understanding how to learn can result in a more effective response to reflecting on adverse incidents*	19. *Yes especially through small group discussion and sharing information e.g. via departmental meetings*					
Identification of Barriers	8. *No idea – but if we improve adult learning problems may be more identifiable*13. *yes can tailor information given so make people understand*	17. *Yes. We learn by the carrot and the stick. Both of which are effective both of which have drawbacks.*						

Q.3. Do you think a learning culture contributes to a safety climate? N= 19 students answered yes to this question pre and post teaching, student 14 remained the same (N=1 'No'), quotes used are those that elaborated on 'yes' in response to pre and post questions. While the students answered yes post teaching there was a significant increase in relaying of barriers to achieving this.										
Value 1: Learning	1. *Yes near misses and learning from it*	2. *Yes, learning cultures encourage discussion and thinking*	3. *Yes, allows time to be programmed to discuss issues*	5. *Improved education should lead to improved safety*	6. *A learning culture and that is a positive experience will enhance what is learnt and retained and then used in practice*	7. *Yes. knowledge empowers us and makes us smarter, less callous and obviously safer*	8. *Yes – hopefully through education of staff problems can be identified*	11. *Yes more aware of mistakes*	12. *Yes – to effectively learn from mistakes positively contributes towards a safety culture*	15. Yes – *provides background for ongoing self directed learning*
Value 2: Changing Practice	9. *Yes you are always improving your practice*									
Value 3: Learning has wider implications (Indication of systems thinking and double loop learning)	13. *Yes. Then people open to change and how to do this*									
Identification of Barriers	18. *Yes, positive v negative*	19. *Yes if it is allocated time for everyone*								

Table 22b: Post Teaching Intervention Data Demonstrating Values and Barriers to Learning from Adverse Incidents.

POST TEACHING					
Q.1. Do you think understanding how things go wrong can contribute towards a safety climate? All students (N=20) answered yes (before and after the teaching intervention), data used represents answers that elaborated on a 'yes' in response to questions.					
Value 1: Learning	2. *Yes – reflection of analysis of mistakes reduces risk*	12. *~Yes, through understanding and reflection we learn from errors to improve safety climate*	20. *Yes. Improved skills/awareness. Improved propagation of knowledge and increased insistence on safer working environments.*		
Value 2: Changing Practice	8. *Yes if you understand how things go wrong you can identify all factors contributing to the event – and change them.*	15. *Yes – my actions then may prevent things going wrong in the future if I know what to address*	13. *Yes. Once identified can put systems into place to correct them, more people aware of potential problems and how to correct them*		
Value 3: Learning has wider implications (Indication of systems thinking and double loop learning)					
Identification of Barriers	*1. Yes but need resources to implement findings or pointless exercise. Use of near misses can reduce incidence of problems*	11. *Yes, you can predict* ***them*** *but if too negative may worsen the situation*			
Learning in a no blame culture	6. *Yes understanding how things go wrong can give a positive outcome of learning to both the person who made or was involved in the mistake and those learning about the mistake and therefore avoid repeating the same mistake*	7. *Yes openness and awareness of problems create safety in the system*	9. *Yes. You can get it right next time.*		

Q.2. Do you think understanding how we learn can contribute towards a safety climate? Out of (N=20) students (N= 16) answered yes to the question **after the teaching intervention.**							
Value 1: Learning	7. *Yes know your strengths and limitations*[1]	9. *Possibly. Though the knowledge is still used whatever the circumstances that you learnt it in*	10. *Yes, it makes it more effective*	20. *Yes improves learning itself and therefore the above.*			
Value 2: Changing Practice	No additional data						
Value 3: Learning has wider implications (Indication of systems thinking and double loop learning)	6. *Yes. understanding how we learn enables us to direct learning and teaching more efficiently and effectively and therefore improve the safety climate*	8. *Yes – by sharing our experiences of events with others- the same mistakes are less likely to be made*	12. *Yes understanding how we learn can lead to deeper knowing and appreciation of how to create a safer climate.*				
Identification of Barriers	1. *Possibly, but need resources to allow time to do it adequately to benefit from it. Also no need to deconstruct or formalise it with nonsensical new words....turns most doctors off.*	3. *No. we all learn at different speeds and ways and cannot be pigeon holed. Giving time and culture to learn as approved to exact teaching method more important!*	13. *Yes. Need to gain information in way that we can remember it so will actually use again.*				

[1] (N= 16) answered yes to the question

Learning in a no blame culture	2. *Yes positive learning improves knowledge and enjoyment*	18. *Yes positive learning encourages good behaviour as well discouraging bad behaviour/activities*	11. *Yes if learn in a positive way you can extend this to working practice*	17. *Yes mustn't blame people.*	19. *Yes. Providing learning culture becomes positive + less threatening when things go wrong.*	15. *Yes – concentrate on <u>these</u> aspects first to encourage learning + identification of risk factors. <u>Currently unlikely to speak up for fear of persecution.</u>*	

The data includes students 8 + 18 who previously answered 'don't know' and student 15 who previously answered 'no' to question 2; their changes in response indicates the QIQA approach can achieve a degree of reframing towards an appreciation of understanding *how* we learn from adverse incidents. [2]

Pre: 8. *no idea – but if we improve adult learning problems may be more identifiable*

Post: 8. *yes by sharing our experiences of events with others the same mistakes are less likely to be made*

Pre: 15. *no*

Post: 15. *yes – concentrate on <u>these</u> aspects first to encourage learning + identification of risk factors. Currently unlikely to speak up for fear of persecution.*

Pre: 18. *not sure*

Post: 18. *yes positive learning encourages good behaviour as well discouraging bad behaviour/activities*

[2] N= 2 answered possibly/don't know post- teaching intervention (includes student 9 who previously answered 'no') and N= 2 students 3, 14 remain unchanged, answering 'no' to the question post intervention.

Q.3. Do you think a learning culture contributes to a safety climate? N= 19 students answered yes to this question post teaching, student 14 remained the same (N=1 'No'), quotes used are those that elaborated on 'yes' in response to questions.						
Value 1: Learning	5. *Yes a learning culture provides the learning environment in which we are educated..*					
Value 2: Changing Practice	9. *Yes as it gives you the right working environment in which you can improve what you are doing.*					
Value 3: Learning has wider implications (Indication of systems thinking and double loop learning)	8. *Yes and it also enables us to support our staff.*					
Identification of Barriers	1. *Yes, but like everything it has to be properly resourced which means devoting time in order to develop it.*	2. *Yes, positive learning cultures can and do, though it is often not widespread and this means finding a place where you can learn. It can be hit and miss.*	7. *Yes it does but if it is a blame culture in which we learn then I would suggest this has a detrimental effect on the safety climate.*	11. *Yes , it means we can learn lessons without fear*	19. *Yes as long as everyone is committed and serious about this or it we will just say have no time to do this.*	
Learning in a no blame culture	3. *Yes, it does it can contribute in a positive or a negative way depending on the culture.*	6. *Yes. ..that depends on the learning culture if it is a positive culture safety should improve.*	12. *Yes – if the culture is positive and we are mutually supportive then we can learn from mistakes we make*	13. *Yes. A positive learning culture that would embrace learning from events that have had adverse consequences as well as positive consequences would be a fairer system.*	15. *Yes – if it is a positive learning culture would do something to remove the pervasive blame culture in which everyone suffers*	17. *Yes I think so if it were a no blame learning culture*

The findings from the second phase are presented in Table 23, the findings were categorised according to the content of the learning event and what the student/participant felt about having the opportunity to experience a dual reporting/ learning system. These findings contributed to the development of tool two.

7.2.2 Findings

7.2.3 Phase One QIQA

Determining the student/participant's individual schemata associated with learning from adverse incidents involved establishing the student's schemata/frame of learning and patient safety. The findings (N= 20) demonstrated schemata/frames that included understanding how errors were made and (N19) how a learning culture contributed to a safety climate. A significant change in student thinking came with them understanding *how* they learned contributed towards a safety climate (N=13 pre teaching intervention increasing to N= 16 post teaching intervention). The data analysis process included identifying the *values* (Bourdieu, 1989) placed on learning from adverse incidents, which were important as these would provide leverage (Lewin 1947, Bradbury, 2001) points with which to bring about individual (Ramsden 1992, Prosser and Trigwell 1999) and organisational learning (Senge, *et al,* 1995). As the levers (values) were considered alongside *barriers* to learning, attention was directed to tensions in the field (Lewin, 1952) and provided a more rounded view about future action. Values that were identified in the data are discussed below.

Value 1: Learning

Clinicians are often exposed to systemic conditions and teaching practices that encourage surface learning approaches which promote single loop learning (Øvretviet, 2000). This represents a dysfunctional learning system which seriously hampers clinicians' ability to progress from novice to expert (Audit Commission 1999; Vincent *et al*, 2000; Vincent, 2004; Benner, 1984; Eraut, 1994). Actioning a lever (Meadows, 1991; Bradbury 2001) associated with valuing learning meant establishing whether student/participants were interested in double and triple loop learning, a system that encouraged this and a positive culture (Easterby-Smith and Lyles, 2003) of learning from adverse incidents. This was initially demonstrated through a willingness to participate in the teaching intervention (which incorporated learning about learning) and was identified in the following post intervention responses.

Q.1 *'having an understanding can lead to appreciation of adverse events and possible reparation'* *Student 12*

Q.2 *'yes positive learning encourages good behaviour as well discouraging bad behaviour/activities'* *Student 18*

Q.3 *'a learning culture, and that is a positive experience will enhance what is learnt and retained and then used in practice'* *Student 6*

A learning culture that incorporates a willingness to do more than surface learn may be important in determining the quality of what is learned and the flow of knowledge in an organisation (Clarke and Wilcockson, 2001; Davies and Nutely, 2000). Often, clinical knowledge is gained in crisis situations (Benner, 1994) with little time to reflect and understand not just what has been learned, but *how* it has been learned. The result is that learning is not fully realised and remains (single loop) within the individual so the flow is limited (Eraut, 1994; Bransford, *et al,* 2000). A deep approach to learning is one in which there is individual and group reflection in a shared learning experience (Finger and Burgin Brand, 1999; Nonaka, 1998); the students demonstrated that shared learning was important to them,

> *'By sharing our experiences of events with others- the same mistakes are less likely to be made'*
>
> (Student/participant 8)

Shared learning that is borne out of and supported by a positive learning culture offers a way out of defensive routines (Elliott, Smith, and McGuinness, 2000) that may have built up through working alone and experiencing alone what happens when things go wrong. For some of the student/participants finding shared learning opportunities often proved difficult,

> *'Positive learning cultures can and do exist, though it is often not widespread and this means finding a place where you can learn. It can be hit and miss'*
>
> (Student/participant 2)

Value 2: Changing practice

Change is often not an easy process (Kotter, 1996), and changing one's own (or another's) practice that operates within a closed system can prove potentially difficult (Bate, Bevan and Robert, 2005), requiring courage on the part of the change agent (Caldwell, 2003) as conflict and 'turf wars' frequently result in disruption of equilibrium (Lewin, 1947, 1952; East and Robinson, 1994; Elliot, 1991; Jacobson, 2003). Any change starts with an individual's recognition and desire for change; the students' desire for change emerged through the recognition that learning about adverse incidents enabled them to improve on their practice. This double loop or '*second order*' change of mental model is demonstrated in the student/participant quotes below, the student/participants were in the process of constructing new mental models where learning from an adverse incident was seen in a positive light (Jacobson, 2003).

> *'Yes, it makes you aware of potential risks and they can be changed'.*
>
> (Student/participant 10)

> *'Yes, If you can improve learning and therefore have more knowledge then your work practice should be improved'.*
>
> (Student/participant 5)

Value 3:Wider implications

Student/participants who recognised the wider implications (interconnectedness) of learning from adverse incidents, were those who related learning at an individual *and* organisational level which could be achieved in a variety of ways, for example,

> *'Especially through small group discussion and sharing information e.g. via departmental meetings'.*
>
> (Student/participant 19)

The student/participants also realised that having a positive learning culture had a facilitative impact on the staff,

> *'It also enables us to support our staff'.*
>
> (Student/participant 8)

Being able to accommodate (construct new schemata) is seen as a vital part of the change process (Meizerow, 1991; Currie, 2000; Elliot, Smith, and McGuinness,, 2000; Grieves McMillan and Wilding, 2006) without which the opportunity for mistakes to remain hidden (Grieves McMillan and Wilding, 2006) in single loop learning (Argyris and Schön, 1978) is often realised. The following comments demonstrate that 'changing the system' does not go far enough, changing the way people think is as important.

Pre teaching

> *' learning from mistakes enables the same mistakes to be avoided. Seeing where the errors occurred enable changing the system and avoiding the same mistake'.*
>
> (Student/participant 6)

Post teaching

> *'Yes, understanding how things go wrong can give a positive outcome of learning to both the person who made or was involved in the mistake and those learning about the mistake and therefore avoid repeating the same mistake'.*
>
> (Student/participant 6)

The difference in the pre and post teaching intervention comments relate to how the student/participant saw learning from mistakes as achieving a positive outcome for the person who made the mistake and for those involved in error reoccurrence.

Barriers

Another theme that emerged from the data was in relation to perceived barriers to learning from adverse incidents; these included internal (cognitive) barriers mentioned supra:

> *'If we improve adult learning problems may be more identifiable'.*
>
> (Student/participant 8)

> *'We all learn at different speeds and ways and cannot be pigeon holed'.*
>
> (Student/participant 3)

> *'Need to gain information in way that we can remember it so will actually use again'.*
>
> (Student/participant 13)

These students spent a significant amount of time learning in the 'hot conditions' (Benner, 1984; Eraut, 1994) of clinical practice; it was clear that if time isn't dedicated to make sense of the learning experience (Lipshitz, 1993, Klein, 2008) the result is evidenced in poor learning outcomes that often translates in sub-optimal care delivery. Not having time to learn was the most often cited barrier to learning and therefore the most valuable resource, this is exemplified in these student/participant statements .

> *'Giving time and culture to learn as approved to exact teaching method more important!'*
>
> (Student/participant 3)

> *'We need resources to implement findings or pointless exercise. Use of near misses can reduce incidence of problems'.*

(Student/participant 2)

'But like everything it has to be properly ***resourced which means devoting time*** *in order to develop it'.*

(Student/participant 1)

'Yes as long as everyone is committed and serious about this or it we will just say have no time to do this'.

(Student/participant 19)

The consequences of not having time to learn about adverse incidents may eventually reverse an organisational agenda that too often reduces investment in education when resources are low (Hawley, *et al*, 1995). The reasons for this are possibly two-fold:

- There is a perceived political willingness to address issues around why adverse incidents occur (reoccur), this has translated into NHS policy documents and transfers directly into organisational practice
- There is a financial imperative to reduce the costs to the NHS of adverse incidents, learning from them should prevent recurrence and reduce direct and associated costs

When students were asked whether working in a learning culture could contribute to a safety climate, barriers to learning associated with a blame culture surfaced, student/participant 15 responded that they were '*Currently unlikely to speak up for fear of persecution'*, student/participant 11 stated *'yes , it means we can learn lessons without fear'* and student/participant 17 highlighted that you 'mustn't blame people'.

Further responses relating to learning culture and safety from these student/participants suggested the following;

'Providing learning culture becomes positive + less threatening when things go wrong'.

(Student/participant 19)

'Yes it does but if it is a blame culture in which we learn then I would suggest this has a detrimental effect on the safety climate'.

(Student/participant 7)

'A positive learning culture that would embrace learning from events that have had adverse consequences as well as positive consequences would be a fairer system'.

(Student/participant 13)

'Yes – if it is a positive learning culture would do something to remove the pervasive blame culture in which everyone suffers'.

(Student/participant 15)

Blame cultures are often the cause of underreporting (*Organisation with a Memory* 2000; Singer and Edmondson, 2006; Lipshitz, 1993) and remove the opportunity for de-briefing and group learning from adverse incidents, this means that knowledge and insight gained from experiencing an adverse incident often remains of the single loop variety (remaining with the individual). This causes an overall loss of organisational knowledge so that errors are repeated, for the individual who is unable to discuss adverse incidents this implies future practice may be based on inaccurate models of the required standard of care.

7.2.4 Phase Two QIQA

The data the student/participants (N= 10) recorded relating to an adverse incident was associated with administration of medicines, errors associated with technical expertise/judgement and error associated with accepting advice from colleagues. Learning from critical incidents appeared to be associated with times in practice where the clinician had been working 'solo', where they had demonstrated technical skill and judgement and where they had challenged the opinion of colleagues.

There were mixed student/participant responses (N=7) regarding thoughts related to the exercise. Four found the experience positive, two found the experience difficult and one reported a negative response. The findings in Table 23 below present each of

the student/participant's data in terms of the learning events they disclosed and the impact of reporting something positive with a negative had on them.

Phase Two Table 23. Demonstrating types of learning event and impact of dual reporting experience on student.

Adverse learning event	Critical learning event	Impact
1. should have intubated the 6year old kid I did 4 months ago earlier.	1. managed first 'big' cases solo well.	1. I find it difficult to think of something 'worthy'
2. gave a higher concentration of drug than intended	2. performed a dense regional block – allowing surgery to be performed on a very sick patient safely	2. this felt very rewarding!
6. gave wrong blood to patient. Wrong name on blood in theatre. No-one knew patient's name in theatre-emergency procedure.	6. managed case on table on own who was very sick (with telephone discussion with consultant)	6. this exposes differences of how I learnt in each instance. The first did not feel good
8. allowed haemabate to be given to a GA LSCS for bleeding who had a v. mild asthma …but not mild enough	8. performing a nice TIVA/axillery block to lady who had severe pain = pain free for 12 hours and no adverse symptoms	8. missing
11. no value on paediatric T piece circuit for scavenging	11. successful difficult intubation	11. opportunity to say what went right is a good mutual pat on the back with surgeons
12. accepted surgeon (junior) opinion that ..for dental extraction was ok – actually complicated extract and obstructed – needed ETT. Delayed operation.	12. safely asses that ETT needed and intubated safely before op on sub-satisfactory airway.	12 .missing
13. As SHO saw patient for appendicectomy (young and fit) didn't assess airway adequately. –said could intubate- ventilate = laryngospasm.	13. did a whole day case list the other day – everything worked – no-one took ages to wake up/ no-one was sore/no PONV in spite of not all being easy patients.	13. quite nice to remark that sometimes it all works!
14. drug error of antibiotic to an eleven year old child. 4X recommended dose was administered, brief low BP, rash, no long term adverse effects. Difficult post op encounter with angry mother.	14. thorough pre- op assessment and good patient communication made patient and surgeon realise that the operation was unnecessary.	14. do I feel good? Not particularly.
18. used a recognised type of anaesthetic but patient was inappropriate for it and surgery. No adverse outcomes but left uncomfortable until the procedure was complete and patient unharmed.	18. reassessing a patient for inappropriate surgery by appropriate grade of surgeon. Asking for reassessment – got senior opinion – improved the care of the patient.	18. I feel good and buoyed by acknowledging what I have done well.
20. extubated too early.	20. placed a difficult epidural for a laparotomy in a higher risk COPD patient although it was delaying the list	missing

Student/participants who took part in Phase Two may have experienced a debriefing process (Tripp, 1998) that enabled them to reflect on their own practice in a shared environment. Participation meant each knowing the other was divulging an experience in which they had felt '*virtually individual responsibility*' for an adverse incident (Frieidson, 1971 b p.134) which may prove to be unusual practice in itself (Pilgrim and Sheaff, 2006). While the students did not share the content of the adverse incidents with each other, they were sharing the opportunity to revisit an experience that may have left a sense of guilt and failure. This demonstrated a level of trust that a safe learning environment had been provided; as an overt process this may influence an underground management practice which covertly endorses a status quo to cover up mistakes (Mcardle, Burns and Ireland, 2003; Argyris, 1995, 1999). Significantly the errors students shared included those associated with misadministration of medicines, lack of technical expertise/judgement and accepting the wrong advice from colleagues.

All of the student/participants had been given the opportunity to report an adverse incident and something positive that had come out of it, if they were unable to do this they could report an adverse incident alongside a critical learning event with positive outcomes. In total N=9 of the students fell into the latter category and reported a positive learning experience distinct from the adverse incident they had reported. This may have been significant in that at this stage they could not think of a positive learning outcome from an experience that involved an adverse event. Only one student reported an adverse incident (accepting inferior judgment from a colleague) with a subsequent positive learning experience (safe assessment of airway for intubation). All students however experienced Phase Two as a reflective/reflexive process in which reporting and learning from error was framed in such a way that it became associated with success (Histed, Pathupathy and Miller, 2009). This was important as the more recent research on brain plasticity and learning indicates that humans do not immediately learn from failure especially if failure is not immediately detected or if there is no time to reflect on actions. Aligning a negative with a positive experience makes sense with regard to learning from error as the literature that supports professional teaching practice has endorsed combined negative and positive feedback to students for some considerable time (Fontana, 1996; Light and Cox, 2001).

While the data set is small the student/participant responses regarding their thoughts on working through the process were promising. The four student/participants that found the exercise a positive one may continue to balance their own mental schemas/frames with regard to how they interpret their own learning and performance are presented below:

'This felt very rewarding'.

(Student/participant 4)

'Opportunity to say what went right is a good mutual pat on the back with surgeons'.

(Student/participant 11)

'Quite nice to remark that sometimes it all works!'

(Student/participant 13)

'I feel good and buoyed by acknowledging what I have done well'.

(Student/participant 18)

The student/participants who found the experience more difficult may be at the beginning of having their assumptions challenged (Lewin 1947, 1952; Argyris and Schön 1974). about learning from adverse incidents in a different way. These are detailed below;

'I find it difficult to think of something 'worthy'.

(Student/participant 1)

'Exposes differences of how I learnt in each instance. The first did not feel good'.

(Student/participant 6)

'Do I feel good? Not particularly'.

(Student/participant 14)

As part of this exercise student/participants were asked to rate QIQA against three other approaches to learning from adverse incidents, these were RCA, FMEA and contextual learning or 'told how to'. Student/participants rated the QIQA and other approaches using the scale of 1 as being the most favoured and 4 being the least favoured. The results are provided in Table 24 below, the column of the table represents the rating (for example 1) and how many student/participants accorded this rating.

Table 24. Students rating of QIQA

Method of learning from adverse incidents	Rating	Student/participant
Root Cause Analysis **3,4,4,2,4,3,4,3,3,1,4,1,** **3,3,3,4,0,3,4,3,**	1- 2- 3 4 1 missing	2 S/P 1 S/P 9 S/P 7 S/P
Failure Modes Events Analysis **4,3,3,1,2,2,1,4,2,2,3,3,2,** **4,4,3,0,2,3,2,**	1 2 3 4 1 missing	2 S/P 7 S/P 6 S/P 4 S/P
Quality Improvement through Questioning and Analysis **2,1,2,3,3,1,2,2,4,3,1,2,4,** **2,1,2,0,1,1,4,**	1 2 3 4 1 missing	6 S/P 7 S/P 3 S/P 3 S/P
Contextual learning (how to) **1,2,1,4,1,4,3,1,1,0,2,4,1,** **1,2,1,0,4,2,1,**	1 2 3 4 2 missing	9 S/P 4 S/P 1 S/P 4 S/P

As a proof of concept teaching and learning intervention (Braithwaite, 2006) QIQA demonstrated significant potential with which to affect quality of health care provision (Braithwaite, 2006), and leant towards achieving transformative rather than adaptive learning (Appelbaum and Goransson, 1997). QIQA was favoured most by 6 students and was the most popular choice overall, Contextual learning was favoured most by 9 students and was the second most popular choice overall. Although the student

numbers were small (N= 20) and were restricted to a professional group (doctors) the fact that they favoured least the methods most prevalent in the NHS used to learn from adverse incidents is an interesting finding in itself.

7.2.5 Phase Three: Whole System Learning Indicators

Whole System Learning Indicators (WSLI) were developed to support practitioners in the field who had experienced an adverse incident and facilitate a more holistic learning practice for educators, trainers, facilitators and coaches. In essence the WLSI identify learning and knowledge utilisation (Sudsawad, 2007) from adverse incidents. The WSLI were developed from the Deep Learning Indicator (DLI) data analysis tool produced in Study One (Phase Two). The contribution the WSLI make to the learning community include the fact that they address the need to focus attention on the meta-cognition of health practitioners, and increase understanding of the ability to construct and deconstruct schemata/frames in relation to adverse incidents. Ensuring learning is achieved across learning domains means progress can be made towards learning from adverse incidents that is both self referential and genuinely shared (Detert and Edmondson, 2006). Achieving this is particularly difficult since what is 'known' about adverse incidents is often tacit and deeply embedded, and the processes involved in discovering what is known may prove unsettling as cognitive dissonance surfaces.

While developing a *'taxonomy of invisible aspects of learners minds'* (Draper, 2002) would do little to aid the design of academic *'question formats or other concrete teaching and learning activities'* (Draper, 2002), arguably guidance about learning from adverse incidents would be helpful. Guidance for those involved in enabling others to learn from adverse incidents is presented in Table 25 and Table 26. Table 25 may be used as an *'aid memoir'* for those designing programmes of learning from adverse incidents, it identifies four learning domains, associated taxonomies and academic learning theorists/theories that sit alongside OL theorists and their theories. Table 26 presents the WSLI tool which may assist with identifying whether learning is taking place and where support may be needed to aid future learning.

Table 25: A guide for educators/facilitators that align learning domains, theorists and taxonomies.

1. Cognitive: (meta learning)	Academic Theorists	Taxonomy	OL theorists	Theories
Cognitive = thinking and change in schemata may bring about behavioural change	Bloom 1956 Anderson and Krathwohl (2001)	1.Knowledge 2.Comprehension 3.Application 4.Analysis 5.Synthesis 6.Evaluation 1. Remembering 2. Understanding 3.Applying 4.Analysing 5.Evaluating 6.Creating	Senge 1995 Argyris and Schön 1978 Scharmer 2008 Schön 1983 Meadows (1999)	Mental Models Single Loop, Double Loop and Triple Loop Learning. 7 steps theory- U Reflection in and on action Evolution of knowledge/organisation
	Academic theorists	**Theories**		
	Piaget 1951 Dewey 1938 Eraut 1994, 1998, 2000 Kolb (1984)	Cognitive constructivism/mental constructs Tactit knowledge Experiential learning cycle		
2. Affective: (deutero learning)	**Academic theorists**	**Taxonomy**	**OL theorists**	**Theories**
Processual (contextual) knowledge. Incorporates a constructivist approach to learning through active interaction with environment/experiences	Krathwhol, Bloom and Masia, 1964 Biggs (1987, 1999)	1. Receiving 2. Responding 3.Valuing 4.Organising and Conceptualising 5.Characterising by valuing or by value concept SOLO taxonomy	Lewin 1947 Argyris & Schön 1978 Senge 1995	AR cycle Single Loop, Double Loop and Triple Loop Learning. Personal Mastery
	Academic theorists	**Theories**	**OL theorists**	**Theories**
	Bateson 1972 Meizerow 1991	Schemata/patterning influences behaviour	Schein 1985 1991 Helmreich. R. L. Merritt.	Culture in relation to learning

	Vygotsky 1978, 1993 Skinner 1972 Bruner 1990, 1996 Marton and Säljö (1976, 1984) Ramsden 1992 Bordeau 1982 Bourdieu and Wacquant. (1992) Knowles 1984 Boud, Keogh and Walker (1985)	Zone of proximal development in skill acquisition (positive) Reward, (negative) punishment and repetition to reinforce learning. Deep/ surface approaches to learning Learning cultures Cultural capital in the learning field Student centred learning Experiential learning is a social process that contains symbolic meaning for the learner.	A.C. (1998) Lewin 1948, 1952 Edmondson and Singer 2008 Detert and Edmondson 2006	Group dynamics and change Managing to execute or managing to learn Silence over voice/latent voice Macro, Micro, Meso reasons for failing to learn
3. Psychomotor	**Academic Theorists**	**taxonomy**		
	Dave 1975 Ackerman 1988	1.Imitation 2. Manipulation 3.Precision 4. Articulation 5.Naturalisation 1. General intelligence (general ability) 2. Perceptual speed 3. Psychomotor ability.		
	Academic Theorists	**Theories**		
	Vygotsky 1978, 1993 Lave and Wenger	Zone of Proximal development Situated learning Behavioural change from direct		

	1991 Bandura, 1977 Kolb 1984 Rolf 1992	experience/action Positive and negative transfer in training		
4. Interpersonal domain	**Academic Theorists**	**Taxonomy**	**OL theorists**	**Theory**
	Rackham and Morgan 1977	Seeking/Giving Information Proposing Building and Supporting Shutting Out/Bringing In Disagreeing Summarizing	Schein 1993 Senge and Scharmer 2001	Dialogue Communities of practice
	Academic Theorists	**Theories**		
	Goffman 1959	Presentation of self		

Whole System Learning Indicators (WSLI): A constructivist approach

The WSLI were constructively (Guba and Lincoln, 1984) developed from pedagogical literature, using identified learning domains and taxonomies to ensure correspondence with already established rules of learning (Heylighen, 1993 b). The WSLI were designed to engage the learner in constructivist learning from adverse incidents. This requires supporting learners to integrate previous knowledge with the current situation by using existing schemas/cognitive frames, or, altering the existing schemas or frames after identifying when the current schemas or frames are not appropriate (Raths, 2002; Eraut, 1994; Goffman, 1974; Johnston, 1995). This process differs significantly from rote learning which is consistent with learning as knowledge acquisition in which students simply seek to add new information to their memories (Biggs, 1987; Mayer, 2002; Light and Cox, 2001). Where possible and feasible the educator/trainer/facilitator/coach also needs to support the learner (practitioner) to change the organisational learning culture (Pearn, Mulroony and Payne, 1998; Hart and Hazelgrove, 2001).

The epistemology of the learning indicators locate them as memes because learners who use them will be attached to a social system (learning environment) and spread of the learning indicators should increase as knowledge is passed in two key ways. Firstly knowledge is shared through the learning indicators themselves as a tool to aid learning from adverse incidents; secondly WSLI processes recommend that knowledge be shared (Heylighen, 1993 (a) (b)). Through shared learning learners would avoid a relative subjective construction and understanding of an adverse incident as the learner is required to distinguish the truth (Heylighen, 1993 (b)) through value consensus with others (Brown, Collins and Duguid, 1989). This amounts to critiquing or peer review of learning which brings consensus of interpretation and interateablity (Mayer, 2002). Peer review of competency within WSLI has been designed to take a practical route so it can form part of normal working activities. Determining competence is the responsibility of both the practitioner and designated colleagues; this enables dialogue about competence, the challenging of assumptions about competence and deep learning from adverse incidents. Because of a peer review narrative, the learners (and designated colleague) are alerted to the possibilities of incongruity in performance when performance contexts change. For the 'field worker' who is using the WSLI to develop and evaluate learning from adverse incidents the contextual markers should support them

if they experience barriers to learning from the person they are working with. Ways in which the WSLI may be used are discussed under the following three points.

1. WSLI are meant to accompany existing learning interventions and inform future learning interventions, as such they can be used by the educator/trainer/facilitator/coach as a tool to identify whether the learner(s) have learned or are learning from adverse incidents across the chosen domains.
2. Because of the constructivist emphasis placed on learning from adverse incidents the WSLI can also be used *by the learners themselves*. This can be undertaken initially, using the simple competency scale as a benchmark with which to establish and chart progress and change in thinking along the learning domains. The process can be repeated and reviewed over time either individually or with a mentor/facilitator/educator/coach and as part of a LC. The WSLI could also be aligned to CPD profiles to demonstrate competence and professional development either as an organisational requirement following an adverse incident or as part of a career progression plan.
3. The WSLI could also be used for peer review (either in the classroom or in the workplace) in which learners ask their colleagues to score them against the indicators, these might then be the basis for which they challenge their own (and others) assumptions about learning as part of a LC.

Contextual Markers (CM)

One of the important features of the WSLI are the Contextual Markers (CM) which were extrapolated from the risk-*e* on-line LC repository. The LC repository had been constructed over a three year period and was a valuable data source for many of the ongoing studies. The data was augmented from personal coaching practice and from NHS colleague experiences in the field. The CM's were designed to alert the educator/trainer/facilitator/coach to positive and negative influences that may affect the quality of learning process and outcomes, once alerted they may then be able to change the contextual conditions (Bateson, 1958; Luthans and Peterson 2003;Tosey, 2008) under which learning takes place and so change patterned behaviour. The CM also suggest interventions that may overcome negative experiences or reactions and build on positive experiences or reactions, the latter in order to encourage learners to adopt deep approaches to learning and construct/reframe schemata with regard to adverse incidents. The CM are presented within the WSLI table (26) below.

Table 26: WSLI For Adverse Incidents

Domain	Specific descriptors	Indicators	Please indicate on the following scale the level of competency
Cognitive	Means demonstrating meta-cognition in relation to one's own (and others) learning from adverse incidents.	Learners demonstrate ability to critically reflect upon adverse incidents through which they are able to: recognise/differentiate/evaluate own (and others) underlying taken-for-granted assumptions and locate them within a schemata/frame utilised when learning from an adverse incident.	Not competent Competent 1 2 3 4 5 6 7
		Learners are able to capture/demonstrate/illustrate symbolically (visual images or metaphors) and provide an example of schemata identification and change (of self and others).	Not competent Competent 1 2 3 4 5 6 7
		Learners are able to distinguish learning strategies and theories of action adopted by themselves (and others) when learning from an adverse incident.	Not competent Competent 1 2 3 4 5 6 7
		Learners are able to identify changes in thinking/learning about adverse incidents (in self and others) using dialogue/narrative to make explicit and evidence 'bleeding out' from assimilation to accommodation of schemata.	Not competent Competent 1 2 3 4 5 6 7
		Learners are able to express creative thinking evidenced through own 'What if' type questioning when analysing /reflecting on adverse incidents.	Not competent Competent 1 2 3 4 5 6 7

Affective	Means demonstrating an appreciation of the attitudes (of self and others) that influence learning from adverse incidents	Learners are able to evaluate the nature of environmental/cultural influence on adverse incidents (pos/ neg) and suggest improvement. Learners are able to evidence collaborative learning using learning systems. Learners are able to review own and others learning from adverse incidents and express learning in an actionable plan. Learners are able to distinguish appropriateness of organising to execute confirmatory (low risk routine) and organising to learn (dynamic high risk) responses to adverse incidents. Learners are motivated to learn from adverse incidents evidenced by directing and locating learning opportunities for themselves and others. Learners are empathetic to the others who are learning from an adverse event (colleagues, patients and carers) observed through the active engagement in collaborative learning and team work. Learners are 'present' and participate at learning from adverse incident opportunities.	Not competent Competent 1 2 3 4 5 6 7 Not competent Competent 1 2 3 4 5 6 7 Not competent Competent 1 2 3 4 5 6 7 Not competent Competent 1 2 3 4 5 6 7 Not competent Competent 1 2 3 4 5 6 7 Not competent Competent 1 2 3 4 5 6 7 Not competent Competent 1 2 3 4 5 6 7

		Learners are able to discern their own (and others) attitudes to learning from adverse incidents.	Not competent Competent 1 2 3 4 5 6 7
		Learners are able to distinguish their own (and others) constructive tensions associated with learning from adverse incidents and manage dissonance.	Not competent Competent 1 2 3 4 5 6 7
		Learners are able to identify and create a safe psychological environment for themselves (and others) to manage conflict/ tensions when learning from adverse incidents.	Not competent Competent 1 2 3 4 5 6 7
		Learners become/are proactive about learning from adverse incidents and through an enabling attitude encourage others to be the same.	Not competent Competent 1 2 3 4 5 6 7
		Learners advocate and act as role model for others to learn from adverse incidents,	Not competent Competent 1 2 3 4 5 6 7
		Learners embrace learning from mistakes and experimentation (willingness to take risks).	Not competent Competent 1 2 3 4 5 6 7
		Learners appreciate/cultivate inter-dependence with others and emphasise team learning from adverse incidents.	Not competent Competent 1 2 3 4 5 6 7

Psychomotor	Means an observable change in performance because one has learned from an adverse incident, includes absence of an unwanted act.	Learners are able to demonstrate acquisition of skill ability from simple action to co-ordinated synchronised movements, evidenced through practice and repetition of skill required to reduce likelihood of occurrence/recurrence of adverse incident). Learners participate in (or conduct) interactive guided learning events using imagery, physical material, rehearsal, trial and error and constructive feedback.	Not competent Competent 1 2 3 4 5 6 7 Not competent Competent 1 2 3 4 5 6 7
Interpersonal	Means having the ability to communicate, positively, effectively and supportively with colleagues/patients /carers when learning from an adverse incident.	Learners are able to provide information, share knowledge that may help others learn from an adverse incident. Learners actively seek information/knowledge that will help themselves (and others) learn from an adverse incident. Learners suggest ideas, innovations, improvements that could reduce/prevent adverse incidents. Learners help others to put their own suggestions forward and support others in implementation of suggestions to reduce/prevent adverse incidents Learners encourage and positively reinforce others to become involved in learning from adverse incidents. Learners appropriately challenge others assumptions about learning from adverse incidents and present a differing perspective.	Not competent Competent 1 2 3 4 5 6 7 Not competent Competent 1 2 3 4 5 6 7 Not competent Competent 1 2 3 4 5 6 7 Not competent Competent 1 2 3 4 5 6 7 Not competent Competent 1 2 3 4 5 6 7 Not competent Competent 1 2 3 4 5 6 7

Learning from Adverse Incidents: Contextual markers (I)

As the nature of learning will be influenced by the context in which one has experienced (or learns from) an adverse incident, these contextual markers are meant to alert the educator/trainer/facilitator to instances that may require an appreciation of what is happening for the learner so a variation in the learning experience may be provided.

I. Where learners have experience of adverse incidents in an environment in which there is a positive learning culture they will be open to working within a team culture, they will responsible for their own (and others) learning from adverse incidents, they will practice open communication with multiple stakeholders, they will be creative, problem solving and look to innovate on how we learn from adverse incidents, they will collaborate and practice in order to be able to perform.

II. Where learners have experience of adverse incidents in a negative learning environment they will seek to blame others for when things go wrong, they will be afraid of exposing themselves to learning opportunities, they will expect punishment and punish others when an adverse incident has occurred, they will practice professional shaming, they will be apathetic and show little motivation, they will be concerned with the 'self', they will have abrasive/poor/ineffective communication skills, they will exclude others who do not fit with their way of being and promote a performance regime.

Learning from Adverse Incidents: Contextual markers (II) Interventions

Learners will have experienced positive and negative contexts, the educator/trainer needs to build on positive learning experiences (of the individual to focus individual learning and of the group so support and role modelling is possible). Where learning episodes trigger memories associated with a positive experience (for example they became motivated to get it right or do better next time, they were supported by peers/organisation, collegiality) or where memories associated with a negative experience (for example fear, shame, guilt, blame, bullying or embarrassment) are triggered these need to be made explicit for the individual (and the group).

The intention (Scharmer, 2008) of the current learning experience (and the learner's part in it) should be made clear to the learners (Gagne, 1995) from the outset, promoting learning from adverse incidents should be done to raise cultural capital and value (Bourdieu, 1989). Encourage the learners to stop 'downloading' (Arthur, 1994, Scharmer, 2008) and avoid the *'push-down principle'* (Raths, 2002 p. 237) in which learners adopt strategies that will result in the least cognitive challenge possible, so that you can presence them in the moment of learning. The use of Argyris and Schön's (1978) 'two columns' method (to identify espoused theories and theories in use about learning from adverse incidents) and Socratic dialogue to ask 'what if' type questions, will extend the boundaries of the situation experienced by the learner by enabling an extension of the learners frame (thereby assimilating new knowledge, skills, attitudes into existing schemata). Suggesting a new frame for thinking about learning from adverse incidents will facilitate accommodation of (new knowledge, skills, attitudes) into a new schemata. In order to reduce tensions between assimilation and accommodation (and change in attitudes) it is helpful to locate a 'safe practice' memory so that the learner may distinguish safe and unsafe practice and recognise their own ability to practice safely (see the QIQA study). Educators/trainers can ask the learner to create (re-create/recall (Gagne, 1995)) an adverse incident scenario and talk through events while comparing them to a safe practice scenario. This should act as an internal reward (Gagne, 1995) to encourage the learner to engage (remain engaged) with learning (Biggs, 1987, Ramsden, 1992) from adverse incidents. Learners could reflect on the event (as a group) and engage in dialogue (Shein, 1993) about the event in order to support each other's learning, include it in their knowledge base and subsequentially apply it to their own practice (Gagne, 1995)

Learner contribution

What indicators that are not already included do you think require incorporation into the GLI?

What knowledge would you add to the contextual markers?

What suggestions would you make for interventions?

Educator/Trainer/Facilitator contribution

What indicators that are not already included do you think require incorporation into the GLI?

What knowledge would you add to the contextual markers?

What suggestions would you make for interventions?

7.2.6 Summary

Finding ways in which to support NHS staff to learn from adverse incidents may be challenging but pedagogy points towards the alignment of individual with organisational learning (Senge, 1990; Biggs, 2003). Facilitating the desired 'deep' learning (Donovan, Meyer and Fitzgerald, 2007) from adverse incidents requires tools to ensure staff have not 'surface learnt' and as a consequence are less likely to repeat errors. The PhD tools presented in this chapter align individual with organisational learning from adverse incidents and bring about a deep form of learning, by incorporating co-construction as part of the WSLI tools the process becomes collaborative, dynamic and may contribute to the what organisations are yet to learn from adverse incidents.

CHAPTER 8: DISCUSSION AND RECOMMENDATIONS

8 Introduction

This final reflexive chapter begins with a discussion of the methodology and methods used throughout the thesis, and considers the strengths and weaknesses of the research design, with suggestions for improvement when conducting future research. The discussion incorporates the personal professional standpoint (Steier, 1991; Schwandt, 1994), taken from the perspective of meaningful experience (Entwistle and Ramsden, 1983; Marton and Saljo, 1976; 1984, Marton and Ramsden, 1988; Biggs, 1988). The validity of this perspective is founded on the fact that AR was selected through a methodological *'choice point'* (Bradbury, 2001 p. 285) and undertaken to ensure learning in the first person (Reason and Bradbury, 2001). Learning in the first person includes that of my own, as a self reflective educational practitioner (Elliot, 1991; Cowan and Weedon, 2000) gained through the context-sensitive nature and unifying integrative processes between teaching, teacher development and curriculum development of AR (Somekh, 1995; Lewis, Perry, and Murata, 2006).

The chapter proceeds to present and discuss the thesis findings and tools in the context of a contemporary literature review, and concludes with a series of policy and practice recommendations.

8.1 Reflection on methodology and research design

As many had done before me, I chose AR as the underpinning methodology for this body of work without a full understanding of what AR entailed (Meyer, 2000); like many others I stumbled between elation and despair as questions were generated and solutions were found (Lewin, 1947, 1952; Reason, 1994). Each AR cycle had a considerable affect on my own and risk-*e* colleagues learning and professional practice, we found ourselves in the ebb and flow of realising we knew little but then made up ground as we engaged with challenging our own assumptions, and as a result learning more (Argyris and Schön, 1978; Anderson, 1977; Atherton, 2010). The practice of AR improved over time and our knowledge on learning from adverse incidents grew incrementally.

The pluralist approach adopted in using AR as the overarching 'housing' research methodology, to a larger extent worked well (Bhattacharya, Cowan and Weedon, 2000).This was because AR provided sufficient freedom at key choice points (Reason and Bradbury, 2001) for the use of other pertinent methodology (action science for example) and methods (data analysis through espoused theories and those in use and framing) with which to pursue a generated research question (Goffman, 1974; Johnston, 1995; Argyris and Schön, 1978, 1996). At times the amount of data generated by the thesis studies was overwhelming and time consuming, and considerable effort was spent developing analysis frameworks and refining questionnaires; this was rewarded by the opportunity to experience 'dasein' as the experiential (action) elements of AR engage the researcher directly in 'beta testing' situations (Carr and Kemmis, 1986). AR field theories (Lewin, 1947) also enabled sensemaking from the tensions that arose as barriers to learning emerged. Sensemaking (Schwandt, 1994) harnessed the collaborative practices espoused through AR with constructivist methods of co-interpretation of data and learning opportunities (Bourdieu, 1989; Mahoney, 2003; Gherhardi and Nicollini, 2000). By drawing on the Bourdieuan philosophy associated with symbolic power, the identification of power levers associated with status contributed to bringing about transformative learning change (Meizerow, 1991). OL principles and practice, arguably developed from AR, shaped the construction of risk-*e* and proved important in determining learning from adverse incidents in student/participant employing organisations (Tosey, 2008); Strang and Jung, 2002).

Reflecting on the methodology and methods chosen for this PhD takes me full circle to ask again the '*ontological, epistemological and methodological questions'* (Guba and Lincoln, 1994 p. 107 – 108) that were posited about the use of AR at the outset of the studies.

1. The ontological question related to the form and nature of learning from adverse incidents and what could be known about it. On reflection AR enabled sense making and co-construction of reality by those at the 'local' level so that what is now known *is* known because the AR process garners experiential and 'sociohistorically' constructed knowledge.
2. The epistemological question asked what was the relationship between the knower and would be knower and what could be known from adverse

incidents? The epistemological choice (Gherhardi and Nicollini, 2000) that arose from this was to merge the roles of knower and would be knower to a level of mutual and interchangeable roles. Knowledge that emerged out of this collaborative practice was a co-interpretation of findings, essentially born out of practice and experience in the 'field' of learning from adverse incident, and a co-construction of learning opportunities. The normative driver was to ensure learning '*moves away from self interest*' (Giddens, 1995 p. 36) and to a greater extent this was achieved, the student/participants were incredibly open to discussing their experiences of learning from adverse incidents and their difficulties of changing practice, the risk-*e* partners were as communicative as their own culture would allow, sharing vital knowledge about risk management systems and practice in order to move away from *'institutional myopia'* (Giddens, 1995 p.39). The ongoing discourse and research was informed by identifying the status and power of the student/participants as symbolically represented in the field, some influence was brought to bear on this using AR interventions.

3. The methodological question demanded the finding of ways to discover what we believed to be known about adverse incidents. This resulted in the adoption of an iterative approach to determine what methods would best fit each emerging situation, all of which were subject to scrutiny as AR cycles unfolded. The research design adapted as understanding became more sophisticated which translated into the variety of methods used and the heuristics and tools developed from each of the studies. Realising the more we learned the less we knew caused another series of questions and turn of the AR cycle. This may well be the case for anyone involved in AR.

AR principles guided the practice of inviting the student/participants to be change agents (part of social change) and to commit to something that involved more than doing what they were used to doing; it was the first step in re-engagement (East and Robinson, 1994) with individual learning in order to find ways to reduce adverse incidents at an organisational level (Bate, Bevan and Robert, 2005). While AR endorses empowerment through change agents (Lewin, 1947, 1952) the nature of AR and the change process (Kotter,1996) can alienate the very people needed to keep social change afloat (Mueller, 1992). For risk-*e* change was sustainable in the long term only if there had been sufficient support within and outwith the risk-*e* LO by

reaching and sustaining a critical mass of leaders/followers (Snow and Benford, 1992). The AR methodology is not a formula for guaranteed success because of which practitioners need to be aware that change brings obstacles and resistance (Somekh, 1995), while Lewin's field theories shed light on the possibility that this might happen, uncovering the causes of these is a complex, demanding and time consuming process (Currie, 2000).

Looking to future practice I would draw more on field theories (Lewin, 1947) and use them in combination with systems (Senge, *et al,* 1995; Oshry, 2007) understanding to inform participative enquiry. This would be undertaken with the caveat that the ambitious requirements of achieving success with personal mastery, mental models, shared vision, team learning and systems thinking (Senge, *et al,* 1995) is often daunting (Smith, 2001 a and b) and sometimes only attainable incrementally. Achieving change and mastering the five principles would be viewed as something to work towards, if this is made explicit from the outset then the reactions and disturbances experienced in the field (Lewin, 1947) may be viewed more as part of an holistic learning process rather than as barriers to learning and change. Perhaps engaging NHS staff in the first instance in seeing systems (Oshry, 2007) might be a smaller and more manageable step towards OL participation.

Pedagogical methods that would feature in future research include 'unlearning' (Rushmer and Davies, 2004) a variety of '*social processes and social management*' (Lewin, 1952 p. 459) practices. 'Unlearning' would precede learning from adverse incidents although this might not proceed in a linear exercise as learners recognise that something has to be unlearned on an ongoing and experiential basis (Bransford, *et al*, 2000 p. 71).

Adopting co-construction of data interpretation and teaching and learning materials certainly added to their validity, relevancy and a feeling of contribution for those involved, it was also fundamental to assimilation and/or accommodation of knowledge (Hoover, 1996). Remembering the *'educator's maxim, Teachers teach as they are taught, not as they are told to teach*' (Hoover, 1996 p. 1) was core to co-constructing learning opportunities and promulgating the deep learning model seen as primary to this thesis. It has long been known that assessment drives student learning (Biggs, 1987, 2003) and this includes learning from adverse incidents, if assessment of learning does no more that test memory *'misunderstandings will never be revealed'*

(Ramsden, 1992 p. 72). It is the responsibility for all of us whose priority it is to ensure learning from adverse incidents that '*original conceptions*' (Bransford, *et al*, 2000 p. 237) are at least challenged so that deep learning may begin.

Policy and Practice Recommendations

- The challenge of AR is take a long term view, the pattern of delays, setbacks and encountering barriers should be balanced with the success that AR brings. AR practitioners need to be aware that this only becomes visible over time and should not be discouraged in the short term turn of events.
- When looking for levers with which to effect change (Lewin, 1947, 1952; Bradbury, 20001), AR practitioners need to ensure there is active support from host organisations in the form of chosen individuals (change agents) who have the ability and power to support change. Incorporate a co-construction model when earning from adverse incidents in order to overcome tensions (barriers) in the field (Lewin, 1947).
- Policy makers should heed criticisms of surface learning from adverse incidents and measurements of learning that adopt only by behavioural assessment (Ramsden, 1992); learning needs to focus on deep approaches and practitioners should assess learning over more than one learning domain (Atherton, 2010).
- Time and resources need to be devoted to the process of 'unlearning' which may be viewed as the forerunner to new learning or re-learning from adverse incidents.

8.2 Thematic discussion of findings and tools linked to the literature

Analysis of the literature through each reconnaissance phase of the AR cycle (Lewin, 1947) demonstrated that the policies on learning from adverse incidents and perceived implementation gap (DoH, 2000, 2001, 2002, 2010) could be bridged by educating key individuals to have teaching and learning knowledge/skills with which to take them forward. Central to this argument was the literature that contributes to what is known about individual and organisational learning. For example, what is known about approaches to learning illuminates how NHS staff and organisations learn (Clarke and Wilcockson, 2001), or fail to learn (Jack, *et al,* 2010; Li, *et al,* 2009) from adverse incidents, and that a surface approach to learning either as an individual (Biggs, 1987; Ramsden, 1992; Prosser and Trigwell, 1999; Pintrich, 2002) or as an

organisation (Senge, 1990, Senge and Scharmer, 2001, Nicollini, *et al,* 2009; Argyris and Schön, 1978) results in only surface results. The literature points to deep transformative learning (Meizerow, 1991; Marton and Säljö, 1984; Sheaff and Pilgrim, 2006) as the mechanism by which real learning from adverse incidents can take place, and in order to do this attention has to shift to a more holistic (Bransford, *et al*, 2000) way in which learning opportunities in relation to adverse incidents are developed and delivered. Creating a learning environment (Senge and Scharmer, 2001) and providing leverage (Meadows, 1991) with which to overcome barriers to individual and organisational learning are fundamentally important in sustaining this deep approach, leverage may be found in the form of status raising activities (Bourdieu, 1989), motivational and aspirational events, coaching/mentoring and in the provision of tools/techniques that support change agents in the field (Strang and Jung, 2002).

The risk-*e* LC was set up to become a LO that could operate in a real and virtual way, the virtual aspect of risk-*e* was meant to augment face to face activities and become a repository for collective knowledge. As a LO risk-*e* was premised on an 'idealised design' (Ackoff, 2001) of OL principles, representing a collective of individuals who were able to learn, share learning, facilitate and promote the learning of the collective, engaging with adaptive and transformative learning and be part of a social change movement to reduce adverse incidents.

The developing learning environment and emerging LC were not only indicators of a LO (Senge and Scharmer, 2001; Nutley and Davies, 2001) they were also important levers in bringing about the desired change in how student/participants were learning from adverse incidents. It was concluded from Study One that although there were initial problems in establishing the e-learning architecture, by collaborating in the resolution of these the student/participants engaged with and contributed to a LO that was available to them in a real and virtual sense. As the LC emerged the student/participants demonstrated learning dispositions commensurate to being able to challenge long held assumptions about learning from adverse incidents. This was initially evidenced by engagement with a 'deep' learning event (three day Induction programme), during which student/participants were able to 'presence' (Ladkin, 2010; Scharmer, 2008) as part of the learning process, and engage in the risk-*e* LC in such a way that brought them out of a '*quasi private, psychologically isolated situation'*

(Lewin, 1952 p.465) and into the risk-*e* learning vehicle for social change. This process challenged assumptions that learning about risk management only required gaining propositional (tell me how to do it) knowledge (Heron and Reason, 2001), and moved understanding towards double loop learning that focused on *'underlying values, goals and standards for performance'* (Friedman, 2001 p.406). Because of the positive indications from Study One, it was envisaged as the population and contributions of the LO increased, progress would also be achieved towards the idealised (LO) design template.

8.3 Study One: Policy and Practice recommendations

Government policies (*Organisation with Memory,* 2000; *Building a Safer NHS for Patients: Implementing an Organisation with a memory,* 2001; *Designed for Life*, 2005; *Making Amends*, 2003; *High Quality Care for All*, 2008) recognise the importance of learning from adverse incidents. Future policies need to embrace the requirement that NHS organisations address the policy practice gap by inculcating a deep learning disposition (Biggs, 2003; Davies and Nutely, 2000; Kodate, Dodds and Anderson, 2011) for their staff.

Policy recommendations

- Developers of NHS organisational policy/procedures that require staff are 'fit for purpose', need to revisit the normative criteria used to develop job descriptions and incorporate requirement that staff have a learning disposition commensurate with a LO. Policies and procedures should support education and training opportunities that enable staff to achieve this and direct learning on attaining competency.

Potential gaps between what an NHS employee has learned is realised in practice (Eraut, 1994, 2004); it is through practice or 'action' that adverse incidents happen (Vincent, Neale and Woloshynowych, 2001; Singer and Edmondson, 2006).

Practice recommendations

- Practitioners in the field of learning from adverse incidents should ensure provision of a safe and open learning environment (Senge and Koffman, 1993; Sheaff and Pilgrim, 2006); this will facilitate the disclosure of adverse

incidents and surface hidden knowledge for the betterment of the whole organisation.

- Reflexive and reflective learning occurs when mistakes are made (Argote and Ingram, 2000) but NHS employees require space and time to think and learn from these. Practitioners need to ensure there is sufficient time to enable a process of unlearning (Davies and Nutely, 2000, Rushmer and Davies, 2004) routineised inappropriate processes and practices that contribute to the causation of adverse incidents.

- NHS staff accessing learning environments through e-learning (DoH, 2000) communities often means dealing with NHS firewalls; these can present as a considerable challenge and is a serious disincentive for staff trying to engage with learning (Childs, *et al,* 2005; Bate and Robert, 2002). Practitioners need to ensure time is allocated to ensuring ease of access, complementarity of media, and alignment of learning approaches.
- Promoting the adoption of constructivist approaches (Guba and Lincoln, 1989; Hosking and Morely, 2004) to programme design and delivery will engage NHS staff who have very little experience of e-learning (Ouellette, 1999).

8.4 Study Two: Policy and Practice recommendations

An exploration into whether the student/participants were becoming agents of change within the risk-*e* social movement, (Weik and Quinn, 1999; Bate, Bevan and Robert, 2005) meant finding evidence of cognitive, attitudinal and behavioural change within the student/participants themselves. Essentially learning was seen as a change 'enabler', and the student/participants demonstrated sufficient adaptive and transformative learning (Bransford, *et al,* 2000; Donovan Meyer and Fitzgerald, 2007) to warrant the view that change was happening. The indication was that change at the individual level would continue to move outward, and impact on a social equilibrium (Lewin, 1947) characterised by learning inertia and organisational amnesia (DOH 2000) towards adverse incidents. The process would bring the student/participants own students towards engagement with deep learning from adverse, bringing them into the increasing risk-*e* network. The sustainability of the risk-e LO and with it the social movement, rested on

ensuring that the student/participants were taking the methods of learning into their own organisations. In contrast to the previous studies that had demonstrated an incremental growth towards achieving LO status and impacting on individual/organisational practice, the key findings from study two identified that although being part of risk-e had been accorded a *'positive valance'* (Lewin, 1952 p.471), there were other tensions that were causing a disconnect between espoused theories about how learning was bringing about change and what was actually happening in practice (Tucker, Nembhard and Edmondson, 2006; Nicollini, *et al,* 2009).

Using learning as a vehicle for individual change (Elliot, 1991) provides an opportunity to bring about systemic change in organisations (Dodgson, 1993; Illes and Sutherland, 2001), and facilitates a social change endeavour (Bate, Bevan and Robert, 2005).

Policy recommendations

- Policies that endorse and guide the NHS to use the classroom as a means with which to provide a non threatening learning environment, also need to consider how students are continued to be supported outside of the classroom (Szulanski, 2000; Sheaff and Pilgrim, 2006).

- Polices should endorse and promote a positive value in learning from adverse incidents and should direct ways in which this could be systemically evidenced across the whole organisation (Nonaka, 1991; Levinathal and Rerup, 2006)

The manner in which learning from adverse incidents is achieved primes and supports the learner to a change agent (Lewin, 1947, 1952) role.

Practice recommendations

- Ensure trust and safety in the learning environment within and outwith the classroom (Hart and Hazelgrove, 2001; Firth-Cozens, 2004)
- Reward and recognise learning and change agent activities (Bourdieu, 1989; Garside, 2004; Evans, *et al,* 2006) that contribute towards a reduction in adverse incidents.

- Incorporate the use of a network of teaching and learning practitioners/mentors/coaches as mechanism with which to support and maximise the impact of learning from adverse incidents (Senge and Sternman, 1990; Oborn, Barrett and Racko 2010).

8.5 Study Three Policy and Practice recommendations

It was through this study that the theme of 'barriers' emerged and became a feature of later studies. OL literature frequently details how change agents (Spreitzer and Quinn, 1996; Garside, 2004; Sheaff and Pilgrim, 2006) and OL change programmes have failed through the effect of intractable barriers; Kotter's (1996) book '*Leading Change'* provides eight key reasons of failing including, complacency, lack of power for guiding coalition, underestimating the power of vision, under-communicating the vision, permitting obstacles to block the vision, failing to create short term wins, declaring victory too soon and neglecting to anchor changes. In line with more recent thought (Friedman, 2001; Sirkin, Keenan and Jackson, 2005) considering risk-*e* as a failure would have been premature, the view was taken that progress had instead 'stalled' which meant investigating through AR why this had happened. Locating differences in espoused and actioned theories (Argyris and Schön, 1978) through fieldwork and interviewing, meant the student/participants barriers to change were exposed and were open to action. Internal barriers relating to self and external barriers relating to environment were ultimately seen as relating to a lack of power (Bourdieu and Wacquant, 1992; Kotter, 1996; Senge and Scharmer, 2001) for the change agents (student/participants) in their host organisations.

Arriving at an early assumption of failure prevents the search for solutions to overcome barriers and re-energising of a change programme (Friedman, 2001; Sirkin, Keenan and Jackson, 2005). Policies need to address longevity so that time and effort spent on change programmes are not wasted and lessons are learned from experiencing delays and barriers to change.

Policy recommendations

- Future policies that influence and direct change programmes should ensure that a reasonable length of time is suggested so that barriers are identified and opportunities to find solutions are made. This is an important for individuals and organisations to learn (Elliot, Smith, and McGuinness, 2000) and for policies to be fully implemented.

Implications from investigating barriers to progress demonstrated that change agents (student/participants) themselves undergo complex experiences associated with unlearning and re-learning (Eraut, 1994; Rushmer and Davies, 2004). The AR practitioner can be supported in the field by knowing that AR cycles will surface change that bring with them experiences of success and failure, these will only be visible over time. AR practitioners also need to be aware that change agents can belong to more than one group and it is the dominant group (Bourdieu, 1989; Dewey, 1938) that holds most influence over the actions of the change agent and the extent to which learning from adverse incidents is possible (East and Robinson, 1994; Firth-Cozens, 2001).

Practice recommendations

- AR practitioners need to be supported through the change process (Firth-Cozens, 2001) and be encouraged to have a long term view of change programmes.
- AR practitioners need to find levers for influencing dominant groups so change agents can be effective (Meadows, 1999; Friedman, 2001).

8.6 Study Four Policy and Practice recommendations

Study Four revolved around identifying student/participants espoused theories relating to educational leadership and power (Alimo- Metcalfe and Lawler, 2001; Levinathal and Rerup, 2006), finding levers to influence the 'life space' (Lewin, 1948; Meadows, 1999) or organisational field (Caroll and Edmondson, 2002) in which the student/participants were experiencing barriers to change, and testing whether the students could or would respond to the levers to operationalise their espoused theories

in the field. Drawing on the Bourdieuan literature of symbolic power and social value, and Goffman's frame theories, a 'field' was constructed so that the levers (Bradbury, 2001), of 'educational leadership' and perceived 'status' could be tested (Bourdieu and Wacquant, 1992). The levers represented a vision with which student/participants could align and possibly realise an embodied (Ladkin and Taylor, 2010) aspect of their educational leadership role. Participation in the risk-*e* international conference (the constructed field) provided an opportunity to reframe (Goffman, 1959, 1974, Johnston, 1995) schemata towards a sense of status and power (Deming, 1982; Friedman, 2001). The outcome indicated that the constructed field (international conference) was conducive to both exposing and influencing practice, and was a positive force (Lewin, 1947) in restarting the momentum of the social movement. Barriers to implementing espoused theories through change agent activities (Davies, Nutley and Mannion, 2000) could be overcome if certain 'leverage points' (Meadows, 1999, Bradbury, 2001) were established. These 'leverage points' would act as a bridge between the risk-*e* LO (constructed field) and the student/participants host organisations (operant field).

The transference of learning from one environment to another (Friedman, 2001; Argote and Ingram, 2000) and actioning of espoused theories in host organisations (Stacy, 2000), may be dependent on finding a 'bridge' between the two. Without a 'bridge' change agents become cut off from support (Hartley, Benington and Binns, 1997) and as a result are less effective in the environment in which they are attempting to bring about change.

Practice recommendation

- AR practitioners need to be aware when they are introducing an intervention designed to influence an organisational field (Lewin, 1952), there need to be a 'supports' between the constructed field and operant (student/participant) field.
- Framing a constructed field of learning so as to sustain learner activity in the organisational field is an important factor in achieving sought after outcomes (Goffman. 1974; Eraut, 1994; Johnston, 1995).

8.7 Study Five Policy and Practice recommendations

Study Five produced tools for individual and organisational learning through research that incorporated reframing learning in a safe learning environment (Mcardle, Burns and Ireland, 2003; Pearn, Mulroony and Payne, 1998) known as QIQA, and the production of WLSI with which to direct and evaluate learning across four learning domains. QIQA was premised on the belief that while a blame learning culture that surrounds learning from adverse incidents is a strong force (Lewin, 1947) in the organisational field, there is symbolic capital (Bourdieu,1989) and counterforce of having a non-blame learning system and culture. QIQA captured learning from adverse incidents through a process in which notions of blame, and associated emotions of fear were reframed, and incorporated a simulation of a dual reporting and learning system also reframed to facilitate positive learning outcomes. The intention to influence habitus (Bourdieu, 1989) through reframing learning from adverse incidents was founded on literature that indicates while habitus may become ingrained (or routineised) it is not a fixed state (Baker, 2005); it can be affected and changed (Bourdieu and Wacquant, 1992) possibly and most profoundly through reflective practice and thinking (Dewey, 1916; Argyris and Schön; 1978; Lewin, 1946; Kolb, 1984).

The significance of this in relation to what is now known about human learning with regard to error indicates that if failure is not immediately detected and time is not given over to reflect on actions (Histed, Pathupathy and Miller, 2009) error are more likely to be repeated. In order to illuminate the likelihood of single or double loop learning in this context, Eraut's (1994) work on speed and mode of cognition was aligned with learning from failure (Table 27).

When speed and mode of cognition are linked with positive/negative outcomes the indication is that professional practice is only challenged and deep learning occurring *if* there has been an immediate and identified negative outcome (Histed, Pathupathy and Miller, 2009) and *if* the assumptions that built up that practice are challenged and re-framed.

Table 27: Aligning Eraut's (1994) 'The link between speed and the mode of cognition' in *Developing Professional Knowledge and Competence* with positive and negative learning outcomes. Adapted with permission (see Appendix 2a).

	Speed / learning context		
Analysis	**First zone** Instant Recognition	**Second zone** Rapid Interpretation	**Third zone** Deliberative Analysis
Decision	Instant Response	Rapid Decisions	Deliberative Decisions
Action	Routineised Unreflective Outcome	Action Monitored by Reflection	Action Following a Period of Deliberation
Positive outcome from actions	Less likely to engage with reflection or augment learning later = single loop learning	Learning may be augmented **if** assumptions are challenged and reframing occurs to include looking for improvement = double loop learning	Learning may be augmented **if** assumptions are challenged and reframing occurs to include looking for improvement = double loop learning
Negative outcome from actions	**If** source of error is detected learning may take place **if** assumptions challenged and reframing occurs = double loop learning	Learning augmented **if** assumptions challenged and reframing occurs = double loop learning	Learning augmented **if** assumptions challenged and reframing occurs = double loop learning

In the second and third learning speeds zones there is more opportunity to engage with double loop learning and identify areas of practice that are unsafe. Engaging with this process however may well rest on an understanding and experience of both identifying and challenging assumptions (Argyris and Schön, 1978; Clarke and Wilcockson, 2001; Davies and Nutely, 2000), the ability to re-frame the process of learning to include positive aspects (Light and Cox, 2001) and capture of innovation from adverse incidents, and time given over to reflect and share learning with others (King, 1995). This implies that when professionals are developing their knowledge and competencies, unless they begin to build up a learning practice that challenges knowledge both when there has been positive and negative outcomes, the findings suggest that learning may remain of the single loop variety and errors are more likely to reoccur. QIQA may address this as it requires learners to examine practice that had positive and negative outcomes and used this as a mechanism with which to collect

tacit knowledge that could contribute to innovation on practice (Von Krogh, Ichijo and Nonaka, 2000).

After the QIQA pilot in 2006 a more recent delivery of the approach was given in the Welsh Assembly Government Public Service Management Wales (PSMW) summer school in 2008. It was clear from anecdotal evidence after these workshops that public service staff welcome the opportunity of thinking and learning from adverse incidents in a way that affords them the chance to relate this to a positive experience.

Future policies need to address the fact that NHS practitioners require time and opportunities to become adaptive reflective learners (Bransford, *et al,* 2000; Histed, Pathupathy and Miller, 2009). Policies should direct practice at reengaging staff with an environment that may have contributed to failure in the first place as this is a significant factor in supporting staff to learn from error (Healthcare Commission 2009).

Policy recommendation

- Policy needs to direct practice towards an approach where NHS employees are able to re-frame their own and others learning in such a way that positive learning can be associated with learning from adverse incidents.

NHS staff responsible for ensuring organisational learning from adverse incidents should be supported to develop their practice towards re-framing (Goffman, 1974) learning from adverse incidents in order to achieve transformative learning (Meizerow, 1991). NHS educators/facilitators/coaches and practitioners need to utilise re-framed reflexive and reflective learning experiences on a daily basis.

Practice recommendations

- Reporting and learning systems need to incorporate positive learning from adverse incidents in order to capture tacit knowledge (Eraut, 1994, 2004, 2007) and innovation on practice.

Understanding that learning from adverse incidents crosses more than one domain (Australian Patient Safety Education Framework 2005, World Health Organisation 2009) and developing indicators of learning to either guide or evaluate learning is

based on sound teaching practice (Fontana, 1996, Anderson, 2002, Atherton, 2009). The WSLI were developed for use in a variety of learning experiences and could be taken up by NHS staff who are responsible for individual and organisational learning from adverse incidents. The WSLI have so far not been fully tested in the field but may be of particular use in a dyadic coaching learning relationship. Coaching individuals/teams to learn from adverse incidents would draw on coaching expertise that often involve reframing (Hawkins and Smith, 2006), challenging assumptions and asking pertinent questions that lead to personal growth (McDermott, 2007). For example the section taken from the WLSLI presented in Table 18 could be used to gauge espoused theories in relation to an adverse incident and compare them with those that had been practiced.

Table 28: Section of the WLSLI: ai

WLSLI		
Cognitive domain *demonstrating meta-cognition in relation to one's own (and others) learning from adverse incidents*	Learners demonstrate ability to critically reflect upon adverse incidents through which they are able to: recognise/differentiate/evaluate own (and others) underlying taken-for-granted assumptions and locate them within a schemata/frame utilised when learning from an adverse incident.	Not competent Competent 1 2 3 4 5 6 7

In such an example, learning might be achieved by asking the learner to think about an adverse incident in which they may have been involved. The learner is asked to describe the event and to place themselves within the event in order to discuss what happened, this is followed by a series of questions to locate the schemata (Taylor, 1985; Prosser and Trigwell, 1999; Atherton, 2010) of the learner, locate how the learner perceives the schemata of others involved, the ability of the learner to critically reflect and whether the learner is able to accommodate new schemata or assimilate knowledge (Atherton, 2010) in relation to the adverse incident. The coach can initially subjectively locate the learner on the competency scale; this should then be discussed with the learner so the learner has the opportunity to contribute to, explore and change the evaluation; this approach of co-constructing (Hosking and Morely, 2004) may overcome barriers to learning and change. The evaluation would

then be used in subsequent coaching sessions to identify any further changes. The process is one of guided *inductive* reasoning (Arthur, 1994) in which the learner is able to identify schemata that possibly no longer work and replace them with others that do (Atherton, 2010).

As use of the WSLI depends on the creation of trusting relationships (Gubbins and MacCurtain, 2008) between social learning actors, current testing of WLSI is on a case by case basis, attaining trust is vital to secure involvement so that knowledge is shared and lessons are learned (Singer and Edmondson, 2006). Further take up may depend on both the social networks (Gubbins and MacCurtain, 2008) that are available to engage *with* the WLSLI and social capital (Bourdieu, 1977, 1989; Baker, 2005) accorded by the social networks *to* the WLSLI.

The WLSI are designed to enable co-construction of learning and development of materials which contribute to reducing an automaton response to learning and performance (Barshi and Healy, 1993).

Practice recommendations

- Practitioners could use the WLSI to guide learning and to determine changes in thinking and performance.
- WLSI are designed to be used for individual, team and dyadic learning experiences so that they influence the whole learning system.

Adverse incidents affect patient and employee safety and are financially and psychologically costly to any organisation. It is important to learn from adverse incidents to better understand the organisational and individual antecedents, such as blame culture and resistance to change when dealing with these potentially toxic situations (Kulik, *et al*, 2009). Using educational leadership is a valuable lever with which to focus the resources of organisational change agents, but this needs to have visible and sustainable support if systemic learning from adverse incidents is to be gained and maintained in the long term.

The dominant paradigm associated with learning from adverse incidents supports a surface (Marton and Saljö, 1976) or linear approach so that learning and knowledge is often lost to the organisation (Nicollini, 2009). The tools and approaches identified and developed in this thesis encourage a deep (Biggs, 1987) approach to learning as

they lend themselves to a range of pedagogical methods such as discussion, authentic demonstration, talk aloud and simulation, that expose schemata (Vashdi, *et al,* 2007) across domains and make them open to challenge. Learning in this way may prove to be emotionally loaded experiences (Mezirow, 1990; Kuik, *et al,* 2009) and it is here the skills of the educator, facilitator or coach will be tested to ensure a safe yet transformative learning experience. Learning interventions need to be delivered at critical points in order to safeguard staff as far as possible through a process of self reflection that exposes the ego (Habermas, 1974; this could be achieved in a system that alerts the educator, facilitator or coach to critical learning points evidenced in changes on the WSLI competency scale, or being alerted to learner reactions from the WSLI CM's.

The QIQA tools may offer real opportunities for the workforce to rethink and re-frame learning so that innovation, change and improved performance can manifest in organisational practice. The implications of QIQA for academic or workplace situated teaching and learning is that it extends what we know about organisational learning, and introduces a mechanism by which innovation from adverse incidents can be captured. QIQA has the potential to ameliorate a blame culture that limits disclosure and learning, the learning and reporting tool was designed to augment the NPSA reporting/learning system by targeting how error is reported and framed for those *who* report it.

Recently the government announced it would close the NPSA under a banner headline that it would replace it with a Commission that will target a *reduction in the number of incidents reported* (Guardian July 2010). This may inadvertently send a message to NHS staff that reporting adverse incidents is not a vital part of the way we learn from them (House of Commons Patient Safety Committee 2009; Renshaw *et al.*, 2007), and may as a result contribute to an increase in the severity of negative outcomes. Using a measurement system that targets frequency of reporting (Demming, 1982) of patient safety is dangerous and was identified by Zahlis and Hanson (2005) that this approach has unintentionally increased the severity of injuries and associated costs in America. In 2010 the National Quality Board recommended that a local responsibility model for reporting adverse incidents should be accepted, this is currently enabled through a system called DATEX (which records incidents), retrospective learning from these is provided through the NPSA's RCA. Criticisms of

the DATEX system includes it does not have a learning functionality and a recent scrutiny of RCA has demonstrated considerable shortcomings in both design and application (Nicollini, *et al*, 2009, ISMP, 2010). If the QIQA and the WLSLI tools were aligned to existing reporting and learning systems they may fulfil the requirement of local learning, and by locating them here at 'grass roots' level they could support NHS staff to learn from adverse incidents in the future.

8.9 Conclusion

Although adverse incidents and the learning from them is not limited to the NHS (Laming, 2003; Cullen, 2001; Reason, Carthey and Leval, 2001; Vincent, *et al*, 2000; Firth-Cozens, 2001), learning from adverse incidents in the health context is now an international priority (*Making Amends,* 2003; Wilson, *et al*, 1995; Schioler, *et al*, 2002; Davis, *et al*, 2001),. In order to contribute to a reduction in adverse incidents the tools in this thesis were developed to meet the legitimate demands of NHS staff, patients and carers to ensure lessons are learnt from adverse events, and core to this was that NHS staff were supported through the process (Wilkinson and Fay, 2011).The studies in this thesis have demonstrated there is significant scope to improve on individual and organisational learning from adverse incidents, and that when NHS staff are afforded opportunities to develop as change agents and implement government/organisational policies in an educational role (Bate, Bevan and Robert, 2005; Friedman, 2001) progress towards the reduction of adverse incidents can be made.

This thesis makes an original contribution to the scientific community by applying the science of individual learning (pedagogy) to that associated with error in the organisational context. Learning from error is an important feature of individual learning (Bransford, *et al,* 2000), the ability to do so is shaped by the culture, norms and values of the organisation collective (Dodgson, 1993; Brennan, *et al,* 1991; Davies and Nutley, 2000). Prior learning experiences and current learning cultures are significant influences on learning from adverse incidents and resultant practice outcomes (Fazey, Fazey and Fazey, 2005; Davies, Nutley and Mannion, 2000). Learning from adverse incidents requires the learner to challenge existing knowledge in order for deep and transformative learning to take place (Imel, 1998; Mezirow, 1991); developing a positive learning culture, fair and just norms and values that embrace learning from error will do much to facilitate learning from adverse incidents

and ensure NHS staff are supported through the process (NPSA, 2005(b); Övretviet, 2000; Reason, 2000). This thesis contributes towards this objective by producing research findings and tools that support staff to learn from adverse incidents in the workplace. The findings produced from the use of re-framed learning experiences (Study Four and Five), are particularly significant for those working in the field of individual and organisational learning from adverse incidents as they indicate that much can be done to create positive learning opportunities. For managers and leaders (Heifetz, 1994; Nanus, 1992) who are working towards the development of a positive learning culture from adverse incidents, tools that harness tacit organisational knowledge may find those produced in Study Five of particular relevance. In addition the WSLI make a practical contribution to human resource management policy and practice, assisting not only learners, trainers and coaches, but also managers and human resource practitioners in identifying and developing appropriate behavioural change to enhance organisational performance (Minbaeva, Foss and Snell, 2009).

An often quoted term and familiar to those who work in the NHS is from Hippocrates which states "First do no harm" (Veatch, 1989), for those who do harm acknowledging that "To err is human" (Pope, 1711) is only the first step to encouraging learning from when things go wrong. The many steps that follow may bring those who have caused harm to a place where they may ultimately view the experience in a positive light, this thesis and the tools that have been produced may facilitate that journey and contribute to how we can learn from adverse incidents in order to reduce them.

REFERENCES

Ackoff. R. L. (2001) *A Brief Guide to Interactive Planning and Idealised Design.* www.ida.liu.se/~steho/und/htdd01/AckoffGuidetoIdealizedRedesign.pdf

Adams. J.A. (1987). Historical review and appraisal of research on the learning, retention, and transfer of human motor skills. *Psychological Bulletin*, 101, 41-74.

AHRQ (2005) *Advances in Patient Safety: From Research to Implementation.* Volumes 1-4, Publication Nos. 050021 (1-4). http://www.ahrq.gov/qual/advances/

Airasian. P. W., Miranda. H. (2002) *The Role of Assessment in the Revised Taxonomy, Theory into Practice,* Volume 41, Number 4, Autumn. College of Education, The Ohio State University

Alberti. K.G.M.M. (2001) Medical errors: a common problem. *British Medical Journal.* 322:501-502

Alimo-Metcalfe, B., Lawler, J. (2001) "Leadership development in UK companies at the beginning of the twenty-first century: Lessons for the NHS?", *Journal of Management in Medicine*, Vol. 15 Iss: 5, pp.387 - 404

Anders. R. I., Tomai. J. S., Clute. R. S., Olson. T. (1997) Development of a scientifically valid coordinated care path, *Journal of Nursing Administration*, 5, 45-52

Anderson. L.W. (2002) *Curricular Alignment: A Re-Examination. Theory into Practice,* Volume 41, Number 4, Autumn. College of Education, The Ohio State University

Anderson. R. C. (1977) The Notion of Schemata and the Educational Enterprise: General Discussion of the Conference. In *Schooling and the Acquisition of Knowledge*, ed. Richard C. Anderson, Rand J. Spiro, and William E. Montague. Hillsdale, NJ: Erlbaum

Anderson, L .W, Krathwohl, D. R. (eds.) (2001). *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. New York: Longman

Angehrn. A. A., Atherton. J., Angehrn. B. (1999) A Conceptual Framework for Assessing Development Programmes for Change Agents; Proceedings of the 7th European Conference on Information Systems (ECIS'99), Copenhagen, Denmark

Appelbaum. S.H., Goransson. L. (1997) Transformational and adaptive learning within the learning organization: a framework for research and application, *The Learning Organization,* Vol. 4, No. 3, pp.115–128.

Appleton. J.V., King. L. (2002) Journeying from the philosophical contemplation of constructivism to the methodological pragmatics of health services research. *Journal of Advanced Nursing* 40(6), 641–648

Argyris. C. (1980) Some Limitations of the Case Method: Experiences in a Management Development Programme. *Academy of Management Review.* Vol. 5 Number 2. p.291

Argyris. C. (1960) Individual actualization in complex organization. *Mental Hygiene*, 44(2), 226-237)

Argyris. C. (1995) Action science and organizational learning. *Journal of Managerial Psychology,* Vol. 10: 6 p 20 – 2.

Argyris. C. (1999) *On organizational learning*. Published by Blackwell.Elsevier Science Ltd.

Argyris. C., Schön. D. (1974) *Theory in Practice: Increasing Professional Effectiveness.* San Francisco: Jossey-Bass.

Argyris, C. Schön, D (1978) *Organizational learning: A theory of action perspe*ctive. Reading, MA: Addison-Wesley Publishing Company.

Argyris. C., Schön. D. A. (1996) *Organisational Learning: Vol 2 Theory, Method and Practice*. Mass. Addison- Wesley

Argyris, C., Putnam, R., & McLain Smith, D. (1985) *Action Science, Concepts, methods, and skills for research and intervention,* San Francisco: Jossey-Bass.

Aristotle. *Niconachean Ethics* (1976) London: Penguin Books II, p.91

Arthur. B. (1994) Inductive Reasoning and Bounded Rationality (The El Farol Problem) *American. Econ. Review* (Papers and Proceedings), 84, 406, 1994.

Atherton. J. S. (2009) *Learning and Teaching; Bloom's taxonomy* [On-line] UK: Available:http://www.learningandteaching.info/learning/bloomtax.htm Accessed: 10 March 2010

Atherton. J. S. (2010) *Learning and Teaching; Assimilation and Accommodation* [On-line] UK: Available: http://www.learningandteaching.info/learning/assimacc.htm Accessed: 13 July 2010

Audit Commission, (1999) Cover Story: The Use of Locum Doctors in NHS Trusts (national report) ISBN 1 86240 150 0

Australian Patient Safety Education Framework (2005) http://www.health.gov.au/internet/safety/publishing.nsf/Content/C06811AD746228E9CA2571C600 835DBB/$File/framework0705.pdf

Australian/New Zealand Standards (AS/NZS) 4360: (1999) Published by Standards Association of Australia

Ausubel. D. (1968) *Educational Psychology: A Cognitive View.* New York: Holt, Rinehart & Winston.

Baker. S. (2005) *Like a Fish in Water: Aspects of the Contemporary United Kingdom Higher Education System as Intended and Constructed.* Unpublished PhD thesis. Bangor University.

Balla. J. I. (1990a) 'Insights into some aspects of clinical education I, Postgraduate *Medical Journal*, 66:212-217

Balla. J. I. (1990b) Insights into some aspects of clinical education II, A Theory for Clinical Education. *Postgraduate Medical Journal,* 66: 297-301

Bandura, A. (1977) (a) 'Self-efficacy: toward a unifying theory of behavioural change', *Psychological Review*, Vol. 84, pp.191–215.

Bandura, A. (1977) (b) *Social Learning Theory*. New Jersey: Prentice Hall.

Bandura. A. (1985) *Social Foundations of Thought and Action: A Social Cognitive Theory*. Prentice Hall.

Banninster, J.E, Bawcutt. P. A. (1981) *Practical Risk Management.* Witherby and Co.

Baron. N. (2006) The 'TOT': a global approach for the training of trainers for psychosocial and mental health interventions in countries affected by war, violence and natural disasters, *Intervention,* Volume 4, Number 2, Page 109 -1 26

Barrows. H.S. (1985) *How to design a problem based curriculum for the pre-clinical years.* New York. Springer.

Barshi, I., Healy.A. (1993) 'Checklist procedures and the cost of automaticity', *Memory & Cognition*, pp. 496-505.

Bartlett, F.C. (1932). *Remembering: An Experimental and Social Study.* Cambridge: Cambridge University Press.

Baskerville. R.L.; Wood-Harper, A.T. (1996) A critical perspective on action research as a method for information systems research. *Journal of Information Technology,* Volume 11, Number 3, September pp. 235-246(12). Palgrave Macmillan

Bate, S.P. and Robert, G. (2002) 'Knowledge Management and communities of practice in the private sector: lessons for modernising the National Health Service in England and Wales,' *Public Administration*, 80(4): 643-663

Bate P., Bevan H., Robert G. (2004) Towards a Million Change Agents. A Review of the Social Movements Literature: Implications for Large Scale Change in the NHS. NHS Modernisation Agency, *September*

Bateson, G. (1958). *Naven: A Survey of the Problems suggested by a Composite Picture of the Culture of a New Guinea Tribe drawn from Three Points of View.* Stanford University Press (1936)

Bateson. G. (1972) *Steps to an ecology of mind.* San Francisco: Chandler.

Becker. H.S., Geer B. (1982) Participant observation: the analysis of qualitative field data. In: Burgess RG, ed. *Field research: a sourcebook and field manual.* London: Allen and Unwin.

Benner. P.(1984) *From Novice to Expert.: Excellence and Power in Clinical Nursing* Practice. Addison-Welsey Publishing Company. California

Berelson, B. (1971) *Content Analysis in Communication Research*, Free Press, New York.

Berliner. D. C. (2002) Educational Research: The Hardest Science of All. *Educational Researcher,* Vol. 31, No. 8, pp. 18–20

Bhatia. R., Blackshaw. G., Rogers. A., Grant. A., Kulkarni. R. (2003) Developing a departmental culture for reporting adverse incidents. *International Journal of Healthcare Quality Assurance* 16/3 154-156

Bhattacharya. B., Cowan. J., Weedon. E. (2000) Action Research: A Means to More Effective Teaching and Learning. *Innovations in Education and Training International.* Taylor & Francis.

Biggs, J. B (1987) *Student Approaches to Learning and Studying*, Hawthorn, Victoria: Australian Council for Educational Research.

Biggs, J.B. (1988) Approaches to learning and essay writing in R.R Scheck (ed). *Learning Strategies and Learning Styles.* New York.: Plenum.

Biggs, J. B. (1999). *Teaching for Quality Learning at University*, SHRE and Open University Press.

Biggs, J. B. (2003): Aligning Teaching and Assessment to Curriculum Objectives. Imaginative Curriculum Project, LTSN Generic Centre.

Blaxter, L., Hughes, C.,Tight, M. (1996) *How to Research*, Open University Press,Buckingham.

Boote. D. N, Beile. P. (2005) Scholars Before Researchers: On the Centrality of the Dissertation Literature. *Educational Researcher*; Aug/Sep 2005; 34, 6;

Boreham, N.C. (1977), "The use of case histories to asses nurses' ability to solve clinical problems", *Journal of Advanced Nursing*, Vol. 2, pp. 57-66.

Boud, D., Keogh, R.,Walker, D. (1985). Promoting reflection in learning: A model. In D. Boud, R. Keogh, & D.Walker (Eds.), *Reflection: Turning experience into learning* (pp. 18-40). London: Kogan Page.

Boud, D.,Walker, D. (1998). Promoting reflection in professional courses: The challenge of context. *Studies in Higher Education*, 23(2), 191–206.

Bourdieu. P. (1977) *Outline of a Theory of Practice*. Cambridge and New York: Cambridge Univ Pres

Bourdieu. P. (1989) Social Space and Symbolic Power. *Sociological Theory*, Vol. 7, No. 1. (Spring) pp. 14-25.

Bourdieu, P., Wacquant. L. (1992) *An Invitation to Reflexive Sociology*. Chicago. University of Chicago Press.

Bowen. D. (1998). Team Frames: The multiple realities of Teams. *Journal of Management Education*. 22(1), pp 95-104.

Bradbury. H. (2001) Learning with the Natural Step: Action Research to Promote Conversations for Sustainable Development. In *Handbook of Action Research. Participative Inquiry and Practice*. Eds Peter Reason and Hilary Bradbury. Sage Publications. London

Braithwaite. J., Westbrook. M. T., Travaglia. J. F., Iedema, R., Mallock, N. A., Long, D., Nugus, P. D.,Forsyth, R., Jorm. C., Pawsey. M. (2006) Are health systems changing in support of patient safety? A multi-methods evaluation of education, attitudes and practice. *International Journal of Health Care Quality Assurance*. Vol. 20 No. 7, 2007 pp. 585-601

Bransford. J.D., Brown. L. A, Cocking. R., Pellegrino. D. (2000) *How People Learn. Brain, Mind, Experience and School.* Ed Bransford, Brown and Cocking. National Academy Press. Washington.

Brennan, T.A, Leape, L.L., Laird, N.M., Hebert, L., Localio, A.R., Lawthers, A.G., Newhouse, J.P., Weiler, P.C., Hiatt. H.H. (1991) Incidence of adverse incidents and negligence in hospitalized patients. Results of the Harvard Medical Practice Studies. *The New England Journal of Medicine.* Vol 324:370-376 Number 6

Brink, P.J. (1991) 'Issues of Reliability and Validity, in J.M. Morse (ed) *Qualitative Nursing Research. A Contemporary Dialogue*, Sage Publications, London.

Brookfield. S. D. (1987) *Developing Critical Thinkers: Challenging Adults to Explore Alternative Ways to Thinking and Acting.* Open University Press. Buckingham. England.

Brown. E. (2005) Otto Scharmer: Theory-U: Presencing emerging futures MIT *Sloan School of Management News Briefs* — July 2005

Brown. R.G.S. (1979) *Reorganising the National Health Service: a Case Study of Administrative Change*. Oxford: Blackwell.

Brown. J. S, Collins. A, Duguid. P. (1989) Situated Cognition and the Culture of Learning. *Educational Researcher,* 18, no. 1 32-41. (EJ 386 603)

Brown. M. Fry. H., Marshall. S. (1999) Reflective Practice, In Fry. H., Ketteridge. S., Marshall S. (1999) *A Handbook for Teaching and Learning in Higher Education: Enhancing Academic Practice.* Ed by Fry, Ketteridge and Marshall. Published by Kogan Page.

Bruner, J. (1990). *Acts of meaning*. Cambridge, MA: Harvard University Press

Burgess. R. G. (1982) (a)Multiple Strategies in Field Research. In *Field Research: a Sourcebook and Field Manual.*(1991) ed Robert. G Burgess. Routledge. London.

Burgess R. G. (1982) (b) Elements of Sampling in Field Research, In *Field Research: a Sourcebook and Field Manual.* (1991) ed Robert. G Burgess. Routledge. London.

Burgess. R.G (1991) *Field Research*: A Sourcebook and Field Manual. Routledge. London.

Burton, M., Higley, J. (1987). "Elite settlements." *American Sociological Review* 52, 295-307.

Butler. S (1970) *Erewhon.* Penguin books.

Caldwell. R. (2003), Models of Change Agency: a Fourfold Classification. British *Journal of Management*, 14: 131–142.

Carr, W. and Kemmis, S. (1986) *Becoming Critical. Education, knowledge and action research,* Lewes: Falmer.

Chein, I., Cook. S.W., Harding. J. (1948) The field of action research. *American Pyschologist.*3: 43-50

Clark, D. (2002) Psychological myths in e-learning. *Medical Teacher*, 24, 598–604.

Clarke. C. L., Willockson. J.(2001) Professional and organizational learning: analysing the relationship with the development of practice. *Journal of Advanced Nursing* 34

Clarke, A., Lewis, D., Cole, I., Ringrose, L. (2005) A strategic approach to developing e-learning capability for healthcare. *Health Information & Libraries Journal,* 22: 33–41. doi: 10.1111/j.1470-3327.2005.00611.x

Childs. S., Blenkinsopp. E., Hall. A., Walton. G. (2005) Effective e-learning for health professionals and students—barriers and their solutions. A systematic review of the literature—findings from the HeXL project. *Health Information and Libraries Journal*

Clothier. C., MacDonald. C. A., Shaw. D. A. (1994) The Allitt Inquiry: Independent Inquiry Relating to Death and Injuries on a Children's Ward at Grantham and Kesteven General Hospital During the Period February to April 1991. London: HMSO.

Cobb, S. C. (2004) Internet continuing education for health care professionals: An integrative review. *Journal of Continuing Education in the Health Professions*, 24: 171–180. doi: 10.1002/chp.1340240308

Coghland. D., Casey M. (2001) Action research from the inside: issues and challenges in doing action research in your own hospital. *Journal of Advanced Nursing*, 34(4), pp.674- 682

Cohen, W. M. and Levinthal, D. A. (1990). 'Absorptive capacity: a new perspective on learning and innovation'. *Administrative Science Quar*terly, 35, 128–52

Cohen, M. M.; Eustis, M. A.; Gribbins, R. E. (2003) Changing the Culture of Patient Safety: Leadership's Role in Health Care Quality Improvement, *Joint Commission Journal on Quality and Patient Safety,* Volume 29, Number 7, 2003 , pp. 329-335(7)

Cooke. L (1999) Health and safety problems associated with doctors' working patterns. BMA. Health Policy and Economic Research Unit. BMA House, Tavistock Square, London.

Covey, S. R. (1989) *The Seven Habits of Highly Effective People*, New York. Simon and Schuster.

Crawford., M., Rutter., D., Manley C., Tyrer., P.(2002) Systematic review of involving patients in the planning and development of health care. *BMJ.* November 30; 325(7375): 1263.

Cross. K.P., Steadman, M.H. (1996) Classroom Research: Implementing the Scholarship of Teaching. Jossey Bass. San Francisco. In Bhattacharya. B., Cowan. J., Weedon. E. (2000) *Action Research: A Means to More Effective Teaching and Learning. Innovations in Education and Training International.* ISSN 1355-8005 online. Taylor Francis. www.tandf.co.uk/journals

Cullen. L.J (1990) The Public Inquiry into the Piper Alpha Disaster, HM Stationery Office.

Cullen. L.J (2001) The Ladbroke Grove Rail Enquiry. Health and Safety Commission. HM Stationery Office.

Culvenor. J. (1997) (a) The use of Creativity Techniques in OHS Risk Management, *Creativity and Innovation Manag*ement 6 (2), 99 - 105.

Culvenor, J. (1997) (b) Breaking the Safety Barrier: Engineering New Paradigms in Safety Design, Unpublished PhD Thesis, University of Ballarat, Austrailia.

Culvenor J (2006) Creating transformational change through innovation in risk management paper presentation for Risk Management Research and Practice: An Educational Perspective, University of Wales, Bangor, Wales. UK - March 30th & 31st

Currie. J. (2000) The Potential of Action Research in the Sustainable Management of Change. Paper for the AARE Conference University of Sydney, 4-7 December, 2000.

Currie. G., Brown A.D. (2003) A narratological approach to understanding processes of organizing in a UK hospital. *Human Relations*. Volume 56(5): 563–586: 034484

Currie, G. Finn, G. and Martin, G. (2008) Accounting for the `dark side' of new organizational forms: The case of healthcare professionals. *Human Relations*; 61; 539

Currie. G , Fitzgerald. L., Keen. J., McBride. A., Martin. G., Rowley. E., Waterman. H. (2010). An organizational behaviour perspective upon CLAHRCs (Collaboratives for Leadership in Health Research and Care): Mediating institutional challenges through change agency. Organisational Behaviour in Healthcare Conference. Paper presentation. Birmingham University.

Cuschieri. A. (2006) Nature of Human Error Implications for Surgical Practice. *Annals of Surgery* Volume 244, Number 5. Errors in Surgical Practice.

Davis. K., Moore. W.E. (1945) 'Some Principles of Stratification' In Bendix and Lipset (1967) eds *Class Status and Power* 2nd Ed RKP London.

Davis. P., Lay-Yee. R., Briant. R., Schug. S., Scott. A., Johnson. S., Bingley. W. (2001) Adverse Incidents in New Zealand Public Hospitals: Principal Findings from a National Survey. Ministry of Health. Government of New Zealand.

Davies, H. T.O., Nutley. S.M (2000) Developing Learning Organisations in the new NHS. *BMJ*

Davies, H.T.O., Nutley. S.M., Mannion R. (2000) Organisational Culture and the Quality of Healthcare. *Quality in Health Care* ;9:111–119

Deming. W.E (1982) *Quality, Productivity and Competitive Position.* Cambridge M.A. MIT Centre for Advanced Engineering.

Department of Health. (1989) Working for Patients. London. The Stationary Office. London.

Department of Health (1997) The New NHS: Modern, Dependable. The Stationary Office. London.

Department of Health. (1998) A First Class Service - Quality in the new NHS. The Stationary Office. London.

Department of Health (2000) The NHS Plan: A Plan for Investment, a Plan for Reform (Cmnd 4818-1) Norwich: HMSO

Department of Health (2000) An organisation with a memory, report of an expert group on learning from adverse events in the NHS. The Stationary Office. London.

Department of Health. (2001) Building a Safer NHS for Patients. Implementing an Organisation with a memory. The Stationary Office. London.

Department of Health (2001) Safety First: Five-year report of the National Confidential Inquiry into Suicide and Homicide by People with Mental Illness The Stationary Office. London.

Department of Health (2002). Learning from Bristol: The Department of Health's Response to the Report of the Public Inquiry into children's heart surgery at the Bristol Royal Infirmary 1984–1995. The Stationary Office. London.

Department of Health. (2003) Making Amends. A consultation paper setting out proposals for reforming the approach to clinical negligence in the NHS. The Stationary Office. London.

Department of Health (2009). 'Innovation for a Healthier Future' http://www.dh.gov.uk/en/MediaCentre/Pressreleasesarchive/DH_098579

Department of Health (2010) The National Quality Board Quality Information Strategy Information on the Quality of Services – Final Report 2010. The Stationary Office. London.

Dewey, J. (1916) *Democracy and Education. An introduction to the philosophy of education* (1966 edn.), New York: Free Press.

Dewey. J (1938) *Experience and Education.* Kappa Delta Pi.

Dewey. J. (1902) *The Child and the Curriculum*. The Universityof Chicago Press. University of Chicago.

Dimond, B. (1995) *Legal Aspects of Nursing*, Prentice Hall, Hemel Hempstead.

Dineen, M., Walsh, K. (1999)'Incident reporting in the NHS'. *Health Care Risk Report* March

Dodgson, M.(1993) Organisational learning: a review of some literatures, *Organisation Studies* 14(3) 375-94.

Donaldson. L (2006) 'Safety first: a report for clinicians, patients and healthcare managers . HMSO. London.

Donovan. L.L , Meyer. S. R. Fitzgerald P.S. (2007) Transformative Learning and Appreciative Inquiry: A More Perfect Union for Deep Organisational Change. Paper Presentation. Academy of Management Proceedings, Philadelphia, August

Dorfman. W.P., House. R.J. (2004) Global Influences on Organisational Leadership: Literature Review, theoretical rationale and Global project goals In *Culture, Leadership and Organisations. The Global Study of 62 Societies*. edited P.J. Hanges, M. Javidan, P.W. Dorfman, & V. Gupta (Eds.).Thousand Oaks, CA: SAGE.

Draper, S. W. (2002, May 14) *The relationship of the Perry, deep & shallow learning, and Laurillard models* URL http://www.psy.gla.ac.uk/~steve/

Dreifuerst. K. T. (2009) The Essentials of Debriefing in Simulation Learning: A Concept Analysis. *Nursing Education Perspectives*: Vol. 30, No. 2, pp. 109-114.

Dreyfus. S.E., Dreyfus. S.L. (1980) A five stage model of the mental activities involved in directed skill acquisition. Unpublished report supported by the Air Force Office of Scientific Research. University of California. Berkeley. In Benner. P.(1984) *From Novice to Expert.: Excellence and Power in Clinical Nursing Practice.* Addison-Welsey Publishing Company. California

Duff, L. (1995) `Standards of care, quality assurance and accountability' In R.Watson (ed) *Accountability in Nursing Practice*, Chapman and Hall, London.

Dunford, R, W, and Palmer, I, C, (1995). Claims about frames. Practitioners assessment of Utility of reframing. *Journal Of Management Research*,19(1), pp 96-106.

East. L., Robinson J. (1994) Change in process: bringing about change in health care through action research. *Journal of Clinical Nursing* 3, 57-62.

Easterby-Smith, M. Lyles, M.A. (eds.) (2003) *The Blackwell Handbook of Organizational Learning and Knowledge Management*, Oxford: Blackwell Publishing Ltd.

Edmondson, A. 2003. *Organizing to Learn*: HBS Publishing (Note-5-604-031).

Edmondson, A. C., S., J. Singer (2008). Confronting the tension between learning and performance. *The Systems Thinker*, (19) 1: 2-7.

Eisener. E. (1991) The enlightened eye: Qualitative inquiry and the enhancement of educational practices. In Schwandt. T.A (1995) Constructivist, Interpretivist Approaches to Human Inquiry. In *Handbook of Qualitative Research* ed Denzin N.K and Lincoln Y.S. Sage Publications. London.

Elden, M., Chisholm, R.F. (1993) "Emerg*ing Varieties of Action Research: Introduction to the Special Issue,"* Human Relations (46:2), pp. 121-142.

Elliot. J. (1991) *Action Research for Educational Change*. Open University Press. Buckingham.

Elliott, C., Hayward, D (1998). The expanding definition of framing and its particular impact on economic experimentation. *Journal of Socio-Economics*, 27(2), pp 229-234.

Elliott, D., Smith, D., McGuinness, M. (2000) 'Exploring the failure to learn: crises and the barriers to learning', *Review of Business,* Fall/Winter, Vol. 21, Nos. 3–4.

Entwistle. N. (1981) *Styles of Learning and Teaching: An Integrated Outline of Educational Psychology for Students, Teachers, and Lecturers*. John Wiley & Sons.

Entwistle, N., Ramsden, R. (1983). *Understanding student learning*. London : Croom Helm, 1983.

Entwistle , N. (1988). *Styles of Learning and Teaching*. David Fulton.

Eraut, M. (1994) *Developing Professional Knowledge and Competence*, Falmer Press. London.

Eraut, M., Germain. J., James. J., Cole. Y., Bowring. S., Pearson. J. (1998) Development of knowledge and skills in employment. Research Report 5 University of Sussex, Institute of Education.

Eraut. M. (2000) Non-formal learning and tacit knowledge in professional work. *British Journal of Educational Psychology*;70:113–36.

Eraut M. (2004) Informal learning in the workplace. Studies in Continuing Education ;26:247–73.

Eraut. M. (2007) Professional knowledge and learning at work, *Knowledge, Work and Society*, 45-62

ESRC (2005) Research Ethics Framework. Economic and Social Research Council. Swindon.

Evans, S. M., Berry, J. G., Smith, B.J., Esterman, A., Selim, P., O'Shaughnessy, J., DeWit. M. (2006) Attitudes and barriers to incident reporting: a collaborative hospital study. *Qual Saf Health C*are ;15:39–43

Fals Bord. O. (2001) Participatory Action Research in Social Theory: Origins and Challenges. In *Handbook of Action Research: Participative Inquiry and Practice*. Eds Peter Reason and Hilary Bradbury. Sage Publications. London

Fazey, I., Fazey, J. Fazey. D. (2005) Learning more effectively from experience. *Ecology and Society* 10(2): 4. URL: http://www.ecologyandsociety.org/vol10/iss2/art4/

Fazey. J., A. Marton., F. (2002) Understanding the space of experiential Variation. *Active learning in Higher Education*. Sage. London

Feden. P.D., Vogel, M. R.(1993) *Methods of Teaching: Applying Cognitive Science to Promote Student Learning.* New York: McGraw Hill.

Field. P.(ed) (2003) *Modern Risk Management A History*, Risk Books, London.

Fillingham, F. (2003) Improvement Leaders' Guide to Process mapping, analysis and redesign. NHS Modernisation Agency.

Firth-Cozens. J. (2001) Cultures for improving patient safety through learning: the role of teamwork *Quality in Health Care*;10 (Suppl II):ii26–ii31

Firth-Cozens. J. (2004) Organisational Trust the Keystone to Patient Safety. *Quality and Safety in Health Care*;13:56–61

Flanagan. J. C. (1954) The Critical Incident Technique. *Psychological Bulletin*. Vol 51 no. 4 pp 327- 58

Foddy, W. (1993) *Constructing Questions for Interviews and Questionnaires*. Theory and Practice in Social Research, Cambridge University Press, Cambridge.

Fontana. D.(1996) *Psychology for Teachers*. The British Psychological Society. Macmillan Press.

Frankenberg. R. (1991) *Contemporary Social Research*: 4. edited by Robert.G. Burgess. Routledge. London Series Editor Martin Blumer

Freire. P. (1970) *Pedagogy of the Oppressed.* Penguin Books. London.

French. R, Bazalgette. J. (1996) From `Learning Organization' to `Teaching-Learning Organization'? *Management Learning,* 27; 113

French B., Thomas. L.H., Baker. P., Burton. C. R. Pennington. L., Roddam. H. (2009) What can management theories offer evidence-based practice? A comparative analysis of measurement tools for organisational context. *Implementation Science* 2009, 4:28

Friedman. V. J. (2001) The Individual as Agent of Organisational Learning. In *The Handbook of Organisational Learning and Knowledge*. Ed Meinolf, Berthoin, Child and Nonaka. Oxoford University Press.

Frieidson. E. (1971) A Profession of Medicine: A Study of Sociology of Applied Knowledge. New York, Dodd. Mead an Co. In Eraut. M (1994) *Developing Professional Knowledge and Competence.* Falmer Press. London p.53

Frieidson. E. (1971) b The Professional Mind. *CA Cancer J Clin.* 17;130-136

Fry. H., Ketteridge. S., Marshall S. (1999) *A Handbook for Teaching and Learning in Higher Education: Enhancing Academic Practice.* Ed by Fry, Ketteridge and Marshall. Published by Kogan Page.

Fullan. M (1993) *Change Forces: Probing the depths of educational re*form. Falmer Press. London.

Gagne, R. M., Briggs, L. J., Wager, W.W. (1992). *Principles of instructional design* (4th ed.). New York: Harper Collins.

Gagne, R. M. (1995) Learning Processes and Instruction. *Training Research Journal.* 1, `17-28

Gans. H. J (1991) The Participant Observer as Human Being: Observations on the Personal Aspects of Fieldwork In *Field Research: a sourcebook and Field Manual.* edited by Robert.G. Burgess. Routledge. London

Gaventa. J. Cornwall. A. (2001) Power and Knowledge In *The Handbook of Action Research.* edited by Reason. P and Bradbury H. Sage. London.

General Medical Council. Doctor as Teacher (1999) www.gmc uk.org/education/postgraduate/doctor_as_teacher.asp

Gick. M.L, Hollyoak. K.J. (1983) Schema induction and analogical transfer. *Psychological Review.* 62:32-51

Giddens. A. (1971) *Capitalism and Modern Social Theory.* Cambridge University Press.

Giddens. A. (1984) *The Constitution of Society.* University of California Press.

Giddens, A.(1995) *Politics, Sociology and Social Theory: Encounters with Classical and Contemporary Social Thought.* Cambridge. Polity Press

Goffman, E. (1959) *The Presentation of Self in Everyday Life*, Doubleday, New York.

Goffman. E. (1974) *Frame Analysis.* Penguin Books. Middlesex. UK

Greenaway. R. (1995) "*Powerful Learning Experiences in Management Learning and Development: A study of the experiences of managers attending residential development training courses at the Brathay Hall Trust* (1988-9)". Unpublished Doctoral Thesis. The University of Lancaster, Centre for the Study of Management Learning.

Greenwood. J. (1994) Action research: a few details, a caution and something new. *Journal of Advanced Nursing.* 20. 13 – 18

Grieves, J., McMillan, J., Wilding, P. (2006) 'Barriers to learning: conflicts that occur between and within organisational systems', *Int. J. Learning and Intellectual Capital*, Vol. 3, No. 1, pp. 86–103.

Griffiths. R.(1983) NHS Management Inquiry Report, London: DHSS. The Stationary Office.

Grimes, R. (1995) 'Reflection on Clinical Legal Education'. *The Law Teacher*, Vol. 29, pp 169-188.

Guardian Newspaper (2010) Cull of quangos to save £180m in health sector. Randeep Ramesh, social affairs editor 26/07/2010

Guardian.co.uk, Friday 6 March 2009 11.25 GMT

Guba E.G., Lincoln. Y.S. (1989) *Fourth Generation Evaluation.* Sage Publications, London.

Guba E.G. & Lincoln Y.S. (1994) Competing Paradigms in Qualitative Research. In *Handbook of Qualitative Research.* Ed Norman K. Denzin, Yvonna S. Lincoln. Sage Publications.

Habermas. J. (1974) *Theory and Practice.* Heinemann. London.

Haho, P. (2004). Paths to deutero-learning through successive process simulations: a case study. *Knowledge and Process Management.* vol. 11, no. 4, pp. 239-251

Ham, C. (2004) *Health Policy in Britain: The Politics and Organization of the National Health Service*, Basingstoke: Palgrave Macmillan.

Hancock. H., Campbell. S., Bignall. P., Kilgour. J. (2005). The impact of Leading Empowered Organisations (LEO) on leadership development in nursing. *International Journal of Health Care Quality Assurance* Vol. 18 No. 3, 2005 pp. 179-192

Handy. C. (1995) Managing the Dream In Chawla S & Renesch J (ed) *Learning Organisations, Developing Cultures to Tomorrows Workplace*, Productivity Press, Portland.

Harkema, S. (2003) "A complex adaptive perspective on learning within innovation projects", *The Learning Organization*, Vol. 10 Iss: 6, pp.340 – 346

Hart. E., Bond. M. (1995) *Action Research for health and social care: a guide to practice*, Open University Press

Hart. E., Hazelgrove. J. (2001) Understanding the organisational context for adverse events in the health services: the role of cultural censorship *Quality in Health Care;*10:257–262

Hartley, J., Benington, J., Binns, P. (1997), "Researching the roles of internal-change agents in the management of organisational change", *British Journal of Management*, Vol. 8 No.1, pp.61-73.

Hawkins. P., Smith. N. (2006) *Coaching, Mentoring and Organisational Consultancy*. MGraw Hill. Open University Press.

Hawley C., Stilwell J., Robinson J., Bond M. (1995) *Nurses manage: issues of nurses and management in the general hospital.* Avebury Press.

Hayes. J., Allinson, C.W. (1998) Cognitive Style and the Theory and Practice of Individual and Collective Learning in Organizations. *Human Relations* 51; 857

Heifetz, R. A. (1994) *Leadership Without Easy Answers*, Cambridge, Mass.: Belknap Press.

Helmreich. R.L. (2003) On error management lessons from aviation. *BMJ.* ;320:781–785.

Helmreich. R. L., Merritt. A.C. (1998) *Culture at Work in Aviation and Medicine: National, Organisational and Professional Influences*. Aldershot, Hampshire: Ashgate Publishing.

Heylighen. F. (1993) *A Principia Cybernetica Web* (Principia Cybernetica, Brussels), http://pespmc1.vub.ac.be/EPISTEMI.html

Heylighen F. (1993) b "Selection Criteria for the Evolution of Knowledge", in: Proc. 13th Int. Congress on Cybernetics (Association Internat. de Cybernétique, Namur), p. 524-528.

Hickman. L. A. (1998) *The Essential* Dewey, ed Larry A. Hickman and Thomas M. Alexander Indiana University Press,

Highhouse, S. (2002) *A History of the T-Group and Its Early Applications in Management Development. Group Dynamics, Theory Research and Practice, Decade of Behaviour*. Volume 6 - number 4- December. Pp. 277-290

HMSO (2001) Bristol Royal Infirmary Enquiry, Learning from Bristol: the report of the public enquiry into children's heart surgery at the Bristol Royal Infirmary, 1985 - 1995, Stationary Office., London. Available at: www.bristol-inquiry.org.uk accessed 15.10.05.

Holden. N. (1990) Preparing the Ground for Organisational Learning: Graduate Training Programmes in Major Japanese Corporations. *Management Learning*; 21; 251

Hollnagel. E. (1998) Context, Cognition and Control. In *Co-operative Process Management: Cognition and Information Technology*. Edited Yvonne Waern. Taylor Francis. London.

Honigmann. J.J. (1982) Sampling in Ethnographic Fieldwork in *Field Research: a Sourcebook and Field Manual.* ed Robert. G Burgess. Routledge. London.

Hoover. W. A. (1996) SEDL Letter Volume IX, Number 3: Constructivism: http://www.sedl.org/pubs/sedletter/v09n03/welcome.html

Hosking, D. M, Morley I. E. (2004) Social Constructionism in Community and Applied Social Psychology. *J. Community Appl. Soc. Psychol.*, 14: 1–14 Published online in Wiley InterScience (www.interscience.wiley.com). DOI: 10.1002/casp.801

House of Commons Health Committee (2009) Patient Safety Sixth Report of Session 2008–09 Volume I Report. London: The Stationery Office

HSC 1999/123 Governance in The new NHS: Controls Assurance Statements 1999/2000: Risk Management and Organisational Controls.

Huntington, J., Gillam, S., Rosen. R. (2000) Organisational Development for Clinical Governance (2000) *BMJ*

Illes V & Sutherland K (2001) Managing Change in the NHS Organisational Change A Review For Health Care Managers, Professionals And Researchers, NHS Service Delivery and Organisation R & D Programme, London.

Imel, S. (1998) Transformative Learning in Adulthood. *ERIC Digest* No. 200. ERIC Clearing house on Adult Career and Vocational Education Columbus OH. http://www.ericdigests.org/1999-2/adulthood.htm

Institute for Safe Medication Practices (2010) Building Patient Safety Skills Common pitfalls when conducting a root cause analysis. *Medication Safety Alert.* www.ismp.org/newsletters/acutecare/articles/20100422.asp

Jack. L., Anderson. J., Kodate. N., Dodds. A. (2010) *Organisational learning to improve patient safety: the potential contribution of informal methods.* King's PSSQ Working Paper. National Institute for Health Research

Jackson. T. (2001) How the media report medical errors: Blunders will never cease. *BMJ* 2001;322:562 (3 March)

Jackson. M. C. (2003). *Systems thinking: Creative holism for managers.* Chichester, UK: John Wiley.

Jacobson. C. (2003) *Introduction to adaptive management.* (Online) URL: http://student.lincoln.ac.nz/am-links/am-intro.html

Jarvie. I. C. (1982) The Problem of Ethical Integrity in Participant Observation. In *Field Research: a Sourcebook and Field Manual.* ed Robert. G Burgess. Routledge. London.

Johnson, B.B. (1991) 'Risk Culture Research Some Cautions', *Journal of Cross-Cultural Psychology,* Vol.22 (1)

Johnston. H (1995) *A Methodology for Frame Analysis: From Discourse to Schema in Social Movements and Culture* edited Johnston. H. and Kandermans. B. UCL Press. London.

Jones. D. (1999) "The Invisible Woman: An experiential study on supports and barriers to career progression for women". Mphil thesis.

Jones. D., Lawson. R. (1998) Visions for Change in Health and Social Care. Final Report on an Adapt- ESF Visions for Change – 2 year European Research Project on Human Resource Development

Jones, D. Britain., S. West., M (2000) Courses for Horses: Health Care Professional Accessing Legal Education. Paper presentation. Law Professors Annual Conference: Cardiff

Kathia. C., Laszlo. A. (1997) Partners in life- Syntony at work. Proceedings of the Ninth International Conversion on the Comprehensive Design of Social Systems, Pacific Grove:ISI.

Katz, F.E. (1969)' Nurses' in Etzioni, A . (ed) The Semi Professionals and their Organisation. New York Free Press. P 54 - 81 in Eraut. M. (1994) *Developing Professional Knowledge and Competence.* Falmer Press

Kemppainen, J.K. (2000) The critical incident technique and nursing care quality research. *Journal of Advanced Nursing*. 32(5):1264-1271, November 2000.

Kennedy. I (1998) *Treat Me Right: Essays in Medical Law and Ethics*. Clarendon Press. Oxford.

Kennedy. I. (2001) Learning from Bristol: the report of the public inquiry into children's heart surgery at the Bristol Royal Infirmary 1984 -1995 Command Paper: CM 5207). HMSO. London.

King. I. W. (1995) Learning? I've Got No Time for Any of That... *Management Learning* 1995; 26; 249

Klein. G (2008) Naturalistic Decision Making. *Human Factors*; 50; 456 http://hfs.sagepub.com/cgi/content/abstract/50/3/456

Klein. P. D. (1998, 2005). Epistemology. In E. Craig (Ed.), *Routledge Encyclopedia of Philosophy*. London: Routledge. Retrieved March 18, 2010, from http://www.rep.routledge.com/article/P059

Knowles, M. (1984). *Andragogy in Action*. San Francisco: Jossey-Bass.

Koffman. F., Senge. P. (2001) Communities of Commitment: The Heart of the Learning Organisation. in Chawla, S. and Renesch, J. (Eds.): Learning Organizations: Developing Cultures for Tomorrow's Workplace, Productivity Press, Portland

Kohn, L.T., Corrigan, J.M., Donaldson, M.S. (2000) *To Err Is Human: Building a Safer Health System*. National Academies Press, Washington, D.C. National Academy of Sciences

Kolb D. A .(1984) *Experiential Learning: experience as the source of learning and development* New Jersey: Prentice-Hall

Kondo, Y. (1994) Kaoru Ishikawa: What He thought and Achieved, A Basis for Further Research, *Quality Management Journal*, pp. 86- 91

Kotter. J.P (1996) *Leading Change*. Harvard Business School Press. USA

Krathwohl, D.R., Bloom, B.S., Masia. B.B. (1964). *Taxonomy of Educational Objectives: The Classification of Educational Goals. Handbook II: Affective Domain.* New York: David McKay Co., Inc.

Kulik. C.T., Cregan. C, Metz. I, Brown. M. (2009) HR managers as toxin handlers: The buffering effect of formalizing toxin handling responsibilities, *Human Resource Management*, 48 (5): 695-716

Ladkin. D. (2010) Enacting the 'true self', towards a theory of embodied authentic leadership. *The Leadership Quarterly*. Vol 21. Issue1.p 64 – 74

Ladkin. D. Taylor. S.S. (2010) Leadership as art: Variations on a theme. *Leadership*. Sage Publications. 6(3) 235–241

Laming. L.J. (2003) The Victoria Climbié Inquiry, Report of an Inquiry by Lord Laming, Department of Health and The Home Office. Cm 5730

Langley. G.J., Nolan., K.M., Norman., C.L, Provost., L.P., Nolan. T.W. (1992). *The Improvement Guide: A Practical Approach to Enhancing Organizational Performance*. New York, NY; Jossey-Bass, 1996.

Lathem. S., Iskander. R., Meyrick. J., Duggan. M. (2003) Supporting PCT Leads in working with complexity. Leading with emergence, Innovation and adaptation. Heath Development Agency

Lave, J., and Wenger, E. (1991) *Situated Learning*. New York: Cambridge

Lawton. R,. Parker. D. (2002) Barriers to incident reporting in a healthcare system. *Qual Saf Health Care* 2002;11:15-18 doi:10.1136/qhc.11.1.15

Levinathal. D., Rerup C. (2006) Crossing an Apparent Chasm: Bridging Mindful and Less-Mindful Perspectives on Organizational Learning. *Organization Science* 17: 502-513

Lewis, C., Perry, R., Murata, A. (2006). How should research contribute to instructional improvement? The case of lesson study. *Educational Researcher*, 35(3), Retrieved December 03, 2009, from http://www.aera.net/uploadedFiles/Publications/Journals/Educational Researcher/3503/3592

Lewin. K. (1946) 'Action research and minority problems', in G W Lewin (ed) *Resolving Social Conflicts: Selected Papers on Group Dynamics* (1948), New York, Harper and Brothers

Lewin. K.(1947) Frontiers in Group Dynamics: Concept, Method and Reality in Social Science; Social Equilibria and Social Change *Human Re*lations, Jun 1947; vol. 1 no 1: pp. 5 - 41.

Lewin, K. (1947) Frontiers in Group Dynamics II: Channels of Group Life; Social Planning and Action Research. *Human Relations*. November vol. 1 no. 2 p.p 143-153

Lewin, K. (1948) *Resolving social conflicts; selected papers on group dynamics.* Gertrude W. Lewin (ed.). New York: Harper & Row.

Lewin. K. (1952) *Group Decision and Social Change.* Readings in Social Psychology. Henry Holt and Co. USA

Lewin, K., Lippitt, R., & White, R. K. (1939). Patterns of aggressive behaviour in experimentally created social climates. *Journal of Social Psychology*, 10, 271-279.

Lewis, C., Perry, R., & Murata, A. (2006). How should research contribute to instructional improvement? The case of lesson study. *Educational Resea*rcher, 35(3), Retrieved December 03, 2009, from http://www.aera.net/uploadedFiles/Publications/Journals/Educational Researcher/3503/3592

Li . L.C., Grimshaw. J. M., Nielsen. C., Judd. M., Coyte. P.C., Graham. I.D (2009) Evolution of Wenger's concept of community of practice, *Implementation Science*, 4:11

Light. G. Cox . R. (2001) *Learning and Teaching in Higher Education.* Paul Chapman Publishing. London.

Lincoln, Y.S., Guba, E.G. (1985) *Naturalistic Inquiry*, Sage Publications, London.

Linden, J. V., H. S. Kaplan (1994) 'Transfusion Errors: Causes and Effects', *Transfusion Medicine Reviews*, Vol. VIII, No. 3 (July) p.175.

Lipshitz, R. (1993). Converging themes in the study of decision making in realistic settings. In G. A. Klein, J. Orasanu, R. Calderwood, & C. E. Zsambok (Eds.), *Decision making in action: Models and methods* (pp. 103–137). Norwood, NJ: Ablex.

Lipshitz. R., Popper. M., Friedman. V.J. (2002) A multi-facet model of organizational learning. *The Journal of Applied Behavioural Science*; Mar 2002; 38, 1;

Lyotard, Jean-Francois. (1979) The Postmodern Condition: A Report on Knowledge. Institut Polytechnique de Philosophie of the Universite de Paris VIII (Vincennes), University of Minnesota Press.

Mallack, A., Lyth. M.,Olsen. D., Ulshafer. M., Sardone. J., (2003) Diagnosing Culture in Health-care Organisations Using Critical Incidents. *International Journal of Healthcare Quality and Assurance* 16/4 180-190

Marquardt. M. (1999) *Action Learning in Action.* Davies-Black Publishing, Palo Alto.

Marsh. J. G., Sproul. L.S., Tamuz. M. (2003) Learning from samples of one or fewer. Dec. *QSHC* pp 465 – 471

Marton, F. and Booth, S. (1997). *Learning and Awareness*, Lawrence Erblaum Associates.

Marton, F., Säljö, R. (1976) 'On qualitative differences in learning. II - Outcome as a function of the learners conception of the task', *British Journal of Educational Psychology*. 46: 115 - 127

Marton, F., Säljö, R. (1984), 'Approaches to learning, in F. Marton (ed). The Experience of Learning, Edinburgh: Scottish Academic Press.

Marton, F., Ramsden, P. (1988) 'What does it take to improve learning'? in P. Ramsden (Ed.) *Improving learning*, London: Kogan Page.

Marton, F., Hounsell D., Entwistle. N. (1984) (eds.) *The experience of learning* Edinburgh: Scottish academic press.

Marx. K (1963) Economic and philosophical manuscripts. In T. B Bottomore (ed)., *Karl Marx: Early Writ*ing: 61 -219. New York; McGraw Hill.

Mason. J.K., McCall Smith. R.A. (1994) *Law and Medical Eth*ics. Butterworths. London.

Mathews. J.I., Thomas. P.T. (2006) Managing clinical failure: a complex adaptive system perspective. *International Journal of Health Care Quality Assurance* Vol. 20 No. 3, 2007 pp. 184-194

Mayer. R. E. (2002) Rote Versus Meaningful Learning. *Theory into Practi*ce, Volume 41, Number 4, Autumn. College of Education, The Ohio State University

McEllhiney. J., Heffernan. O. (2003) Using clinical risk management as a means of enhancing patient safety: The Irish experience. *International Journal of Health Care Quality Assurance* 16/2 90-98

Mcardle, D., Burns. N., Ireland. A. (2003) Attitudes and Beliefs of Doctors towards Medication Error Reporting. *International Journal of Health Care Quality Assu*rance. pp 326 333

McDermott. I. (2007) NLP Coaching In *Excellence in Coaching: the Industry* Guide. Edited by Jonathon Pasmore. Kogan Page.

McGill, I., Brockbank. A. (2004) *The Action Learning Handbook: Powerful Techniques for Education,* Professional Development and Training. Routledge.

McNiff. J, Lomax. P, Whitehead. J. (1998) *You and your action research project*, London: Routledge.

McSherry, R. and Pearce, P. (2002) *Clinical Governance, A Guide to Implementation for Healthcare Professionals*, Oxford: Blackwell Science Ltd.

McTaggart, R. (1996) 'Issues for participatory action researchers' in O. Zuber-Skerritt (ed.) *New Directions in Action Research*, London: Falmer Press.

McTaggart, R., Henry. H., Johnson. E. (1997) Traces of Participatory Action Research; reciprocity among educators. *Australia Educational Action Res*earch, Volume 5, No. 1, 1997

Mead. G.H. (1934) *Mind, Self and Society.: From the Standpoint of a Social Behaviourist.* Chicago. University of Chicago Press.

Meadows D. (1999) Leverage Points: Place to Intervene in a System. Sustainability Institute.

Medical Device Alerts (2009) Reporting adverse incidents and disseminating medical device alerts. Medicines and Healthcare products Regulatory Agency. Department of Health. ISBN 978-1-90-073167-3 (replaces 2007 guidance)

Merriam. S. B. (1998) *Case study research in education. A qualitative ap*proach. San Francisco. Jossey Bass

Meyer. J. (2000) Qualitative research in health care: Using qualitative methods in health related action research. 2000;320;178-181 *BMJ*

Mezirow. J. (1990). How critical reflection triggers transformative learning. In J. Mezirow & Associates (Eds), *Fostering critical reflection in adulthood: A guide to transformative and emancipatory learning.* San Francisco: Jossey-Bass.

Mezirow. J. (1991). *Transformative Dimensions of Adult L*earning. San Francisco, CA: Jossey-Bass.

Miller, M. (2005). Teaching and Learning in Affective Domain. In M. Orey (Ed.), *Emerging perspectives on learning, teaching, and tec*hnology. Retrieved April 15th 2010 http://projects.coe.uga.edu/epltt/

Miller. G.A. (1956) The magical number seven, plus or minus two. Some limits on our capability to process information. *Psychological Review.* 63:81-87

Minbaeva. D, Foss. N., Snell. S. (2009) Bringing the knowledge perspective into HRM, Human Resource Management, Special Issue: *HRM and Knowledge Processes,* 48 (4): 477–483

Minsky, M. (1975) "A Framework for Representing Knowledge." In *The Psychology of Computer Vision*, ed. Patrick H. Winston. New York: McGraw-Hill.

Morris, S. (1997) 'Developing the Role of the Nurse: On Whose Terms? *Health Care Risk Reports*, June, pp 16–17

Mueller. C. M. (1992) Building Social Movement Theory. In *Frontiers of Social Movement Theory*. Edited by Aldon. D. Morris and Carol McClurg Mueller. Yale University Press.

Mumford, A. (1996) 'Creating a learning environment', *Journal of Professional Human Resource Management*, Vol. 4, pp.26–30.

Nanus, B. (1992) *Visionary Leadership. Creating a compelling sense of direction for your organization,* San Francisco: Jossey-Bass.

National Assembly for Wales (2001) Clinical Governance - A Toolkit for Clinical Teams.

National Audit Office (2005) A Safer Place for Patients: Learning to improve patient safety. Report by the Comptroller and Auditor General. | HC 456 Session 2005-2006 | 3 November 2005 LONDON: The Stationery Office

Neuwelt, P., Crampton, P, Crengle, S., Dew, K., Dowell, A.,Kearns, R., Thomas. D. (2005) Assessing and developing community participation in primary health care in Aotearoa New Zealand: a national study. *The New Zealand Medical Journal.* Vol 118 No 1218 ISSN 1175 8716

Nevis. E.C., Di Bella A.J. and Gould J.M. (1994). Understanding organisations as learning systems. *Sloan Management R*eview, 36 (2), pp.73-84

NHS Management Executive (1993). Risk management in the NHS. London: Department of Health.

NHS Choices (2009) http://www.nhs.uk/aboutnhschoices/aboutnhschoices/pages/aboutnhschoiceshome.aspx

NPSA (2004) Seven steps to patient safety: A guide for NHS staff. NHS. DoH

NPSA (2005) (a) Building a memory: preventing harm, reducing risks and improving patient safety. The first report of the National Reporting and Learning System and the Patient Safety Observatory. NPSA. NHS

NPSA (2005) (b) *Medical error: How to avoid it all going wrong and what to do if it does*. www.saferhealthcare.org.uk

NPSA (2005) (c) *Communicating patient safety incidents with patients and their carers.* NPSA. NHS.

Nutley, S.M., Davies, H.T. O (2001) Developing Organisational Learning in the NHS. *Medical Education,* Volume 35, Number 1, January 2001, pp. 35-42(8) Blackwell Publishing

O'Brien, R. (2001). Um exame da abordagem metodológica da pesquisa ação [An Overview of the Methodological Approach of Action Research]. In Roberto Richardson (Ed.), *Teoria e Prática da Pesquisa Ação [Theory and Practice of Action Research]*. João Pessoa, Brazil: Universidade Federal da Paraíba. (English version) Available: http://www.web.ca/~robrien/papers/arfinal.html (Accessed 20/1/2002)

Ohno. T. (1988) *Toyota Production System: Beyond Large-Scale Production.* Productivity Press. New York

Oshry. B. (2007) *Seeing Systems. Unlocking the Mysteries of Organisational Life.* Berrett Koehler Publications. San Francisco.

Övretviet. J. (2000) System negligence is at the root of medical error. *International Journal of Healthcare Quality and Assurance* 13/3 103-105

Palmer, I., Dunford, R. (1996) "Reframing and organizational action: the unexplored link", *Journal of Organizational Change Management*, Vol. 9 Iss: 6, pp.12 - 25

Park. P. (2001) Knowledge and Participatory Action Research in Reason. P., Bradbury. H. (2001) *Handbook of Action Research. Participative Inquiry and Practice.* Eds Peter Reason and Hilary Bradbury. Sage Publications. London.

Pasmore. W (2001) Action Research in the Workplace: The Socio-technical Perspective. In *Handbook of Action Research. Participative Inquiry and Practice*. Eds Peter Reason and Hilary Bradbury. Sage Publications. London.

Pearn, M., Mulroony. C., and Payne. T. (1998) *Ending the blame culture*. Gower Publishing Company

Pedlar. M. (1997) *Action Learning in Practice*. Published by Gower Publishing, Ltd.

Piaget, J. (1951) *Psychology of Intelligence*. London: Routledge, Kegan Paul

Pintrich. P. (2002) The Role of Metacognitive Knowledge in Learning, Teaching, and Assessing. *Theory into Practice*, Volume 41, Number 4, Autumn. College of Education, The Ohio State University

Pope. A. (1711). *An Essay on Criticism. eserver.org/poetry/**essay-on-criticism**.htm*

Postel. S. L. (2003) Securing water for people, crops and eco-systems: New mindset and new priorities. *Natural Resources Forum*. 27 (2003) 89-98

Power. E. J. (1991) *Legacy of Learning, A History of Western Educa*tion. SUNY Press. New York.

Pronovost. P., B Sexton. B., (2005) Assessing safety culture: guidelines and recommendations. *Quality and Safety in Health Care* 2005;14:231–233. doi: 10.1136/qshc.2005.015180

Prosser. M., Trigwell. K. (1999) *Understanding Learning and Teaching. The Experience in Higher Education.* The Society for Research in Higher Education and Open University Press. Buckingham

Ramsden, P. (1992) *Learning to Teach in Higher Education*, New York. Routledge

Rappoport. R.N. (1970) Three dilemmas of action research. *Human Rela*tions. 23. 599 – 513

Raths. J. (2002) Improving Instruction. *Theory into Practice*, Volume 41, Number 4, Autumn. College of Education, The Ohio State University

Raven. A. (2003). Team or community of practice – aligning tasks, structures, and technologies. In C.B. Gibson & S.G. Cohen (Eds.), *Virtual teams that wor*k. San Francisco: Wiley and Sons.

Reason, J., Mycielska, K. (1982). *Absent-minded? The psychology of mental lapses and everyday errors.* Englewood Cliffs, NJ: Prentice Hall.

Reason, J. (1990). *Human error*. Cambridge University Press.

Reason. J. (2000) Human error: models and management, *British Medical Journal* 320:768-70.

Reason, J., Mycielska. K. (1982) *Absent-minded? The psychology of Mental Lapses and Everyday Errors,* Prentice-Hall.

Reason, J. T. Carthey, J. de Leval M. R. (2001) Diagnosing "vulnerable system syndrome": an essential prerequisite to effective risk management *Quality in Health Care*;10 (Suppl II):ii21–ii25

Reason. P. (1994) Three Approaches to Participative Inquiry. In *Handbook of Qualitative Research ed* Denzin N.K and Lincoln Y.S Sage Publications. London.

Reason. P. (1999) General Medical and Complementary Practitioners Working Together: The Epistemological Demands of Collaboration. *Journal of Applied Behavioural Science* 1999; 35; 71

Reason. P., Bradbury. H. (2001) *Handbook of Action Research. Participative Inquiry and Practice.* Eds Peter Reason and Hilary Bradbury. Sage Publications. London.

Redfern Report (2001) The Royal Liverpool Children's Inquiry 2001 House of Commons. HMSO. London.

Reigeluth. C. M. (1999) *Instructional design theories and models. Vol. II, a new paradigm of instructional theory.* Mahwah, N.J. ; London : Lawrence Erlbaum,

Renshaw. M., Vaughan. C., Ottewill. M., Ireland. A., Carmody. J. (2007) Clinical incident reporting: wrong time, wrong place. *International Journal of Health Care Quality Assurance,* Vol. 21 No. 4, 2008 pp. 380-384

Revens, R.W. (1982) *The origins and growth of action learning*, Bromley, UK: Chartwell- Bratt

Rogers. J. (2005) Aspiring to Leadership – Identifying Teacher-Leaders. Med Paper. Department of Family and Community Medicine, Baylor College of Medicine. Houston, TX,

Rolf. J.M. (1992) 'Training Transfer the Basis for Validating Effectiveness'. *Simulation/Games for Learning*. 22 (4): 249 259

Rosenstiel, LV., Koch S. (2001) Changes in Socio Economic Values as a Trigger of Organisational Learning, In Dierkes, M., Antal, A.B., Child, J. and Nonaka, I. (eds.), *Handbook of Organisational Learning & Knowledge*. Oxford: Oxford University Press.

Roth. G. L, Senge. P. M. (1995) *From Theory to Practice: Research Territory, Processes and Structure at the MIT Centre for Organisational Learning*. Centre for Organisational Learning. MIT Sloane School of Management. Cambridge M.A

Ruchlin. H.S., Dubbs. N.L., Callahan. M.A. (2004) The role of leadership in instilling a culture of safety: lessons from the literature. *Journal of Healthcare Management* Jan-Feb;49(1):47-58

Rumelhart, D. & Norman, D. (1978). Accretion, tuning and restructuring: Three modes of learning. In. J.W. Cotton & R. Klatzky (eds.), *Semantic Factors in Cognition*. Hillsdale, NJ: Erlbaum

Rushmer. R, Davies. HTO. (2004) Unlearning in health care. *QSHC*. P ii 10 – ii 15

Sadler, P. (2001). 'Leadership and Organizational Learning', in: Dierkes, M., Berthoin Antal, A., Child, J. and Dierkes, M. (Eds.), *Handbook of Organizational Learning and Knowledge,* Oxford: Oxford University Press, 415-427.

Säljö. R. (1979) *Learning in the Learner's Perspective I – Some Common Sense Perceptions.* University of Göteborg.

Salmon. G. (2000) *E-Moderating the Key to Teaching and Learning Online*, Kogan Page, London

Sayer. A. (1992) *Method in Social Science: A Realist Appr*oach. Routledge.

Scally. G., Donaldson. L.J. (1998) Clinical governance and the drive for quality improvement in the new NHS in England, *BMJ* 317 (61, 65).

Scharmer. C. O. (2008) *Discovering the blind spot of leadership*. Leader to Leader. Executive Forum. www.theoryU.com (accessed 16/03/2008)

Schein. E. H. (1985). Organizational culture and leadership: A dynamic view. Jossey-Bass. San Francisco, CA:

Schein. E.H. (1991) "The Role of the Founder in the Creation of Organizational Culture." In *Reframing Organizational Cul*ture. Eds. P.J. Frost, L.F. M.R. Louis, C.C. Lundberg, and J. Martin. Newbury Park, CA : Sage, 1991, 15-25.

Schein. E.H. (1992) *Organisational Culture and Leadership* (second edition) San Francisco: Jossey Bass

Schein. E (1993) On dialogue, culture and organisational learning. *Organizational Dynamics,* vol. 22, Summer. Elsevier Science.

Schmidt, H.G., Norman. G.R., Boshuisen, H. (1990) 'A cognitive perspective on medical expertise: Theory and implications'. Academic Medicine, 65, 10, pp 611 - 621 In Eraut. M. *Developing Professional Knowledge and Comp*etence. Falmer Press. London.

Schön, D. A. (1983) *The Reflective Practitioner. How professionals think in act*ion, London: Temple Smith.

Schön. D. A. (1991) *The Reflective Turn. Case studies in and on educational practice.* Teachers College, Columbia University, New York and London.

Schwandt. T.A (1994) Constructivist, Interpretivist Approaches to Human Inquiry. In *Handbook of Qualitative Research* ed Denzin N.K and Lincoln Y.S Sage Publications. London.

Scott. J. (2008) Modes of Power and the Reconceptualisation of Elites. In *Remembering Elites*. Edited by Savage. M. Williams. K. Blackwell Publishing Oxford

SEED (2006) Promoting Creativity in Education: Overview of Key National Policy Developments Across the UK. An Information Paper.
www.hmie.gov.uk/documents/publication

Select Committee on Public Accounts, Fifty-First Report. House of Commons (2006). Executive Summary para 6, paras 3.10-3.11.

Senders. J.W. (2004) FMEA and RCA: the mantras of modern risk management *Quality and Safety in Health Care*:249–250.

Senge. P. M. (1989) Organizational Learning: A New Challenge of System Dynamics. The 7th International Conference of the System Dynamics Society 1989 Stuttgart, Germany

Senge. P. M. (1990) *The Fifth Discipline the Art and Practice of the Learning Organisation*, (2006)Random House Business Books, London.

Senge. P., Kleiner. A., Roberts. C., Ross. R., Smith. B., (1995) *The Fifth Discipline Fieldbook. Strategies and Tools for Building a Learning Organisation*. Nicholas Brealy Publishing. London

Senge, P. and O. Scharmer (2001). Community Action Research: Learning as a Community of Practitioners, Consultants, and Researchers. In *Handbook of Action Research: Participative Inquiry and Practice.* ed P. Reason and H. Bradbury. London; Thousand Oaks, Calif., Sage. pp. 238-249.

Senge, P., Sterman. J. D. (1992). Systems thinking and organizational learning: Acting locally and thinking globally in the organization of the future. European *Journal of Operational Research* 59: 137-150.

Sesel, J (2003), 'The History of Professional Risk Management', *Http:://www.siliconrose.com.au/ Articles/HistoryOfRiskManagement.htm*

Sexton. J. B, Helmreich. R., Pronovost, P.J., Thomas, E. (2004) The Safety Climate Survey. The Center of Excellence for Patient Safety Research and Practice. Institute for Healthcare Improvement. Austin, Texas, USA

Shah, D & Domke, D. (1996). To thine own self be true: Values Framing, and other Voter Decision-Making Strategies. *Communication Research*, 23(5). pp 509-546

Sheaff. R., Pilgrim. D. (2006) Can learning organizations survive in the newer NHS? available from: *http://www.implementationscience.com/content/1/1/27*

Schön. D. (1983) (1991) *The Reflective Practitioner: How Professionals Think in Action.* New York. Basic Books.

Schön. D. (1987) *Educating the Reflective Practitioner: Towards a New Design for Teaching and Learning in the Professions*. San Francisco, Jossey Bass.

Siedlacczek. K. (2005) Perceptions about Teaching Online versus in a Classroom Environment, *College Quarterly* Summer 2005.

Silverman, D. (1993) *Interpreting Qualitative Data. Methods for Analysing Talk, Text and Interaction*, Sage Publications, London

Singer S. J. Edmondson . A. C (2006) When Learning and Performance are at Odds: Confronting the Tension. HBS Working Paper No. 07-032

Singer, S.J. Edmondson A.C. (2008). When learning and performance are at odds: Confronting the tension. In *Performance and Learning Matter*, P. Kumar and P. Ramsey (Eds.). Singapore: World Scientific Publishing, pp. 33-60

Sirkin. H, Keenan P, Jackson A, (2005)"The Hard Side of Change Management" *Harvard Business Review.*

Skinner, B.F. (1953) *Science and human behaviour*. Oxford, England: Macmillan.

Skinner B.F. (1972) *Beyond Freedom and Dig*nity New York: Bantam Vintage

Small. S.D, Barach P. (2002) Patient safety and health policy: a history and review. Hematology Oncology Clinics of North America Dec;16(6):1463-82.

Smith, M. K. (2001) (a) 'Kurt Lewin, groups, experiential learning and action research', *http://www.infed.org/thinkers/et-lewin.htm*

Smith, M. K. (2001) (b) 'Peter Senge and the learning organization', *www.infed.org/thinkers/senge.htm*.

Snell. R. S. (2001) Moral Foundations of the Learning Organization. *Human Relations*; 55; 319

Snow, D. A., Benford. R. D. (1992) "Master Frames and Cycles of Protest." Pp. 133-155 In A. D. Morris and C. M. Mueller, *Frontiers in Social Movement Theory*, New Haven: Yale University Press

Somekh. B. (1995) The Contribution of Action Research to Development in Social Endeavours: a position paper on action research methodology. *British Educational Research Journal,* Volume 21, Issue 3 , pages 339 - 355

Somekh, B., Thaler. M. (1997) Contradictions of Management Theory, Organisational Cultures and the Self. *Educational Action Research*, Volume 5, No. 1, 1997

Speck, M. (1996). Best practice in professional development for sustained educational change. *ERS Spectrum*, 33-41.

Squire. L.R. (1997) Memory and Brain Systems. Paper presented at the Symposium for Recent Advances in Research on Human Memory. National Academy of Sciences. Washington D.C.

St Augustine (4 AD) (1998) *Confessions*. Translated by Henry Chadwick. Published by Oxford University Press.

Stacey. R.D (2000) *Strategic Management and Organisational Dynamics: The Challenge of Complexity*. Third edition. Pearson Education. Edinburgh.

Stahr. H. (2001) Developing a culture of quality within the United Kingdom health-care system. *International Journal of Healthcare Quality Assurance*14/4 174-180

Steier, F. (1991) '*Reflexivity and Methodology: An Ecological Constructionism', Research and Reflexivity, Inquiries in Social Cons*truction, Sage Publications, London.

Steiner, L. (1998) 'Organizational dilemmas as barriers to learning', *The Learning Organization*,Vol. 5, No. 4, pp.193–201.

Sternberg. R. J. (2005) A model of educational leadership: Wisdom, intelligence, and creativity, synthesized. *International Journal of Leadership in Education*, Volume 8, Issue 4 , pages 347 - 364

Strang., D. Jung. D-Il. (2002) 'Organisational change as an orchestrated social movement; determinants and implications of recruitment to a 'quality initiative'', Paper presented at conference on 'Social Movement and organisation theory', Ann Arbor, Michigan

Susman, G.I. and Evered, R.D. (1978) 'An Assessment of the Scientific Merits of Action Research.' *Administrative Science Qua*rterly 23: 582-603

Susman. G.I., Trist. E. (1993) (a)Action Research in an American Underground Coal Mine: Laying the Groundwork for an Experiment: May to November 1973 - *THE SOCIO-TECHNICAL SYSTEMS PERSPECTIVE*. Volume II. Edited by Eric Trist and Hugh Murray. Tavistock Publications.

Swanwick. T. (2008) See one, do one, then what? Faculty development in postgraduate medical education. *Postgrad. Med.* J;84;339-343 doi:10.1136/pgmj. 2008. 068288

The Independent Friday, 1 May 2009

Tannenbaum. R. Weshchler. I.R. Massark. F. (1961) *Leadership and Organisations – A Behavioural Science Approach*. MGraw Hill. London.

Taylor, C. (1985). *Philosophy and the human sciences: Philosophical papers* (Vol. 2). Cambridge: Cambridge University Press.

Thomas, B. S. (1986) Instructional computing in American nursing programs. *International Journal of Nursing Studies*, 23, 221-9.

Thomas. D.R. (2004) A general inductive approach for qualitative data analysis. Auckland: School of Population Health, University of Auckland; Available online. *URL:http://www.health.auckland.ac.nz/hrmas/resources/ qualdatanalysis.html* Accessed July 2005.

Thorndike, E.L. (1911), *Animal Intelligence*, Macmillan.

Tingle. J. (1995) Clinical protocols and the law, *Nursing Times*, 91, 29, 27-28

Tingle. J. (1997) 'Expanded role of the nurse: accountability confusion', *British Journal of Nursing,* Vol 6, No 17, pp 12-14.

Titchen. A Binnie. A (1993) Research Partnerships: collaborative action research in nursing. *Journal of Advanced Nursing*. 18. 858- 865

Tosey. P. (2008) Once upon a time, tales of organisational learning. *The Learning Organization*. Vol. 15 No. 6,

Tripp. D (1998) Critical Incidents in Action Enquiry In *Being Reflexive in Critical Education and Social Research*. Ed by Geoffrey Shacklock and John Smyth. Falmer Press. London.

Trist, E., Murray, H. (1990) *The Social Engagement of Social Science: A Tavistock Anthology*. Volume 1: The Socio-Psychological Perspective. Philadelphia: University of Pennsylvania Press.

Trist, E., Murray, H. (1993) (a) *The Social Engagement of Social Science: A Tavistock Anthology. Volume 2: The Socio-Technical Perspective*. Philadelphia: University of Pennsylvania Press.

Trist. E (1993) (b) "*Guilty of Enthusiasm . Management Laureates*. ed Arthur G. Bedeian, Volume 3, Copyright © Jai Press.

Tsoukas, H. (1994). Introduction: From social engineering to reflective action in organizational behaviour. In H. Tsoukas (Ed.), *New thinking in organizational behaviour* (pp. 1–22). Oxford: Butterworth Heinemann.

Tumin, M. M. (1967) 'Some Principles of Stratification: a Critical Analysis In Bendix and Lipset (1967) eds *Class Status and Power* 2nd Ed RKP London.

Vanderstraeten. R. (2002) Dewy's Transactional Constructionism. *The Journal of the Philosophy of Education of the Society of Great Britain*. Vol 36 no 2.

Vaughn. D. (1996) *Challenger Launch Decision: Risky Technology, Culture and Deviance at NASA*. The University of Chicago Press. Chicago.

Veatch, R.M., Cross-Cultural Perspectives in Medical Ethics: Readings. Boston: Jones and Bartlett Publishers, 1989.

Vincent. C. (1997) Risk, safety and the dark side of quality. *British Medical Journal.*313: 1775

Vincent. C. (2001) (a) *Clinical Risk Management*. 2nd ed London: BMJ Books, 2001. ISBN 0727913921.

Vincent. C. (2001) (b) Principles of risk and safety. *Acta Neurochirurgica Suppl.* 2001;78:3-11

Vincent C. (2003) Understanding and responding to adverse events. *N Engl J Med* ;348:1051–6.

Vincent. C. A. (2004) Analysis of clinical incidents: a window on the system not a search for root causes *Qual Saf Health Care*;13 :242-243 BMJ

Vincent C, Taylor-Adams S, Chapman E.J, Hewett. D, Prior. S, Strange. P, Tizzard. A. (2000) How to investigate and analyse clinical incidents: clinical risk unit and association of litigation and risk management protocol. *BMJ;*320:777–81.

Vincent C, Neale G, Woloshynowych M. (2001) Adverse events in British hospitals: preliminary retrospective record review. *BMJ*, 322, 517 – 519

Vincent, V., Davy, C., Esmail, A., Neale, G.,Elstein,. M.,Walshe. K. (2004) Learning from litigation: an analysis of claims for clinical negligence. Published by the Manchester Centre for Healthcare Management, University of Manchester

Visser. M 2007) Deutero-Learning in Organisations: A Review and a Reformulation *Academy of Management Review* Vol. 32, No. 2, 659–667

Von Krogh, G., Ichijo. K., Nonaka. I. 2000) *Enabling Knowledge Creation. How to unlock the Mystery of Tacit Knowledge and Release the Power of Innov*ation. Oxford University Press.

Vygotsky, L. (1978). *Mind in society.* Cambridge, MA: Harvard University Press.

Wallace, L.M., Freeman, T., Latham, L.,Walshe, K., Spurgeon. P. (2001) Organisational strategies for changing clinical practice: how trusts are meeting the challenges of clinical governance. *Quality in Health Care*;10:76–82

Walshe. K (2003) Foundation hospitals: a new direction for NHS reform? *J R Soc Med.* March; 96(3): 106–110.

Walter. G. A., Marks. S. E. (1981) *Experiential Learning and Change: Theory Design and Practice.* John Wiley and Sons.

Watkins.C. Mortimore. P (1999) Pedagogy: What do we know? In *Understanding Pedagogy and its Impact on Learning.* Ed Peter Mortimore. Paul Chapman Publishing. London.

Watson. J. B., Rayner. R. (1920) Conditioned Emotional Reactions. *Journal of Experimental Psychology,* 3(1), 1-14.

Weber, M. (1968) *Economy and Society.* Translated and edited by Guenther Roth and Claus Wittich. New York:(1921). Bedminster Press.

Weick, K. E. (1995) *Sensemaking in Organisations*, Sage Publications

Weick. K. E., Sutcliffe. K. M. (2007) *Managing the Unexpected: Resilient Performance in an Age of Uncertainty.* John Wiley and Sons. San Francisco

Welsh Assembly Government. (1997) NHS in Wales: Putting Patients First

Whelan, G. (1988) 'Improving medical students clinical problem solving', in P. Ramsden (ed*) Improving Learning: New Persp*ectives, London. Kogan Page.

Wilde. O. (1893) *Lady Windermere's Fan.* Act III

Wilkinson, R. Rushmer, R. and Davies, H. (2004) Clinical Governance and the learning organization, *Journal of Nursing Management* 12: 105-113.

Wilkinson. A, Fay C. (2011), New times for employee voice? *Human Resource Management*, 50 (1): 65–74

Williams, S. M (1992), Putting case based instruction into context: Examples from legal and medical education. *The Journal of Learning Sciences*. 2(4):367-472

Wilson. R.M, Runciman. W.B, Gibberd. R.W, Harrison. B.T, Newby. L, Hamilton. J.D. (1995). The Quality in Australian Health Care Study. *The Medical Journal of Australia* Nov 6;163(9):458-71

Wise. J. (2009) Part of hospitals' funding will depend on patient satisfaction ratings from 2010-11. *BMJ*; 339:b5451.

World Health Organisation (WHO) (2009). The 'Patient Safety Curriculum Guide for Medical Schools' http://www.who.int/patient safety/activities/technical/medical_curriculum/en/index.htm

Zahlis. D.F., Hanson. L.L. (2005) Beware the Disconnect: Overcoming the conflict between measures and results. Professional Safety Nov. *https://test.activeagenda.com/tiki-index.php?page=articles*

Zeichner. K. (2001) Educational Action Research In *Handbook of Action Research.* Edited by Perter Reason and Hilary Bradbury. Sage. London.

APPENDICES

Appendix 5: Second Cycle –

Appendix 6: Third Cycle:

APPENDIX 1: THE RISK-E PROGRAM

APPENDIX 1B RISK-E MODULE ONE

University of Wales, Bangor

FORM FOR SUBMISSION OF NEW MODULE

1.	**Module title**:		EDUCATION: RISK MANAGEMENT AND GOVERNANCE IN PUBLIC SECTOR ORGANISATIONS: 1 **Short title**: Education Risk Management 1
2.	**Module code**: XME 4062	3.	**Maximum number of students**: No max.
4.	**Total credits**: 30	5.	**Semesters**: Across the year.
6.	**Notional learning hours**:		Contact time: 50 hours. Private study: 250 hours. Total: 300 hours.
	Format of teaching:		Lectures (35 hours), workshops and practicals (5 hours), and on-line tutorials (10 hours). There will be guided support for student private study time.
7.	**Organiser**: Dee Jones.	8.	**Department**: School of Education.
9.	**Level**: HE Level 4.	10.	**Language(s) of tuition**: English.
11.	**Prerequisites**: 1. First degree or equivalent professional qualification. 2. At least two years' employment at management level in a public sector organisation, with some responsibility for risk management or an intention to move into this area of practice. 3. A suitable workplace to practice risk management.	12.	**Co-requisites**: None.
13.	**Programme(s) for which module is compulsory:** **Programme(s) for which module is optional or recommended**: Optional module in the Postgraduate Certificate, Postgraduate Diploma, and MA in Education Studies.		

14.	**Module aims**: The purpose of the module is to enable students to understand the fundamentals of learning theories (action learning and problem-based learning) and risk management theories and practices in order to develop existing skills and knowledge at masters level. The aim of the module is to facilitate student learning so that students are able to use new or transformed knowledge (i.e., understanding previous knowledge in a different way) and the skills gained from the module (i.e., through shared learning in an e-learning environment) in such a way as to bring about desired changes in the workplace (i.e., better management of risk and working proactively within governance frameworks).
15.	**Learning outcomes**: Successful students will 1. be able to understand and differentiate the theoretical underpinnings of risk management and apply risk management theories to real life situations; 2. have critically evaluated their own and others' learning in the context of the learning organisation; 3. understand the developing theories relating to e-learning and have provided practical evidence of working in and contributing to an e-learning environment; 4. have developed and critically evaluated a work-based policy/guideline/procedure relating to risk management and governance.
16.	**Summary of module content**: The module will introduce the student to various theories and concepts of risk management and governance through the process of understanding how we learn, and will consider the following elements: 1. Risk management and organisational learning, including systems thinking linking health and social care economics to complaints and claims handling. 2. Error theories and controls, including learning through experience and root cause analysis. 3. Systematic risk prioritisation, including identification of vulnerable workers and users of the service. 4. Aspects of human resource management that will include competence and supervision of the workforce and communication strategies.
17.	**Key skills**: 1. Interpersonal skills: students will be encouraged to engage with other learners and course staff in a variety of contexts. 2. E-learning skills: students will access core materials via First Class and will be expected to engage in and contribute to various learning opportunities on-line. 3. Presentation skills: students will be required to present their work at intervals to their peers and to course tutors. 4. Communication skills: students will access and participate in specific course content on effective communication and team working. 5. Study skills: students will be given guidance on studying and writing up their final assessment for the module. 6. Subject-specific skills: students will be taught about risk management, governance, and learning.
18.	**Assessment methods**: 1. An action-learning cycle, including the development of a workplace policy or procedure and a 3000-word assignment on it (90%) LO1,2,4. 2. Presentation of academic work to colleagues/course tutors face-to-face and on-line (10%). LO1-3.

19.	**Assessment criteria**: **Threshold**: See learning outcomes. **Good**: The ability to critique and apply subject matter to workplace and to evaluate one's own and others' performance within a specified action plan. **Excellent**: The ability (i) to apply theoretical knowledge in such a way as to demonstrate new dimensions to or application of theories, (ii) to generate questions about one's own and others' professional practice, (iii) to provide solutions and resolution to risk-laden problems within an action-plan format.				
20.	**Resource implications of proposal**: **Bibliography** Bransford, J.D. (ed.). (2000) How People Learn: Brain, Mind, Experience and School. National Research Council National Academy Press. Elliot, J. (1991) Action Research for Educational Change. Open UP. Institute of Medicine. (2000) To Err Is Human: Building a Safer Health System. Kember, D., et al. (2001) Reflective Teaching and Learning in the Health Professions. Blackwell. McSherry, R., and Pearce, P. (2002) Clinical Governance: A Guide to Implementation for Healthcare Professionals. Blackwell. Reason, J. (1990) Human Error. Cambridge UP, New York. Senge. P. (1994) The Fifth Discipline: Fieldbook Strategies and Tools for Building a Learning Organisation. Nicolas Brearley Publishing, London. Stebbing. L (1986) Quality Assurance: the Route to Efficiency and Competitiveness. Ellis Horwood Ltd. Chichester Watkins, R., et al. (2004) E-Learning Companion: A Student's Guide to Online Success. Houghton Mifflin. **Journal** Health Care Risk Report. Eclipse. **Websites** bmj.bmjjournals.com www.cgsupport.nhs.uk/ www.chai.org.uk www.dh.gov.uk www.hse.gov.uk www.info.doh.gov.uk www.lawsoc.org.uk www.npsa.nhs.uk www.venables.co.uk www.wales.gov.uk				
	Specific resource implications for students: Access to a PC with internet connection (preferably fast connection), running Windows 95 or later, with MS Office and IE; minimum of 256 MB RAM and 128 MB graphics; sound card; LAN port 10/100.				
	Approval of IS representative: Bethan Roberts.				
21.	**Does this module replace existing provision?** No.				
22.	**Start date:**	**Semester:**		**Year:**	July 2005.
23.	**Is it intended that the module be available every year?** Yes.				

Main school/department: School of Education **Authorised**: Janet Pritchard
Date: November 2004 (For Board of Studies)

APPENDIX 1B: RISK-E MODULE TWO

University of Wales, Bangor

FORM FOR SUBMISSION OF NEW MODULE

1.	**Module title**:		EDUCATION: RISK MANAGEMENT AND GOVERNANCE IN PUBLIC SECTOR ORGANISATIONS: 2 **Short title**: Education Risk Management 2
2.	**Module code**: XME 4062	3.	**Maximum number of students**: No max.
4.	**Total credits**: 30	5.	**Semesters**: Across the year.
6.	**Notional learning hours**:		Contact time: 50 hours. Private study: 250 hours. Total: 300 hours.
	Format of teaching:		Face to face lectures (35 hours), workshops and practicals (5 hours), and on-line tutorials (10 hours). There will be guided support for student private study time.
7.	**Organiser**: Dee Jones.	8.	**Department**: School of Education.
9.	**Level**: HE Level 4.	10.	**Language(s) of tuition**: English.
11.	**Prerequisites**: 4. First degree or equivalent professional qualification. 5. At least two years' employment at management level in a public sector organisation, with some responsibility for risk management or an intention to move into this area of practice. 6. A suitable workplace to practice risk management.	12.	**Co-requisites**: None.
13.	**Programme(s) for which module is compulsory:** **Programme(s) for which module is optional or recommended**: Optional module in the Postgraduate Certificate, Postgraduate Diploma, and MA in Education Studies.		
14.	**Module aims**: The purpose of this second module is to develop student's understanding of learning theories (to include experiential learning, reflective and reflexive learning) and risk management theories (for example FMEA) at masters level. The aim of the module is to facilitate student learning so that students are able to use new or transformed knowledge (i.e. understanding previous knowledge in a different way) and the skills gained from the module (i.e., through shared learning in an e-learning environment) in such a way as to bring about desired changes in the workplace (i.e., better management of risk and working proactively within governance frameworks).		

15.	**Learning outcomes**: Successful students will 5. be able to understand and differentiate the theoretical underpinnings of risk management and apply risk management theories within legal frameworks 6. have analysed their own and others communication strategies in order to improve performance 7. have understood how the management of the physical risk environment impacts on public sector organisations 8. understand how risk management operates at a micro level (within own organisations) and a macro level (international perspective) 9. have developed and critically evaluated a work-based policy/guideline/procedure relating to risk management and governance 10. understand the developing theories relating to e-learning and have provided practical evidence of working in and contributing to an e-learning environment
16.	**Summary of module content**: This second module will further develop student knowledge of various theories and concepts of risk management and governance through the process of understanding how we learn, and will consider the following elements: 1. Reflecting on adverse incidents and near misses in order to develop proactive risk management. 2. The application of Law (European law, Statute law and Common law) to risk management practice. 3. Theories and practical skills for effective communication across multidisciplinary groups and professional boundaries (for example interviewing techniques, writing statements, breaking bad news, negotiation, mediation and conciliation) 4. Understanding the Physical Risk Environment 5. The global risk management arena, international developments, influencing policy, accessing and disseminating good practice abroad.
17.	**Key skills**: 7. Interpersonal skills: students will be encouraged to engage with other learners and course staff in a variety of contexts. 8. E-learning skills: students will access core materials via First Class and will be expected to engage in and contribute to various learning opportunities on-line. 9. Presentation skills: students will be required to present their work at intervals to their peers and to course tutors. 10. Communication skills: students will access and participate in specific course content on effective communication and team working. 11. Study skills: students will be given guidance on studying and writing up their final assessment for the module. 12. Subject-specific skills: students will be taught about risk management, governance, learning and law.
18.	**Assessment methods**: 3. An action-learning cycle, including the development of a workplace policy or procedure and a 3000-word assignment on it (90%) LO1,2,3,4,5 4. Presentation of academic work to colleagues/course tutors face-to-face and on-line (10%). LO1-6.

19.	**Assessment criteria**: **Threshold**: See learning outcomes. **Good**: The ability to critique and apply subject matter to workplace and to evaluate one's own and others' performance within a specified action plan. **Excellent**: The ability (i) to apply theoretical knowledge in such a way as to demonstrate new dimensions to or application of theories, (ii) to generate questions about one's own and others' professional practice, (iii) to provide solutions and resolution to risk-laden problems within an action-plan format.
20.	**Resource implications of proposal**: **Bibliography** Coyle. B (2004) Risk Awareness and Corporate Governance. Financial World Publishing Health and Safety Law What you should know. HSE Books 2nd ed. 1999 Kember, D., et al. (2001) Reflective Teaching and Learning in the Health Professions. Blackwell. Kennedy, I., Grubb. A. [1994] Medical Law: Text with Materials. London: Butterworths. Montgomery. J. (2005) Health Care Law Third Edition Oxford University Press McGill. I., Beaty. L. (2000)Action Learning: A Practitioner's Guide Routledge Falmer McHale. J., Fox. M., Murphy. J. (1997) Health Care Law: Text and Materials. Sweet and Maxwell. Pedler. M. (1991) Action learning in practice - 2nd ed. Aldershot : Gower. Reason, J. (1997). Managing the Risks of Organizational Accidents. Aldershot: Ashgate Stranks. J. (2001) Health and Safety Law (Health & Safety in Practice) Prentice Hall Stranks. J. (1996) Law and Practice of Risk Assessment: A Practical Programme Financial Times Prentice Hall The Report of the Public Inquiry into children's heart surgery at the Bristol Royal Infirmary 1984-1995 (The Kennedy Report) Learning from Bristol DOH July 2001 Wadham.J., Mountfield. H., Edmundson. A (2003) Oxford University Press Blackstone's Guide to the Human Rights Act 1998 (3rd Ed) Watkins, R.(2004) E-Learning Companion: A Student's Guide to Online Success. Houghton Mifflin. **Journal** Health Care Risk Report. Eclipse. **Websites** bmj.bmjjournals.com www.cgsupport.nhs.uk/ www.chai.org.uk www.dh.gov.uk www.hse.gov.uk www.info.doh.gov.uk www.lawsoc.org.uk www.npsa.nhs.uk www.venables.co.uk www.wales.gov.uk

	Specific resource implications for students: Access to a PC with internet connection (preferably fast connection), running Windows 95 or later, with MS Office and IE; minimum of 256 MB RAM and 128 MB graphics; sound card; LAN port 10/100.				
	Approval of IS representative: Bethan Roberts.				
21.	**Does this module replace existing provision?** No.				
22.	**Start date:**	**Semester:**		**Year:**	**July 2005.**
23.	**Is it intended that the module be available every year?** Yes.				

Main school/department: School of Education Authorised: Janet Pritchard
Date: November 2004 (For Board of Studies)

APPENDIX 2: E-MAILS

APPENDIX 2A: ERAUT PERMISSION

Date: Mon, 20 Jul 2009 07:52:13 +0100 [20/07/09 07:52:13 BST]
From: Michael Eraut <michael@eraut.eclipse.co.uk>
To: hsp835@bangor.ac.uk
Reply-To: Michael Eraut <michael@eraut.eclipse.co.uk>
Subject: permission
Part(s): 2 SKOPE 19_7.pdf [application/pdf] 1,496 KB
Download All Attachments (in .zip file)
Headers: Show All Headers

1 unnamed [text/plain] 0.20 KB

Yes, that would be fine; although I have adjusted it a bit more recently. The most accessible recent account is in a monograph commissioned by SKOPE, which is freely downloadable and attached as a pdf.

Search Results: Re: permission (2 of 2)

Mark as: Move | Copy Back to Search Results

Delete | Reply | Forward | Redirect | Message Source | Save as | Print

Date: Mon, 20 Jul 2009 18:20:23 +0100 [20/07/09 18:20:23 BST]
From: Michael Eraut <michael@eraut.eclipse.co.uk>
To: hsp835@bangor.ac.uk
Reply-To: Michael Eraut <michael@eraut.eclipse.co.uk>
Subject: Re: permission
Headers: Show All Headers

Eraut M & Hirsh W (2007) The Significance of Workplace Learning for Individuals, Groups and Organisations, SKOPE monograph, University of Oxford Department of Economics, 96pp

----- Original Message ----- From: <hsp835@bangor.ac.uk>
To: "Michael Eraut" <michael@eraut.eclipse.co.uk>
Sent: Monday, July 20, 2009 2:14 PM
Subject: permission
[Hide Quoted Text]

Hello Professor Eraut,
I am very glad my email found you I was worried it may not. Many thanks for permission to use your material, what is the correct date for the more recent ERSC monograph and the reference?
cofion
Dee Gray

APPENDIX 2B: FIRSTCLASS

Date: Wed, 1 Dec 2004 11:25:04 +0000 [01/12/04 11:25:04 UTC]
From: [redacted]
To: [redacted]
Subject: Forums page
Headers: Show All Headers

Hello team,

Here is the forums page that I will add to our main web site.

http://www.risk-e.com:8080/Forum/default.asp

It is not online at the moment but you have the chance to play around with it.

We have first to create topics and subjects that will help us with our research. You can do that if you register first (top right hand site menu). Choose user name and password. After the registration you will have access to create topics and you will have access to reply to them as well.
At the moment I have created one forum "risk-e" which contain one area for discuss "Testing forums" and under this area is one topic "Welcome to risk-e forum" with 2 replies. Of course I will rename them, I created them just for test.

Please register to the forum and play with it. Please send me feedback.

Let me know if you have problem.

Regards
[redacted]
-
[redacted]

Date: Fri, 18 Mar 2005 09:58:38 -0000 [18/03/05 09:58:38 UTC]
From: [redacted]
To: "Dee Jones (E-mail)" <edsc0b@bangor.ac.uk>, [redacted]mail)"
Subject: words to not use
Headers: Show All Headers

Hello both,
please please forgive me for not going onto firstclass but connection is slow and I can't be bothered to wait!
[redacted]st of words that we shouldn't be using when setting objectives and reflecting on teaching? (you are going to tell me it's on firstclass now aren't you...)
XXXXXXXXX

Delete | Reply | Reply to All | Forward | Redirect | View Thread | Message Source | Save as | Print

Date: Wed, 04 May 2005 19:08:28 +0100 [04/05/05 18:08:28 UTC]
From: [redacted]
To:
Cc: Dee <edsc0b@bangor.ac.uk>, [redacted]

Subject: Re: Firewall
Headers: Show All Headers

[redacted]

Thankyou [redacted] You have convinced me that we are 'safe' in doing what is being requested. [redacted] do I still need to give the green light to IS or can you do it?

[redacted] wrote:

Hi [redacted]

Re: our request for changes to the UWB firewall to support the risk-e programme
We have adopted OpenText's FirstClass groupware software as the e-learning platform for our Knowledge Transfer Partnership with Welsh Risk Pool (the 'risk-e' programme), and have been using it for over a year. Our students (Risk Managers and other staff from various NHS trusts around Wales) log in to our FirstClass server periodically to view course material and participate in group discussions.
We have recently purchased a more powerful server to support the anticipated growth in student numbers and have asked for the same firewall provisions for the new server as we currently have for the old one (so this is not a request for anything new, just a repeat of a previous configuration request).
The FirstClass software uses TCP/IP port 510 (this is reserved exclusively for use by FirstClass) for the connection between the client software (on the user's machine) and the server. The communication on this channel is compressed (for efficiency) and highly encrypted (for security).
FirstClass has in the region of 6 million users worldwide, yet there have been no known instances of FirstClass' port 510 communications ever being hacked. Large users include The Open University (over 300,000 users) and Skolekom (just under 300,000 users - all the schools in Denmark). At the University of Wales, Bangor, the UIB (University Innovations Bangor) office uses FirstClass for all of their departmental communications, with shared calendars, contact databases, bulletin boards and so on.
Opening TCP/IP port 510 can be considered very low risk.
We have also asked for port 80 and port 25 access to the new server (just as our current server has). Port 80 allows our risk-e website to be visible to the outside world. The website (http://www.risk-e.com) is

hosted by the FirstClass server. There are no active scripts, CGIs or similar security risks; there is only plain HTML.
Port 25 access is required so that FirstClass can send and receive email (for example, we have an 'info@risk-e.com' email account). We have configured FirstClass not to allow 'relaying' (the method by which some spammers hijack email servers to obscure the origin of their spam emails).
FirstClass Client deliberately does not support active content or embedded images in email messages, so (unlike Microsoft Outlook) viruses cannot be spread by a user opening an email message with active content. Also, spam email that contains embedded images (used to enable the spammer to know that a user has viewed their message) have no effect in FirstClass (unlike in Microsoft Outlook).
Opening TCP/IP ports 80 and 25 can be considered low risk.
We also have the capability on our server to configure a local firewall that will ensure that all traffic on port 25, 80 and 510 is delivered only to FirstClass (so that 'trojan' programs that might attempt to listen on these ports will not be able to).
I hope this answers any remaining questions. Please do not hesitate to contact me if you require further clarification.

Very best wishes

[redacted]

[redacted] University of Wales, Bangor
Tel: +44 (0) 7970 880807
Email:
[redacted]

Dee <edsc0b@bangor.ac.uk> on 29 April 2005 at 14:35 +0000 wrote:
Hi [redacted]
we have a request regarding the firewall (and getting past it for the risk-e project) in the UWB system. Can you make a statement
as to the risk involved regarding access so that we can demonstrate that we are acting appropriately and not damaging the rest
[redacted]ystem. Can you send this to [redacted] Head of School of Education. If you need to discuss this please give me a call.
[redacted]

APPENDIX 2C: MODULES CONFIRMATION

inbox.R: Risk Management modules (59 of 293)

Mark as: Move | Copy Back to inbox.R

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Date: Wed, 13 Apr 2005 16:23:37 +0100 [13/04/05 15:23:37 UTC]
From: [redacted]
To: "Jones, Dee" <edsc0b@bangor.ac.uk>
Subject: Risk Management modules
Headers: Show All Headers

Dee,

I've now had confirmation from Registry that the University's Module Approval Panel has approved the two Risk Management modules (XME 4062 and 4063). I've made them active on Banner for the current session and students should be able to register to them for this summer.

[redacted]
--

APPENDIX 2D: PEER OBSERVATIONS FOR QIQA

Date: Tue, 27 Jul 2004 15:47:01 +0100 [27/07/04 14:47:01 UTC]
From: [redacted]
To: "'D.Jones'" <edsc0b@bangor.ac.uk>
Subject: RE: peer obs and research
Headers: Show All Headers

Hi Dee,
[redacted] already peer-ob'd me as she was attending my workshop last week, so did it at the same time. I'd like to be involved in the research side however and be interviewed, so maybe we could do this one time when I'm over for a supervisors meeting? 2nd Aug is a bit packed for me, but maybe the 9th sept?
[redacted]

-----Original Message-----
From: D.Jones [mailto:edsc0b@bangor.ac.uk]
Sent: 27 July 2004 14:57
To: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Subject: peer obs and research

Hi everyone,
[redacted] will have sent you a request for dates so we can come and peer [redacted]e your teaching, we would also like to double up on this and for those of you who are up for it would also like to take the opportunity to interview you for the research side of risk-e (this will take approx an hour). Can you let me have your teaching times asap as our diaries are pretty full and logistically we have to make sense of all this.

many thanks

Dee

nbox-edsc0b: Re: peer obs (85 of 245)
Mark as: Move | Copy Back to inbox-edsc0b
Delete | Reply | Reply to All | Forward | Redirect | View Thread | Message Source | Save as | Print
Date: Sun, 19 Mar 2006 21:25:37 +0000 [19/03/06 21:25:37 UTC]
From: X
To: "Jones,Dee" <edsc0b@bangor.ac.uk>
Subject: Re: peer obs
Part(s):

2	783072289-Dee peer obs Why things go wrong.doc	[application/msword]	32 KB
3	1358489988-dee peer obs risk-e conference.doc	[application/msword]	60 KB

Download All Attachments (in .zip file)

Headers: Show All Headers

1 unnamed [text/plain] 5.29 KB

Dee,
We have no specific boss. I will contact the regional
director but I am sure that he will say yes.
As regards my teaching For the session in [redacted] I thought I would base it around
"Why things go wrong." This would lead t[redacted]ion of some risk theory and would
hopefully lead on to your RCA and FMEA stuff, without too much overlap.
I have attached draft peer obs for this session and for the lecture at risk-e conference. They may well be refined before the day. grateful for any advice as always especially for the lecture peer obs as not quite sure what to put.

Cheers,
[redacted]

PS. I assume that I will have access to ppt at the conference. What version is it?
What is the venue seating arrangement? What is the audience size? Does this count as preparation?

--- "Jones,Dee" <edsc0b@bangor.ac.uk> wrote:
[Hide Quoted Text]
[redacted] This is part of a planned wider study with other professionals who may experience adverse incidents. For this study if you can get the approval of consultant for me to run a learning 'evaluation' then i can do a pre and post intervention on the teaching done on the day. I will follow the appropriate ethical codes of conduct and the participants/students will be anonymised as will their place of work (just as in your paper). The evaluation will be around teaching as
> regards positive outcomes on practice. All they will have to do is to fill in a short questionnaire before and one after (I mean short too about 6 questions in total). Although the students are 'my' students in as much as I will be teaching I know Trusts (and consultants) like to be asked. Basically they need to say yes to the 'evaluation'
>
> Cheers
> Dee
>
[redacted] wrote:
> > Dee,
> > Haven't spoken to trust board...they are far too busy. Only to ICU consultants. What approval do you need? A couple of days is 2 more than I have at the
> moment. What does it entail?
> >

APPENDIX 2E: RMN MEETINGS

nbox.R: RE: teaching assessment forms (37 of 299)

Mark as: Move | Copy Back to inbox.R

Delete | Reply | Reply to All | Forward | Redirect | View Thread | Message Source | Save as | Print

Date: Mon, 24 Jan 2005 11:57:36 -0000 [24/01/05 11:57:36 UTC]

From:

To: 'Dee' <edsc0b@bangor.ac.uk>

Subject: RE: teaching assessment forms and RMN meeting

Headers: Show All Headers

Hi Dee,
Thanks for this. [redacted] will forward map she has, but it's the showground that you're heading for apparently. spoke with X on thurs about the job, travelling etc. so things seem better, sorry for the doom and gloom last week! see you weds.
[redacted]

-----Original Message-----
From: Dee [mailto:edsc0b@bangor.ac.uk]
Sent: 24 January 2005 11:56
To: X
Subject: teaching assessment forms
Importance: High

Hi [redacted]
hope your IT problems are little more resolved. Attatched is the assessment form from last week. I will see you down at [redacted] on Wednesday, I start with the group at 1.30 so should be finished by 3pm. I don't have the dirctions as to where I am supposed to come on Wednesday could you send some over to me, I am ok to get to Builth Wells I just dont know where once I am there!
Hope you are well and have managed to rest a bit.

Dee

APPENDIX 3: KTP FINAL APPLICATION

Version 02.02	TCS Programme Grant Application and Proposal Form (To be submitted by the university partner on behalf of a university-company partnership)

Please complete this form in printed or typed text (Times New Roman size 10) without continuation sheets (except for sections indicated) and on the advice of a TCS Consultant submit 1 Copy (single sided original) to the Programme Establishment Team, TCD, Brunel House, Volunteer Way, Faringdon, Oxon SN7 7YR. Tel. (01367 245213). The information you give will be treated in confidence except the information in Sections A, B and C which may be published as may the amount of any grant offered.

Section A - University Partner

1. University Partner

of the institution applying to be the university partner TCS Programme described in the attached proposal

University of Wales, Bangor

Name, position and contact details of the university administrator to whom formal correspondence related to this application should be addressed

Title Mr Name [redacted]

Position Deputy Director of Financial Services

Address Finance Office, Cae Derwen, University of Wales, Bangor, College Road, Bangor, Gwynedd

Post Code LL57 2DG

Tel. No. Fax No. e-mail address

[redacted]

3. *Name, position and contact details of an official university signatory who will be*

sible for any grant related matters in connection with the attached proposal and who should sign section D and section N.

Title Mr Name [redacted]

Position Assistant Accountant

Address Finance Office, Cae Derwen, University of Wales, Bangor, College Road, Bangor, Gwynedd

Post Code LL57 2DG

Tel. No. Fax No. e-mail address

[redacted]

4. Lead Academic

osition and contact details of the academic who will lead the academic input

to the TCS Programme, if approved

Title Ms Name Dee Jones

Position & Academic Department

Research Manager, Centre for Learning Development, School of Education.

Address. Centre for Learning Development, School of Education, University of Wales Bangor, Bangor. Gwynedd.

Post Code LL57 2DG

Tel. No.	Fax No.	e-mail address
01248 388087	01248 362643	sds064@bangor.ac.uk

Section B - Company Partner

1. Company Partner

f organisation proposing to be the Company Partner TCS Programme described in the attached proposal

Welsh Risk Pool (a membership organisation owned by all the health bodies in Wales such as Health Trusts, Health Authorities etc.) Administratively based in the Conwy and Denbighshire NHS Trust.

ne and contact details of the person in the company who will lead the company partner's input to the TCS Programme, if approved

Title Mr Name [redacted]

Address Finance Building, HM Stanley Hospital, St Asaph, Denbighshire

Post Code LL17 0RS

Tel. No. Fax No. e-mail address

[redacted]

02.02 TCS Programme Grant Application and Proposal Form

Section B - Company Partner

3. Type of business

Describe the main business, products and services of the Company and insert its

The Welsh Risk Pool is a health risk pooling organisation owned by NHS health bodies in Wales providing a reimbursement function for compensation claims & a regulatory function for risk management.

Standard Industrial Classification in the bottom right hand box

S.I.C. 6523

Section C - Programme

1. TCS Programme Description

Describe, in no more than 3 lines, the work to be carried out in the TCS Programme

Develop multi-disciplinary accredited training & learning in health risk management that focuses on reducing adverse incidents, thus increasing vital resources for the delivery of care rather than compensation claims.

2. Associate Profile:

Insert in relevant boxes the number of Associates to be employed during each year of the Programme

Year 1	Year 2	Year 3	Year 4
2	2	2	

3. Previous Research Support

Describe any TCS, Research Council, LINK or other funding provided to either the university or company partner which is particularly relevant to the proposed Programme

- Adapt- ESF Visions for Change – 2 year European Research Project on Human Resource Development
- ERDF funded Interreg Project – Working to Improve Cross Border Communication. Exploratory and Networking phase of Project to develop innovative educational provision for the health care industry between Wales and Ireland
- A two associate TCS programme developing clinical governance in the independent health sector (TCS Nos. 2932)
- An one Associate TCS Programme developing and delivering e-Coaching (TCS Nos. 3302)

APPENDIX 4: FIRST CYCLE –

APPENDIX 4A: FIRST CLASS QUESTIONS AND CLUSTERED DATA

2004 First cohort : FirstClass telephone interview data (one question and a few probes).

Q. Why aren't you logging on?

' I make time in a very busy day to learn and the computer just keeps crashing. I find it very frustrating and don't have the skills to sort it out''

Do you know why it is crashing?

'no it just times out and I have to start all over again. Some of the class can't even get this far.

Q.Why?

Dunno, something about confidentiality or something'

Student/participant 10

'although I have asked our IT department to ensure my computer lets me in the classroom they have other priorities and say it needs clearance higher up'

Student/participant 6

' I prefer books and face to face stuff I am not a natural with computers'

Q. Would you like extra support?

'yes, that might help me'

Student/participant 12

'I found it difficult to get to the stuff with the little time I had, I know I can try this at home later but I just need it to made obvious so I don't waste time getting lost'

Student/participant 3

'I find the whole thing a bit confusing, what am I supposed to be doing?'

Q. Did you get all the instructions via email?

Yes

Q. Did you understand them?

Well what I really need is for someone to sit next to me and show me, but I don't suppose that is really distance learning is it?

Q.Would you like someone to go through it with you on the telephone while so you can join in? You are missing some valuable material that is only available on-line.

Yes.

Student/participant 1

Well I have tried but keep getting firewall restrictions, when can you sort this out?

Q.We are working on it, do you have an IT manager we can speak to directly?

I will find out who it is and send it to you.

Student/participant 2

I haven't tried yet but no point in wasting time until you have the firewall problems sorted. Do you want me to find someone here to help?

Student/participant 4

Well I did try and managed to stay on for a bit and then I got 'spat out'. I was quite disappointed really as it took a while getting to find the time.

Student/participant 7

No not yet, am going to see if I can do it from home I have no time in work and I hear from X that you are having problems with the system. Do you want me to find our IT person like X and send them your way?

Student/participant 8

I have been on and had a look, not sure where I find things though and the links aren't very clear as to when the 'classes start' or what I am supposed to do when I am there. I like

things referenced clearly or obviously. I could try and find someone here to help but that might take some time, something I am short of.

Q. What would you like to see?

Perhaps less choice and more big buttons to click on! It can be confusing having so much choice and not much time.

Student/participant 11

APPENDIX 4B: 2004 PRE/POST 1 QUESTIONNAIRE

Course questionnaire risk-e programme 2005
We would like you to answer the following questions relating to risk management in the context of learning and knowledge. Your answers will help us to understand how individuals manage risk and will be used to develop the risk-e programme. In accordance with research ethics your answers are anonymised, all data will be kept confidential to ensure confidentiality; however, if you wish to state your name and contact details so we may be able to interview you at a later stage please do so at the end of the form. Thank you for taking the time to complete this questionnaire your efforts are very much appreciated.

Understanding learning

1. What do you understand about how you learn as an individual?

2. What do understand about how we learn as a collective?

3. What do you understand about how we learn as an organisation?

Understanding experience

4. Do you know what it means by learning from experience?

5. Can you recall an incident where you have learned from experience?

6. How do you know you learned from experience?

7. How do you know others have learned from experience?

8. What have you done to share learning from experience?

Tacit knowledge

9. Have you ever been in a situation when you have known what to do but haven't understood at the time why?

10. What do you understand about why you were able to perform at the time?

Sharing knowledge

11. When you know how to do something how do you share this with others?

12. Does telling others reinforce what you know?

13. What do you think the words the 'learning organisation' means?

14. Do you think that by sharing knowledge we can perform better in the workplace?

Name

Contact details

APPENDIX 4C: 2004 STUDENT/PARTICIPANT CONSTRUCTS

RECLASSIFIED

2004 student/participant constructs (re-classified) two interrogations

Themes = individual as self/not group work/styles include independent self managed= praise/boredom/quick to grasp/= verbal = electronic = visualising = written
= in seeing others as having individual needs/styles
= target org driven
= experiential= practical

Themes = others - others
= challenge knowledge – 1
= experiential – reflective –exp – exp- exp
= self – 4

Theme A Understanding learning

1. What do you understand about how you learn as an individual?

Do respondents give 'deep' responses or 'surface' responses? Interested because this may indicate not only the approach they prefer but one that they take with others. Deep meaning that by biggs et al, multi method experiential varying assessment and delivery.
CHALLENGING ASSUMPTIONS IS DEUTERO LEARNING = ANOTHER LEVEL.

Those that interpreted the question to mean self = 13 with 1 of these including others after the course. 1 participant interpreted the question before and after the course to include others.

Deep and surface responses to the question=

7 DEEP BEFORE AND 7 AFTER SAME PARTICIPANTS
1 SURFACE BEFORE 1 DEEP AFTER
2 DEEP BEFORE 2 SURFACE AFTER

1 BEFORE AND 1 AFTER = SURFACE

RESPONSES LINKED THEIR ANSWER TO 'ORG'
1 RESPONSE BEFORE SURFACE AND 2 AFTER WERE DEEP
2 BEFORE WERE SURFACE 1 AFTER WERE SURFACE

2. What do understand about how we learn as a collective?
Majority is deep (most LC). Responses are linked to those that might represent Learning Community and/or Learning Organisation.
7 before and after = LC deep
2 before and after = LC+ LO deep
2 prior responses did not link to either LC or LO but linked to LC after
1 prior response linked to LC and to LO post
1 prior response linked to LO prior and LC post

1 response linked to LC prior and neither post

Other changes
1 PRIOR DEEP LC TO 1 SURFACE
2 SURFACE TO 2 DEEP LC

3. what do you understand of how we learn as an Org
Single and double loop taken from Argyris and Shon to mean changing own behaviour/knowledge = single challenging/changing the assumptions/system that allowed the same = double loop.

4 pre and 3 post = single loop OL
10 prior 11 post = double loop type LO
Learning as an Organisation = Overall double loop responses

Theme B Understanding experience

4. Do you know what it means by learning from experience?
Responses concentrate on doing something, experience = physical action. Some regard it with change in future action.
Deep responses have reflection/reflexive elements, evaluation and change. Cognitive constructs.

14 responses 6 action prior of those 4 had action responses post course
14 responses 8 reflexive/reflective pre + 10 post reflective/reflexive post course

5. Can you recall an incident where you have learned from experience?
Examples of experiences are mixture of action (A) and cognitive (C) examples
14 responses 8 pre (A) + 5 (C) + 1 missing
14 responses 7 post (A) + 6 (C) + 1 missing

6. How do you know you learned from experience?
Pre course Cognitive responses = 7 prior + Behavioural responses = 7
Post course Cognitive responses = 3 post + 10 Behavioural responses + 1 missing

Is change due to risk management session on preventing incidents through 'control' mechanism? Controlling behaviour by use of guards/levers/IV safety devices etc the individual's behaviour is controlled without understanding why, could this mean that on a cognitive level any learning transfer is lost? So individual does not consider whether another device requires modification? Medicines report.

7. How do you know others have learned from experience?
14 prior responses combined A + C = 3, C = 4, B = 7
14 post responses A+ C = 4, C= 2 = B = 6 + 2 missing

Most looked for behavioural change 7-4 before most behavioural change after 6 -2, slight increase in combined after 3 – 4.

8. What have you done to share learning from experience?

14 responses 2 LC, 4 LO pre and post course. 2 moved from LC prior to LO post course. 2 were LO but had data missing post course. 1 moved from LC to neither LC or LO post course. 2 moved from OL to LC post course. 1 moved from OL to combined OL/LC post course. Overall there were more LO responses.

Theme C Tacit knowledge

9. Have you ever been in a situation when you have known what to do but haven't understood at the time why?
Understanding tacit knowledge/mental schemas reflexive ability
14 responses 3 +3 pre and post yes, 1 yes prior changing to 1 no post course, 3 no remaining no post course but demonstrating 'action schemas', 4 were missing pre and post, 2 were yes but missing post and 1 no and missing post course.
Overall 6 yes 9 no.

10. What do you understand about why you were able to perform at the time?
Understanding tacit understanding
14 responses pre and post yes = 5, pre and post no = 3, pre no changing to yes = 2, pre yes with data missing = 2, pre post data missing = 1 pre yes post no =1.
Only slight changes post from no to yes.

Theme D Sharing Knowledge

11. When you know how to do something how do you share this with others?
14 responses Prior OL 6 + 5 OL/LC, 4 no
Post = 3 OL + 9 OL/ LC, 2 no

12. Does telling others reinforce what you know?
reflective *or* routineised practice?
14 pre responses reflective yes = 11 pre + 3 routineised
Post responses reflective yes = 10 + 4 routineised

13. What do you think the words the 'learning organisation' means?
Understand LO so can apply policies
Yes 10 pre 4 no
No 12 pre 2 post

14. Do you think that by sharing knowledge we can perform better in the workplace?
Yes 12 pre + 12 post
Yes and 2 pre and 2 post

Second Interrogation
Theme A Understanding learning

1. What do you understand about how you learn as an individual?

7 DEEP BEFORE AND 7 AFTER SAME PARTICIPANTS
1 SURFACE BEFORE 1 DEEP AFTER

2 DEEP BEFORE 2 SURFACE AFTER

1 BEFORE AND 1 AFTER = SURFACE

Overall deep

Theme B Understanding experience

4. Do you know what it means by learning from experience?

Responses concentrate on doing something, experience = physical action. Some regard it with change in future action.

Deep responses have reflection/reflexive elements, evaluation and change. Cognitive constructs.

14 responses 6 action prior of those 4 had action responses post course
14 responses 8 reflexive/reflective pre + 10 post reflective/reflexive post course

Overall deep

12. Does telling others reinforce what you know?
reflective *or* routineised practice?

14 pre responses reflective yes = 11 pre + 3 routineised
Post responses reflective yes = 10 + 4 routineised

Overall deep responses pre and post

5. Can you recall an incident where you have learned from experience?

Examples of experiences are mixture of action (A) and cognitive (C) examples
14 responses 8 pre (A) + 5 (C) + 1 missing
14 responses 7 post (A) + 6 (C) + 1 missing

Overall action (behaviour) orientated

6. How do you know you learned from experience?

Pre course Cognitive responses = 7 + Behavioural responses = 7
Post course Cognitive responses = 3 + Behavioural responses 10 + 1 missing

Is change due to risk management session on preventing incidents through 'control' mechanism? Controlling behaviour by use of guards/levers/IV safety devices etc the individual's behaviour is controlled without understanding why, could this mean that on a cognitive level any learning transfer is lost? So individual does not consider whether another device requires modification? Medicines report.

Overall even pre but changes to behavioural post.

7. How do you know others have learned from experience?

14 prior responses combined A + C = 3, C = 4, B = 7
14 post responses A+ C = 4, C= 2 = B = 6 + 2 missing

Most looked for behavioural change 7-4 before most behavioural change after 6 -2, slight increase in combined after 3 – 4.

Overall = behavioural

Theme C Tacit knowledge

9. Have you ever been in a situation when you have known what to do but haven't understood at the time why?
Understanding tacit knowledge/mental schemas reflexive ability
14 responses 3 +3 pre and post yes, 1 yes prior changing to 1 no post course, 3 no remaining no post course but demonstrating 'action schemas', 4 were missing pre and post, 2 were yes but missing post and 1 no and missing post course.

Overall pre 6 yes post 9 no.

10. What do you understand about why you were able to perform at the time?
Understanding tacit understanding
14 responses pre and post yes = 5, pre and post no = 3, pre no changing to yes = 2, pre yes with data missing = 2, pre post data missing = 1 pre yes post no =1.

Only slight changes post from no to yes.

3. what do you understand of how we learn as an Org
Single and double loop taken from Argyris and Shon to mean changing own behaviour/knowledge = single, challenging/changing the assumptions/system that allowed the same = double loop.

4 pre and 3 post = single loop OL
10 prior 11 post = double loop type LO

Overall double loop

Individual learning RESPONSES LINKED THEIR ANSWER TO 'ORG'
1 RESPONSE BEFORE SURFACE AND 2 AFTER WERE DEEP
2 BEFORE WERE SURFACE 1 AFTER WERE SURFACE

Overall surface

2. What do understand about how we learn as a collective?
Majority is deep. Responses are linked to those that might represent Learning Community and/or Learning Organisation.
7 before and after = LC deep
2 before and after = LC+ LO deep
2 prior responses did not link to either LC or LO but linked to LC after
1 prior response linked to LC and to LO post
1 prior response linked to LO prior and LC post
1 response linked to LC prior and neither post

Other changes
1 PRIOR DEEP LC TO 1 SURFACE
2 SURFACE TO 2 DEEP LC

Overall collective learning links to LC. LC is part of the broader picture of LO, I think it is integral to having deep processes within an organisation without it you can be left with LO structures. LC may prove to be a good vehicle with which to challenge assumptions due to 'learning nature' context so less hostile than 'meetings' etc.

8. What have you done to share learning from experience?

14 responses 2 LC, 4 LO pre and post course. 2 moved from LC prior to LO post course. 2 were LO but had data missing post course. 1 moved from LC to neither LC or LO post course. 2 moved from OL to LC post course. 1 moved from OL to combined OL/LC post course.

Overall there were more LO responses.

Theme D Sharing Knowledge

11. When you know how to do something how do you share this with others?
14 responses Prior OL 6 + 5 OL/LC, 4 no
Post = 3 OL + 9 OL/ LC, 2 no

Overall OL/LC improved significantly post course

13. What do you think the words the 'learning organisation' means?
Understand LO so can apply policies
Yes 10 pre 4 no
No 12 pre 2 post

Overall do not understand LO

14. Do you think that by sharing knowledge we can perform better in the workplace?
Yes 12 pre + 12 post
Yes and 2 pre and 2 post

Yes sharing knowledge improves performance is an OL attribute.

Summary
OL/ LC
When asked for definition of LO overall (2) did not understand. Participants understand aspects of OL, and are willing to share knowledge. Post course participants reconsidered a LC approach to this rather than limited OL (via meetings or using policies).
Overall collective learning links to LC. LC is part of the broader picture of LO, I think it is integral to having deep processes within an organisation without it you can be left with LO structures. LC may prove to be a good vehicle with which to challenge assumptions due to 'learning nature' context so less hostile than 'meetings' etc.
Overall surface responses when linking individual to org
Overall there were more LO responses when describing learning sharing learning from experience. Sharing knowledge elicited more OL/LO responses post course.
Deep and surface approaches

Do respondents give 'deep' responses or 'surface' responses? Interested because this may indicate not only the approach they prefer but one that they take with others. Deep meaning that by biggs et al, multi method experiential varying assessment and delivery

1. As an individual

Overall deep, responses indicate a similar approach might be taken with others.

4. Do you know what it means by learning from experience?

Deep responses that demonstrate reflective/reflexive ability. May mean can alter own mental constructs. May mean can help others to do same.

15. Does telling others reinforce what you know?

reflective *or* routineised practice?

Overall deep so understand the positive effect of telling as having a reflective and possible 'change' effect.

5. Can you recall an incident where you have learned from experience?

Action orientated response might mean that assessment is not cognitive for self.

6. How do you know you learned from experience?

Increase in behavioural post course may indicate behavioural element of controls in risk management.

9. How do you know others have learned from experience?

Overall behavioural – may mean assessment of learning needs to change to include more cognitive approaches.

9. Have you ever been in a situation when you have known what to do but haven't understood at the time why?

Understanding tacit knowledge/mental schemas reflexive ability

Overall no, compare this with learning from experience answers.

10. What do you understand about why you were able to perform at the time?

Understanding tacit understanding

Overall gave good definition of how/why they have performed

APPENDIX 4D: RESEARCH QUESTIONS LEARNING

Projected outcomes: Dee Jones

Before and after -course questions

- Understanding of how we learn
- Ability to use this understanding to reduce adverse events
- Ability to use this understanding to support others to understand how to learn
- Ability to use this understanding to support others to understand how to learn how to reduce adverse events

Understanding learning

1. What do you understand about how you learn as an individual?
2. What do understand about how we learn as a collective?
3. What do you understand about how we learn as an organisation?
4. Do you think understanding how you learn will help you to do your job?
5. Do you think understanding how we learn as a collective would help others do their jobs?
6. Do you think understanding how to learn as an organisation will help everyone in their jobs?
7. Do you think understanding how we learn help people manage risk?

Understanding experience

8. Do you know what it means by learning from experience?
9. Can you recall an incident where you have learned from experience?
10. How do you know you learned from experience?
11. How do you know others have learned from experience?
12. What have you done to share learning from experience?
13. Do you think learning from experience helps people manage risk?
14. Do you think learning from experience has an effect on care delivery?

Tacit knowledge

15. Have you ever been in a situation when you have known what to do but haven't understood at the time why?
16. What do you understand about why you were able to perform at the time?
17. What are the circumstances in which you perform like this?
18. Are you able to perform in some areas of your work without having to stop and think?
19. What sort of things are these?

20. How do you know you can do these things?

Sharing knowledge

21. When you know how to do something do you tell others?
22. Does telling others reinforce what you know?
23. What do others do with what you have told them?
24. How do you think we can best learn as a collective?
25. What would you do to ensure that others were able to share knowledge?
26. What sort of knowledge do you like?
27. What do you think the words the 'learning organisation' means?
28. Do you think that by sharing knowledge we can perform better in the workplace?
29. How does sharing knowledge affect care delivery?
30. How does sharing knowledge affect the management of risk?

APPENDIX 4E: WORD FREQUENCY FOR INDICATORS

Developing the indicators

I am trying to find out how we construct a learning organisation, to do that I need to find out how others construct a learning organisation. I am looking to the language used by 'experts' and participants to develop indicators that represent this. The indicators could be used in the future as a tool for learning organisation development. Key to the indicators appear to be deutero learning characteristics. In order to develop the indicators thus far I have gone through the following phases:

Abduction = hypothesis generation, initial diagnosis in response to a phenomenon of interest or a problem of concern.
Born out of literature reviews, emergent themes from primary and secondary data analysis. Participants do not have deutero learning characteristics that are fundamental to being able to deliver organisational change in line with user, organisational and government requirements.

Deduction = clarify, derive, explicate the relevant parts of hypotheses and evaluate them.
Developed from organisational learning literature (Argyris and Shon, Bateson, Visser and Senge). Key sections of text have been extrapolated and key words identified that are embedded in each, alongside my own understanding and insights. Words have been recorded for frequency and mapped against four learning domains (Merriam and Caffarella 1991). This is repeated for the literature review and methodology chapters.

Induction
Induction = rule prediction, used to test the sum of the predictions against the sum of the data.
Eventually all the words in the domains will be brought together as 'descriptors or indicators' with which to measure data against.
Discourse analysis and deconstruction (Derida).
N.B Action Research allows for the inclusion of multiple methods within the cycle (how many have I used so far)?

Words identified	
Theory 27	Plan 16
Theories 21	Planning 5
Policy 5	Action 55
Policies 9	Meta 16
Organisation 203	Analysis 12
Blame 20	Proves 34
Culture 36	Enquiry 10
Cultures 4	Community 4
Adverse 8	Communication 24
Team 58	Shared 29
Dissonance 1	Map 22
Assumptions 33	Maps 9
Lead 36	Cognitive 12
Leadership 20	Mental 31
Leading 1	Styles 4
Following 2	Experience 25
Challenge 8	Practice 21
Discuss 19	Routinised 2
Norms 10	Routine 13
Safe 37	Ritual 2
Safety 33	Model 13
Adaptive 61	Problem 26
Reflect 43	Problems 17
Reflection 18	System 102
Reflective 8	Systems 4
Negative 4	Error 37
Positive 8	Correction 5
Private 2	Conflict 5
Learning 210	Evaluate 7
Learn 42	Espoused 12
Public 11	Open 13
Knowledge 29	Closed 2
Truth 11	

ORIENTATIONS

B = behavioural C = cognitive H = humanistic S = social and situational

Organisation 203 (BCHS = TOUCHES EACH ORIENTATION)

Learning 210 = *Acquisition of knowledge or skill, gained through education, relatively permanent change or acquisition of knowledge, understanding or behaviour* (BCHS) Learn 42 (BCHS)

Communication 24 (BCHS) Lead 36 (BCHS) Leadership 20 (BCHS) Leading 1(BCHS) Following 2 (BCHS) Safe 37 (BCHS) Safety 33 (BCHS) Plan 16 (BCHS) Planning 5 (BCHS) Experience 25 (BCHS) Practice 21 (BCHS)

Routinised 2 (BCHS) Routine 13 (BCHS) Ritual 2 (BCHS) Error 37 (BCHS)

Correction 5 (BCHS) Blame 20 (BCHS) Adverse 8 (BCHS) Challenge 8 (BCHS)

Discuss 19 (BCHS) Norms 10 (BCHS) Negative 4 (BCHS) Positive 8 (BCHS)

Private 2 (BCHS) Public 11 (BCHS) Styles 4 (BCHS) Conflict 5 (BCHS)

Open 13 (BCHS) Closed 2 (BCHS) Community 4 (BCHS)

System 102 (S) Systems 4 (S) = TOUCHES 'S' ORIENTATION

Culture 36 (BHS) Cultures 4 (BHS) Culture 36 (BHS)

Team 58 (B H) = TOUCHES 'B' AND 'H' ORIENTATIONS

Shared 29 (B H) Culture 36 (BHS) Cultures 4 (BHS) Culture 36 (BHS)

Adaptive 61 © Reflect 43 © Reflection 18 © Reflective 8 © = TOUCHES 'C' ORIENTATION

Map 22 © Maps 9 © Cognitive 12 © Mental 31 © Assumptions 33 ©

Knowledge 29 © Truth 11 © Meta 16 © Analysis 12 © Proves 34 © Enquiry 10 ©

Evaluate 7 © Espoused 12 © Model 13 © Problem 26 © Problems 17 © Theory 27 ©

Theories 21 © Dissonance 1 ©

Policy 5 (C S) Policies 9(C S)

Action 55 (C B) = TOUCHES 'C' 'B' ORIENTATIONS

Policy 5 (C S) Policies 9(C S)

Culture 36 (BHS) Cultures 4 (BHS) Culture 36 (BHS)

APPENDIX 4F REFLECTIVE THOUGHTS ON 'WORDS' AND 'ORIENTATIONS'.

A preliminary thought is that the data seems to say that most participants follow a behaviourist paradigm and look for evidence of changes in behaviour, they do not seek to look for much in the other domains. This might shed some light on responses of participants who hold a teaching qualification as they were gained some time ago (X years) and there has been no CPD in this area for them. Using a behaviourist paradigm that looks for learning as an observable change in behaviour is rooted in the 1960' and 1970's (Smith 1999). Some changes in behaviour are the result of learning due to conditioning (Skinner) although this alone is a self limiting explanation of learning as some humans (and animals) can use the conditioning element to learn in context (Bateson). Of more use is to find out whether people 'understand, or experience, or conceptualize the world around them' (Ramsden 1992: 4); to do this we need to consider learning in a variety of' domains' (see below) and contexts (individual and organisational).Learning has long been categorised into hierarchies (for example Säljö 1979) represented as taxonomies (for example Bloom,

Why is understanding what is 'behind' an apparent change in behaviour so important? A change in behaviour is superficial in terms of error detection/reduction (Argyris and Shon) with regards to adverse incidents (errors) a change in behaviour could be camouflaging further problems and/or toxic systems (Argyris and Shon, Senge). Also a change in behaviour may have been learned in the context of the system (by system I mean the human interaction that reinforces individuals to adapt behaviour which is embedded in systemic practices) (Bateson).For individuals to truly learn about error (detection and reduction) we have to get them to engage in learning that covers each of the orientations, but most importantly we have to create a learning system that supports this.

LEWIN, ARGYRIS, BATESON, DEMMING, REVENS. DO THEY ALL HAVE ELEMENTS OF EACH ASPECT BELOW? THEY ARE ALL CONCERNED WITH LEARNING,

'In other words, students who conceive of learning as understanding reality are also able to see it as increasing their knowledge' (Ramsden 1992: 27). Säljö (1979) asked a number of

adult students what they understood by learning. Their responses fell into five main categories:

1. Learning as a quantitative increase in knowledge. Learning is acquiring information or 'knowing a lot'.
2. Learning as memorising. Learning is storing information that can be reproduced.
3. Learning as acquiring facts, skills, and methods that can be retained and used as necessary.
4. Learning as making sense or abstracting meaning. Learning involves relating parts of the subject matter to each other and to the real world
5. Learning as interpreting and understanding reality in a different way. Learning involves comprehending the world by reinterpreting knowledge. (quoted in Ramsden 1992: 26)

HOW DO PARTICIPANTS RESPONSES FIT WITH THESE CATEGORIES AND WHERE ARE THEY ON THE ORIENTATIONS/TAXONOMY?

APPENDIX 4G: PRE/POST QUESTIONNAIRE NOTES

2005 changes to open ended questionnaire.

Q 4 new = AL poss indication of OL characteristic

Q 5 new from second study first cycle learning as change

Q 6 new = AR poss indication of OL characteristic

Q 12 new = (tacit knowledge) poss indication of schemata

Q 15 new = (routineised practice) poss indication of schemata

Q 16 new = (insight into change) poss indication of schemata

Q 21 new = (obstacles OL) poss indication of schemata

Q 22 new = (overcome obstacles to OL) poss indication of schemata

APPENDIX 5: SECOND CYCLE

APPENDIX 5A: PEER OBSERVATION FIELD NOTES

Peer Observation Field notes

August 5th 2004 10.30 a.m.
Student/Participant 5
the experiential methods appeared to be difficult for her, I asked her if she felt out of her 'comfort zone'. She replied as far as RM was concerned people 'turned up in order to be told how to do it' and were not encouraged to 'think about it'. She herself was finding the thinking part 'woolly' and she was resisting the temptation to just deliver what she always had.
Myself and my colleagues were encouraging in i.e. her confidence would come when she had more practice. She also said that she was finding it hard to answer questions from bosses who wanted to know 'the ins and outs' of what she was doing as she didn't yet know herself, this made her feel vulnerable.

Wednesday October 13th 2004 all day
Student/Participant 9
Although she espouses student interaction and participation she actually controls sessions, even a session on action learning she interrupted her students and would answer for them. After the sessions had finished I decided to tell her of my observations to see if I had observed correctly. At first she became defensive, I think because she thought I was criticising her teaching practice, but when she understood it was simply that I wanted to understand she relaxed. I asked her why she would not hand over more control to her students. She said that handing over control to her students would mean they would go off 'like a box of frogs' and her organisation was explicit about 'managing what people do'. People were not encouraged to think too far away from organisational dictate

November 18th 2004 9- 10.30 am
Student/Participant 10
Observing delivery of what the student/participant called 'rigid' curriculum. Because it is classified as 'mandatory and statutory' the student/participant felt it had to be covered in it's entirety and as there was such limited time to do this the opportunity to be creative in delivery of education (she felt) was restricted. This is at odds with the deep approach to learning we (UWB) promulgate. I asked her what she might do about this, practically she said she needed more time for delivery and to get that she would have to negotiate with her bosses. This would be difficult as time away from the workplace was at a premium so she would have to make a case for the merits of spending more time to deliver the curriculum this way. She was prepared to do this although was 'not looking forward to that conversation'

November 18th 2004 p.m.
Student/Participant 2.

At first they seemed to challenge the student/participant when he asked them to assess and report risks or concerns with 'yes but we can't do that here', their reasons for not being able to 'do it' were not clear although there seemed to be some tacit understanding of some organisational culture or norm that remained unspoken. One or two of them complained about being away from 'the job', but the student/participant won them over by telling them this (learning) was part of their job too. The crux came when the session students asked the student/participant what he was going to do to help them in the future if he really expected them to change things on the ground and I could tell he was stumbling. What could he do? I asked him that question too.

Tuesday 18th January 2005 1.30 – 4.30
Student/Participant 11
The student/participant' students were all employed in LHB's in the NHS, some of their behaviour during the session left a little to be desired (answering mobile phones and chatting to colleagues) but the nervousness of the student/participant didn't appear to be around this. I raised this with the student/participant and she said it was because I was there. Not because she was being assessed but because she felt that I would expect her to make a 'dull bunch' enthusiastic about learning about RM when everyone knew that they just wanted to be 'told'. This was so at odds with her previous espoused theory in which she had stated that what they were doing just wasn't working. Blimey. I tried to explain that she didn't have to turn them into pedagogues just use methods that encouraged deep approaches so they would learn better. This didn't go down too well either as she said that they just wanted to be 'ticked off the list' for attending. Funny really as this is just the sort of contextual change we talked about at Gregynog, perhaps when actually faced with it it becomes daunting. I hope she doesn't give up.

Tuesday 18th January 2005 1.30 – 4.30
Student/Participant 13
I asked her what she thought of her students and she agreed with her colleague that they 'were not the keenest' but there were one or two that she could encourage and move along and that she would concentrate on these. I asked her why and she said 'they might motivate the others'. She also said something about 'low hanging fruit' which I later understood her to mean start with the easy pickings first. I wonder why she hadn't been deterred from adopting a deep approach to RM , perhaps confidence has something to do with it? After the session this student/participant was actively talking to the individuals she thought might be 'the low hanging fruit' and arranging to provide more support and guidance so they could take it forward in their own organisations.

Tuesday October 3rd 2005 p.m.
Student/Participant 12
On the one hand passionate about changing RM education and desperate to bring down the amount of adverse incidents there are in the NHS. As a senior manager he is influential on how RM is delivered but here was a prime example of reverting back to 'no I will tell you what to do'. When the student/participant' students suggested innovations they were told they were 'wrong' and should adhere to organisational structures and form filling. This startled a few of them, as senior managers themselves they are used to a fair degree of autonomy. *I asked the student/participant if he thought what I had observed was the right approach*

Summary reflections on field notes study 3

August 5th 2004 1.30 a.m.
Student/Participant 5
What was significant about his? The fragility of the student/participant and the tensions to go back to what she had always done. What about the bosses? Were they a legitimate obstacle to her proceeding or were these her fears? Either way they were her 'constructs' or hah hah her obstructs. Reminder to self, on-line learning communities are there to support student/participants need to get them using them so they feel less vulnerable.

Wednesday October 13th 2004 all day
Student/Participant 9
What was significant about this? The student/participant is a construct of her own constructs! The RM system in the organisation appears to be based on controlling the workforce, using deep approaches to learning for some reason makes the student/participant think her students will become uncontrollable. Shades of Freire here, will the workforce start to ask questions! Is this an obstacle to bringing about change?..there must be incredible tensions going on within as I believe that the student/participant really does want things to improve.

November 18th 2004 9- 10.30 am
Student/Participant 10
What was significant about his? Rigid curriculum and rigid routineised practice as a way of delivery promotes a surface approach to learning, the student/participant is frustrated and what I have heard from other student/participants people only turn up to get themselves ticked off some sort of list of attendance. This supports the lit I reviewed and the market research on current RM education. Arhhhhh.

November 18th 2004 p.m.
Student/Participant 2
What was significant? This student/participant was using deep approaches to RM education, he is enthusiastic and motivated and wants things to improve. His students could become his agents of change but there appears to be some tacit (possible cultural?)obstacle to him achieving this.

Tuesday 18th January 2005 1.30 – 4.30
Student/Participant 11
What was significant about this? I think the student/participant is afraid and because of that she interpreted my presence as being there to catch her out in some way. What reassurance/support does she need? What kind of failure has she constructed for herself before she has had any?

Tuesday 18th January 2005 1.30 – 4.30
Student/Participant 13
What was significant about this? Although this was team teaching the two student/participants are very different. One seems to expect failure before she has started and the other looks for success how does this relate to approaches to teaching and learning? How can I use this in my own teaching, I would like to think I am more like the second student/participant but have I ever been like the first and if so what did I do to overcome it?.....

Tuesday October 3rd 2005 p.m.

Student/Participant 12
What was significant about this session? Can it be that the student/participants themselves are in such a routineised practice of delivery they have a lot of unlearning to do before they can encourage a deep approach to learning about RM. I have a feedback session planned for this student/participant next week, I will raise these observations outside of the evaluation and see what happens.

Fiday 14th October 2005
Didn't have feedback session with student/participant as he was unable to attend, today we have had a team feedback session regarding the new intake of students. I raised my observations to the group which was difficult as some of the student/participants are also members of this group, at first I think they were concerned their anonymity would be compromised and they may be embarrassed. No one was identified and I kept the discussion broad enough for even the student/participants to comment. Have decided to ask some open ended questions of all the student/participants to see if I can shed further light on this.

APPENDIX 5B: PEER OBSERVATION FIELD NOTES SECOND INTERROGATION

Field notes from students/participants while conducting peer obs2004 /2005
Revisited Autumn 05 (themes)
Revisited October 09 (what do I know now?)

August 5th 2004 10.30 a.m.
Student/Participant 5

Student/participant delivered teaching session to myself and colleagues (two colleagues who do not have NHS background and one with an NHS background)
at UWB, the subject was 'applying RM standards'. This was a session that would complete the first learning cycle for the student/participant and bring her back up to speed with the rest of the group. The Q&A session (which formed part of the student/participant's teaching session) began with questions from us around the application of various teaching methods in the teaching context, student/participant came around to disclosing that the experiential methods were difficult for her, as far as RM was concerned people 'turned up in order to be told how to do it' and were not encouraged to 'think about it'. She herself was finding the thinking part 'woolly' and she was resisting the temptation to just deliver what she always had. I guess this student/participant is out of her 'comfort zone'. Myself and my colleagues were encouraging in i.e. her confidence would come when she had more practice. She also said that she was finding it hard to answer questions from bosses who wanted to know 'the ins and outs' of what she was doing as she didn't yet know herself, this made her feel vulnerable.

August 5th 2004 10.30 a.m.
Student/Participant 5
What was significant about his? The fragility of the student/participant and the tensions to go back to what she had always done. What about the bosses? Were they a legitimate obstacle to her proceeding or were these her fears? Either way they were her 'constructs' or hah hah her obstructs.
Reminder to self, on-line learning communities are there to support student/participants need to get them using them so they feel less vulnerable.

Wednesday October 13th 2004 all day
Student/Participant 11
The student/participant was delivering RM training as part of an RCN initiative covering subjects on report writing, negotiating and presenting a case for the Safety Committee. The student/participant was not in her host organisation for this session but some of the students to her session worked in her organisation, all of her students were NHS employees. The student/participant has a wealth of propositional knowledge and is highly motivated, she is a real advocate for the change agent approach. However watching her (aside from the peer observation evaluation) I realised that although she espouses student interaction and participation she actually controls sessions, even a session on action learning she interrupted her students and would answer for them. After the sessions had finished I decided to tell her of my observations to see if I had observed correctly. At first she became defensive, I think because she thought I was criticising her teaching practice, but

when she understood it was simply that I wanted to understand she relaxed. She said that handing over control to her students would mean they would go off 'like a box of frogs' and her organisation was explicit about 'managing what people do'. People were not encouraged to think too far away from organisational dictate. She welcomed the opportunity to use deep approaches to learning but 'dreaded the possibility of students doing what they liked about risk management'. I was really surprised by this, I hadn't thought that student/participant' students would run amok in the NHS but it did give me an insight into how this rigid approach to risk management education has survived in a context that is supposed to by dynamic.

Wednesday October 13th 2004 all day
Student/Participant 11
What was significant about this? The student/participant is a construct of her own constructs! The RM system in the organisation appears to be based on controlling the workforce, using deep approaches to learning for some reason makes the student/participant think her students will become uncontrollable. Shades of Freire here, will the workforce start to ask questions! Is this an obstacle to bringing about change?..there must be incredible tensions going on within as I believe that the ...
student/participant really does want things to improve.

November 18th 2004 9- 10.30 am
Student/Participant 10
Student/participant delivered mandatory and statutory training as part of Induction programme within host organisation, students to the session were all NHS employees. Very smooth and efficient delivery of material. Although the peer observation evaluation was good overall, the discussion after the session revealed some of the issues around delivery of the student/participant called 'rigid' curriculum. Because it is classified as 'mandatory and statutory' the student/participant felt it had to be covered in it's entirety and as there was such limited time to do this the opportunity to be creative in delivery of education (she felt) was restricted. This is at odds with the deep approach to learning we (UWB) promulgate as part of the risk-*e* approach. I asked her what she might do about this, practically she said she needed more time for delivery and to get that she would have to negotiate with her bosses. This would be difficult as time away from the workplace was at a premium so she would have to make a case for the merits of spending more time to deliver the curriculum this way. She was prepared to do this although was 'not looking forward to that conversation'.

November 18th 2004 9- 10.30 am
Student/Participant 10
What was significant about his? Rigid curriculum and rigid routineised practice as a way of delivery promotes a surface approach to learning, the student/participant is frustrated and what I have heard from other student/participants people only turn up to get themselves ticked off some sort of list of attendance. This supports the lit I reviewed and the market research on current RM education. Arhhhhh.

November 18th 2004 p.m.
Student/Participant 2.
Have just completed session on peer observation, the subject being taught was in managing risks associated to identifying abuse of vulnerable adults. It was delivered in the host organisation and all the students were NHS employees. The session itself was great, the

content was interesting but not overfull and made interactive through Q&A, team discussions and even a quiz. This student/participant has a new found passion for teaching and learning and this was obvious. I participated in the session as one of his students and found myself 'learning' with the rest of the class, had to switch my head back to observing and while doing so wondered how my presence might be affecting the group. I observed they would look sidelong at me on occasion, I think sometimes to test my reaction to the content of the session or to a comment they had made. At first they seemed to challenge the student/participant when he asked them to assess and report risks or concerns with 'yes but we can't do that here', their reasons for not being able to 'do it' were not clear although there seemed to be some tacit understanding of some organisational culture or norm that remained unspoken. One or two of them complained about being away from 'the job', but the student/participant won them over by telling them this (learning) was part of their job too. The crux came when the session students asked the student/participant what he was going to do to help them in the future if he really expected them to change things on the ground and I could tell he was stumbling. What could he do? I need to ask that question too.

November 18th 2004 p.m.
Student/Participant 2.
What was significant? This student/participant was using deep approaches to RM education, he is enthusiastic and motivated and wants things to improve. His students could become his agents of change but there appears to be some tacit (possible cultural?)obstacle to him achieving this.

Tuesday 18th January 2005 1.30 – 4.30
Student/Participant 12
This student/participant had delivered a 'team teaching session' with a colleague from the same organisation. This was not delivered in their own organisation but is part of their remit, all of their students were NHS employees. The session had been about the application of RM standards to practice. There were some basic errors in teaching which were picked up on in the evaluation but what was interesting was the nervousness around the delivery of the session. The student/participant' students were all employed in LHB's in the NHS, some of their behaviour during the session left a little to be desired (answering mobile phones and chatting to colleagues) but the nervousness didn't appear to be around this. I raised this with the student/participant and she said it was because I was there. Not because she was being assessed but because she felt that I would expect her to make a 'dull bunch' enthusiastic about learning about RM when everyone knew that they just wanted to be 'told'. This was so at odds with her previous espoused theory in which she had stated that what they were doing just wasn't working. Blimey. I tried to explain that she didn't have to turn them into pedagogues just use methods that encouraged deep approaches so they would learn better. This didn't go down too well either as she said that they just wanted to be 'ticked off the list' for attending. Funny really as this is just the sort of contextual change we talked about at Gregynog, perhaps when actually faced with it it becomes daunting. I hope she doesn't give up. Perhaps I need to spend time with her on tutorial, I can offer.

Tuesday 18th January 2005 1.30 – 4.30
Student/Participant 12
What was significant about this? I think the student/participant is afraid and because of that she interpreted my presence as being there to catch her out in some way. What

reassurance/support does she need? What kind of failure has she constructed for herself before she has had any?

Tuesday 18th January 2005 1.30 – 4.30
Student/Participant 14
This was a peer observation team teaching session, the student/participant delivered a session on application of RM standards. This was not delivered in their own organisation but is part of their remit, all of their students were NHS employees. I have seen this student/participant deliver training on two other occasions (though not peer observed), she is a confident and very able teacher. This student/participant was the second part of the team (see above) with the same student/participant' students, when it came to the delivery of her part of the session while she still had what her colleague called 'dull bunch' her approach to them was different. I asked her what she thought of her students and she agreed with her colleague that they 'were not the keenest' but there were one or two that she could encourage and move along and that she would concentrate on these. I asked her why and she said 'they might motivate the others'. She also said something about 'low hanging fruit' which I later understood her to mean start with the easy pickings first. I wonder why she hadn't been deterred from adopting a deep approach to RM , perhaps confidence has something to do with it? After the session this student/participant was actively talking to the individuals she thought might be 'the low hanging fruit' and arranging to provide more support and guidance so they could take it forward in their own organisations.

Tuesday 18th January 2005 1.30 – 4.30
Student/Participant 14
What was significant about this? Although this was team teaching the two student/participants are very different. One seems to expect failure before she has started and the other looks for success how does this relate to approaches to teaching and learning? How can I use this in my own teaching, I would like to think I am more like the second student/participant but have I ever been like the first and if so what did I do to overcome it?.....

Tuesday October 3rd 2005 p.m.
Student/Participant 13
This followed a peer obs session for which the student/participant delivered on governance. This was not delivered in his organisation but is part of his remit, all of his students were NHS employees. Well what can I say. The student/participant appears to be two people. On the one hand passionate about changing RM education and desperate to bring down the amount of adverse incidents there are in the NHS. As a senior manager he is influential on how RM is delivered but here was a prime example of reverting back to 'no I will tell you what to do'. When the student/participant' students suggested innovations they were told they were 'wrong' and should adhere to organisational structures and form filling. This startled a few of them, as senior managers themselves they are used to a fair degree of autonomy.

Tuesday October 3rd 2005 p.m.
Student/Participant 13
What was significant about this session? Can it be that the student/participants themselves are in such a routiniesed practice of delivery they have a lot of unlearning to do before they can encourage a deep approach to learning about RM. I have a feedback session planned

for this student/participant next week, I will raise these observations outside of the evaluation and see what happens.

Fiday 14th October 2005
Didn't have feedback session with student/participant as he was unable to attend, today we have had a team feedback session regarding the new intake of students. I raised my observations to the group which was difficult as some of the student/participants are also members of this group, at first I think they were concerned their anonymity would be compromised and they may be embarrassed. No one was identified and I kept the discussion broad enough for even the student/participants to comment. Have decided to ask some open ended questions of all the student/participants to see if I can shed further light on this.

Second cohort of students
Peer observation 2005/2006

Thursday 16th March 2006
Student/Participant 2
This student/participant took a huge leap and instead of delivering a session on reporting incidents using organisational systems conducted a session on learning from mistakes. The session was not delivered in his host organisation but all of his students were NHS employees. He was able to draw on mistakes made by the Trust, one major incident was common knowledge among the group. What struck me about this student/participant was that he was prepared (despite his espoused liking for existing RM training) to try an approach that was very interactive (unlike his other sessions which he reported as saying were very prescriptive. My feel for this is that the student/participant' students who knew this student/participant were 'thrown' by this new approach and appeared quite suspicious of his suggestions that we should be more open about divulging when mistakes are made. This was different from previous student/participants who experienced resistance from their bosses and organisational systems, this student/participant experienced resistance from the students themselves. He was a little downhearted after the session. Another indication where as I might need to raise awareness with the rest of the team where our student/participants might need support out in the field.

What was significant about this? I am beginning to realise how different the student/participants are from each other and how different each of the context are in which they are located. There can be no real planning of how each might proceed, I just have to see what happens. This is so at odd with RM in it's current state of controlling everything.

Tuesday 4th April 2006
Student/Participant 7
Student/participant delivered session on adverse incident reporting. This was a very lively interactive session with 20 anaesthetists in his host organisation. The student/participant was adept at using deep approaches to teach and the quality of contribution from the student/participant 'students was significant. The issues they raised during the session were interesting, they didn't doubt the need to report incidents and to have an appropriate safety climate but they were concerned about what was achievable in a culture that also involved Trusts as money making ventures 'Nhs is about to enter the money making arena' they also pointed out that putting systems in place will not stop incidents happening as 'patients are not cars and each will react differently'. The student/participant was undeterred by their

arguments for non involvement and reiterated they could contribute to the system in a positive way if they were prepared to learn from mistakes. He used an example of human adaptive learning with 'big syringe little syringe – as colour coded universal control mechanism but also stated need for cognitive awareness through professional competence. This made me smile as was part of on-line discussion/debate we had had over assessment of learning. Great to see this stuff being used in their own organisations. Woo hoo.

What was significant about this? Don't know about patients not being cars the student/participant are not cars and neither are their students or the organisations they work in! these were a highly intelligent group of students, their knowledge of unreported risks and actual events is probably significant. If you could access this....other thing I noted was the professional persona that was evident. I became quite invisible to them at the back of the room so could easily overhear conversations. Some of which reflected how much of RM could be tied in with a professional competency that they perceived as worthy of their time? would reporting harm or enhance their promotion or career?

Thursday 27th April 2006 1.30 p.m.
Student/Participant 6
Session on autonomy and actions in RM delivered by student/participant in his host organisation, all of his students were NHS employees. This surprised me by being a very 'quiet' session. The student/participant' students sat quietly almost throughout despite attempts to engage them, their behaviour was incongruent even with the title of the session. I mentioned this afterwards to the student/participant and he said that he thought it was because they were used to being told what to do to the extent if they were told to be autonomous they would ask how. I hadn't considered that some of the student/participant' students might be passive. I asked him what he would do about it, he said that while 'there is a real pull to pick up the reigns and tell them what to do again' he wouldn't he would try and find a couple of people who might move with this and work on them.

What was significant about this? This reminds me of the student/participant group last year who were not passive but apparently uninterested, she too decided to try to get some started in order to move the rest along. Perhaps looking for 'early adopters' is a common strategy in bringing about change.

October 09 Reflection
This has made interesting reading. On reflection I can see how the student/participant faced different challenges when back out in their host organisations (field), some of these challenges were to do with their own ability to cope with bringing about a change in the way they delivered education in order to bring about changes in RM practice itself. Some challenges were the bosses who wanted to know what was going on and some were their own students who were also a little lost. It would have been good to get a critical mass of student/participants through the whole programme so they could have provided mentorship and support (as originally intended) for those coming after. There were a lot of tensions in the field, knowing what I do know it would have been good to run sessions on coping with these.

APPENDIX 5C: DATA BARRIERS TO LEARNING

2nd cycle/second study/Questions for 2004 student/participants and data.

Reminder re: ethical practice

1. What barriers did you experience when you tried to practically implement learning theories into risk management practice?

2. How did you overcome these barriers?

3. What suggestions would you make to future students regarding implementing learning into risk management practices? (probe Question)

4. The risk-e project is predicated on incorporating teaching and learning into risk management by developing key change agents who can cascade the process within their organisations. Do you feel you have been part of this and if so how?

A 1You need to understand the learning theories before they can be applied. Understanding is a barrier to be overcome.

Participant 2

A 2 Taking time to understand is important..yeah.

Participant 2

A 3 Have more time to prepare to learn in order to make explicit what you know tacitly

Participant 2

A 4 Well you know er...the organisation I work in is small so there is not so much change within it I can influence. *Participant 2*

A 1 There are time wasters and it can be difficult to get staff to appreciate the importance of these things.

Participant 7

A 2 'making risk management relevant to everyone'

Participant 7

A 3 Participation and making nuisance of myself was the key. Being the voice of doom and pointing out areas that need improvement. Bring teaching and learning into what I do.

Participant 7

A 4 Yes I did and do, it's about cooperation.

Participant 7

A 3 Need to get boss on your side or you will fail

Participant 1

A 4 In order to achieve this you need to get management in the organisation to see the value of education. It was hard for me as management were not happy for me to be a teacher.

Participant 1

A 3 Point out benefits to management, incorporate feedback and be prepared for some knocks

Participant 3

A 4 I lost my network of colleagues because of problems with the e-learning system, some of that was down to me.

Participant 3

A 1 As an assessor of the X, I am not directly involved in the implementation of risk management practice within an organisation. I act as an advisor to our member organisations to reinforce good practice, and therefore whilst I can incorporate learning theories into educational sessions on risk management, these would not be subject to barriers that might present when cascading this in a department or ward.

2. N/A

3. try to include as part of the risk management element and not as a separate teaching element, so that staff learn by working through the teaching cycle in practical sessions.

4. My role was already one of cascading the risk management process to support newly developing organisations through teaching and learning events prior to starting on the risk-e course. The risk-e course has given me the opportunity to revisit the different teaching methods I use to add more variety and student-focused learning.

Participant 5

A 1.The main barrier was getting access to risk E in order to gain access to the material and the weekly conferences.

In addition, some of the participants on the course were not new to this field and already had teaching/risk management Aualifications.
We already had a series of Strategic Objectives as an organisation, three of which were particularly relevant: compliance with legislation, learning organisation and best management practice.
In addition, the Trust had established 2 Action Learning Sets (I am a member of one).

My main learning theory was accepting responsibility for your learning and using action learning to achieve change. I tried this approach with three separate groups (one internal, one external and a network). The main issue for all three groups was the prior preparation of the participants in order to make the group work/action learning possible.
On the plus side – all three groups enjoyed the process and would like the approach repeated.
On the negative side – you have to trust that participants will access the information sent to them beforehand and update their knowledge as a result. In my experience this is a method increasingly used (which was why I used it) but in all three cases more preparation could have been done.

A 2. By asking why the information wasn't accessed beforehand – was it the format, the use of weblinks, the material, the time between the material being sent and the session. In one case we arranged a briefing day 3 weeks prior to the course in order to explain the approach, go through the modules and provide the material.

In all 3 scenarios the responses covered work overload, using own time to catch up with work already. Again in all three scenarios the sessions were in fact supported by the material reAuired and did not rely upon the approach advocated – learn in your time & discuss as a group.

A 3 It depends on where you are in the organisation and what prior knowledge you have.
If you are in a corporate advisory capacity with years of experience already then I would advise them to use the opportunity to review what they are using and see whether in some scenarios a different approach might net them better results.
The other suggestion is to think what they are trying to achieve, the scale of the change and whom they can rely upon for support.
If they are less experienced then they may need more practical support in terms of teaching practice and methodologies.
I suppose that I would also link it to change management – again their own need will depend on their individual position, experience and ability to make change happen.

A 4 I suppose that as I have been in my post for 10 years and have gained competence and Aualifications along the way I realised the point of some of the exercises etc but felt that I already was such a change agent.
Indeed my MsC had covered this issue in relation to health & safety management.
However, I did try out new things that were provided and incorporated them into sessions and preparation of materials.
For me, I discovered I need group interaction and discussion as part of my own learning as that is how I convert reading and references into use. However, I recognise that virtual teaching and learning is the way forward for the 21st century.

Participant 9

A 3 Work with the decision makers, the 'movers and shakers' of the organisation, get influential people on your side

Participant 10

A 3 what would I suggest? Work with others *Participant 10*

A 3 Think of what they are trying to achieve, the scale of the change and whom they can rely upon for support

Participant 6

A 4 We are all so busy, so for me this was an expectation that went unfulfilled.

Participant 6

APPENDIX 5D: SUMMARY TELEPHONE AND EMAIL DATA

BARRIERS

The risk-e learners (N=11) were approached to answer a set of questions relating to implementing changes in risk management practice and being part of the risk-e LO, response to requests for research participation resulted in five telephone interviews and two questionnaires completed via e-mail (N= 7). The questions were the same in each instance and were qualitative in nature. All interview data was transcribed verbatim. In order to ensure validity of interviews the responses given to each question was relayed back to each learner so they had the opportunity to confirm (or disconfirm and alter) data. All students who responded through email were given the opportunity to confirm or alter data up to date of publication. Each learner was assured anonymity and consent was gained for the data to be used for dissemination of research findings through conference and publication. The data analysis consisted of identification of themes and clustering of responses in order to develop a concept map as to why we were observing such a phenomenon. This was then further scrutinised by research colleagues so that alternative explanations could be found. In addition the authors reflected on the anecdotal evidence gathered on the learners over the last eighteen months and interpreted the findings of the data in light of their own experiential knowledge.

Summary of results

What was interesting to us as researchers is that we have spent considerable time with all of the learners, either in the role of lecturers on the tHE:risk-e programme or as researchers and facilitators on the risk-e project. We had spent time conducting peer observation of teaching practice, we had fulfilled pastoral roles and had attended formal and informal meetings with our learners. In short we felt we had a good understanding of the environments (especially as both authors have been clinicians in the NHS in previous lives) in which they worked and to some extent thought we understood our learners as individuals. While the data set is small the researchers are able to compare the responses to this question with anecdotal evidence gathered on learners over the last eighteen months. This has enabled us to interpret the data in a more informed and realistic way and suggest some theories relating to what we perceive to be a theory practice gap. The participants were asked four open ended questions.

Research questions

1. What barriers did you experience when you tried to practically implement learning theories into risk management practice? 2. How did you overcome these barriers? 3. What suggestions would you make to future students regarding implementing learning into risk management practices? (probe question) 4. The risk-e project is predicated on incorporating teaching and learning into risk management by developing key change agents who can cascade the process within their organisations. Do you feel you have been part of this and if so how?

Responses to question 1

Overall the participants saw no barriers to implementing learning theories and were able to give practical examples of how they had achieved implantation (N=5). Barriers that were mentioned included:

You need to understand the learning theories before they can be applied. Understanding is a barrier to be overcome.

Participant 2

There are time wasters and it can be difficult to get staff to appreciate the importance of these things.

Participant 7

While the majority of participants did not perceive any barriers to implementing learning theories into risk management practice, when asked what suggestions they would make to future students regarding implementing learning into risk management practices the answers corresponded to the researchers own knowledge of what they knew about the participants working environments. The researchers were therefore surprised at some of the responses to question one as we would have thought that those we knew to be working in unsupportive environments to have mentioned this as a barrier.

Responses to question3 (these participants that were known to the researchers to be working in unsupportive employing organisations)

Need to get boss on your side — Participant 1
Point out benefits to management, incorporate feedback. — Participant 3
Think of what they are trying to achieve, the scale of the change and whom they can rely upon for support — Participant 6
Work with the decision makers, the 'movers and shakers' of the organisation, get influential people on your side — Participant 7

These participants were known to the researchers to be working in organisations that were supportive in theory

Have more time to prepare to learn in order to make explicit what you know tacitly

Participant 2

Try to include as part of risk management and not as a separate teaching element so that staff can learn by working through the teaching cycle in practical terms

Participant 5

These participants were known to the researchers to be working in organisations that were supportive employers

Work with others — Participant 4

Responses to question4

We hoped the answers to question four would help us to understand whether the learners had felt they had been part of the risk-e LO. Again these responses are interpreted in the light of the anecdotal evidence gained over the last eighteen months.

These participants were known to the researchers to have been constrained by their environment

In order to achieve this you need to get management in the organisation to see the value of education. It was hard for me as management were not happy for me to be a teacher.
We are all so busy, so for me this was an expectation that went unfulfilled.

Participant 4

Participation and making nuisance of myself was the key. Being the voice of doom and pointing out areas that need improvement. Bring teaching and learning into what I do.

These participants were known to the researchers to have not understood or used the broader risk-e network available to them

My role was already one of cascading the risk management process to support newly developing organisations through teaching and learning events.

Participant 5

The organisation I work in is small so there is not so much change within it I can influence.

These participants were known to the researchers to have had difficulties with the e-learning support facility

I lost my network of colleagues because of problems with the e-learning system, some of that was down to me.

Participant 3

For me, I discovered I need group interaction and discussion as part of my own learning as that is how I convert reading and references into use. However, I recognise that virtual teaching and learning is the way forward for the 21st century.

Participant 6

APPENDIX 5F: QUESTIONS AND DATA, EDUCATIONAL LEADERS

Questions for student/participants 2004/5 cohorts

1. **What is an educational leader?**
2. **Do you see yourself as an educational leader?**

Data for educational leaders
D = 1
1 telephone interview
Hi 1. Thanks for responding. Before we start we need to just confirm ethics with you, that you understand that your identity will remain anonymous, with your permission findings will be made public, without your permission whatever you discuss remains confidential unless you say something that might indicate you or another person is in danger whereupon I would have to talk to a third party. If at any stage you want to withdraw from the interview say and we will stop. I will relay back to you what I think you have said just to make sure I have understood and give you a chance to add or change anything. Is that ok?

Yes that is all ok, I remember this from last time but it is good practice to go over it, I am all for practice.

And you have understood everything and ok about anonymised findings being published?

Yes.

Q. What is an educational leader?
I'm not sure to be honest.
Q. Do you see yourself as an educational leader?
I suppose I do

Q. Why?
I see myself taking through various agendas that require various technical approaches such as training needs analysis and the developmental of training programmes that meet external requirements, organisational requirements and individual requirements.

Q. So taking through agendas is a form of educational leadership?
Yes it is and it is not always easy, for example statutory and mandatory training is an easy thing to get past the bosses as they are pushing for it but often difficult to get past the personal agendas of those coming on the courses.

Q. Why is that?
Because a lot of them *don't like the course itself* and the format is 'unchangeable' so we are stuck with it.

Q. So as an educational leader what do you do?

I use it as an opportunity for personal development for not only myself and my team but for the all staff in the organisation to ensure knowledge is there and people have the appropriate skill set.
I try to ensure that all staff have educational opportunities that will not only ensure "competence" but enable them to develop
I also try to achieve the objective of safe care/work environments by use of educational opportunities

Q. If I refer you back to the beginning when I asked you what and educational leader is you said you were not sure, if you were thinking of yourself in this role can you answer the question again?

Well ...what is an educational leader..? If it were me then I see myself as a driver for change, a provider, an expert and someone who believes in transferring knowledge around and sharing expertise.
Now how to do it - that's the trick!

Personality era, Influence era, Leadership behaviour era, Situation era, Contingency era, Transactional era, Anti-leadership era, Culture era, Transformational era.

Personal	Processes
innovative /visioning	problem identification/ solving/proactive *I also try to achieve the objective of safe care/work environments by use of educational opportunities*
motivational	action orientated taking through various agendas *I see myself as a driver for change*
erudite/wise/adaptive/ willing to learn = expert elite require various technical approaches an expert and someone who believes in transferring knowledge around and sharing expertise. personal development for not only myself	experimental/ exploratory/experiential/
learning from failure as well as success	learning from failure as well as success
influential/authoritative /negotiator	challenging and testing existing assumptions taking through various agendas
designer/steward/teacher/facilitator my team but for the all staff in the organisation to ensure knowledge is there and people have the appropriate skill set. I try to ensure that all staff have	systems/holistic approach/ team/shared learning/interdependence professional structures and practice such as training needs analysis and the developmental of training programmes that meet external requirements, organisational requirements and

educational opportunities that will not only ensure "competence" but enable them to develop	individual requirements.
trustworthy	rewarding/acknowledging caring

M = 2 Emailed response.

Q. **What is an educational leader?**

"A leader who educates rather than someone who leads education(who would be an eductional lead)"

Q. Do you see yourself as an educational leader?

Not yet. As a consultant I will be in a position to be a leader and in a position to educate. Working on the skills at present to allow me to do this.

Personality era, Influence era, Leadership behaviour era, Situation era, Contingency era, Transactional era, Anti-leadership era, Culture era, Transformational era.

Personal	Processes
innovative /visioning	problem identification/ solving/proactive
motivational	action orientated
erudite/wise/adaptive/ willing to learn = expert elite Working on the skills at present to allow me to do this.	experimental/ exploratory/experiential/
learning from failure as well as success	learning from failure as well as success
influential/authoritative /negotiator As a consultant I will be in a position to be a leader	challenging and testing existing assumptions
designer/steward/teacher/facilitator A leader who educates	systems/holistic approach/ team/shared learning/interdependence professional structures and practice
trustworthy	rewarding/acknowledging caring

J= 3 emailed response.

Q.What is an educational leader?

Some one who can lead and motivate others whilst also imparting knowledge and encouraging others to share knowledge and skills

Q.Do you see yourself as an educational leader?

Yes,

I feel I have potential to be, but am not necessarily doing this at the moment in my current role as am still fairly new in post and therefore establishing the role.

I feel there is always opportunity to expand skills and knowledge, whatever level of an organisation an individual works at.

For example, I work in a supportive role to Chief Executives, but am still able to find out information and data that they need in their work to enable them to perform better.

Personality era, Influence era, Leadership behaviour era, Situation era, Contingency era, Transactional era, Anti-leadership era, Culture era, Transformational era.

Personal	Processes
innovative /visioning	problem identification/ solving/proactive
Motivational Someone who can lead and motivate others	action orientated
erudite/wise/adaptive// willing to learn = expert elite I have potential to be opportunity to expand skills and knowledge	experimental/ exploratory/experiential
learning from failure as well as success	learning from failure as well as success
influential/authoritative /negotiator	challenging and testing existing assumptions
designer/steward/teacher/facilitator	systems/holistic approach/ team/shared learning/interdependence professional structures and practice imparting knowledge and encouraging others to share knowledge and skills.I work in a supportive role to Chief Executives, but am still able to find out information and data that they need in their work to enable them to perform better.
trustworthy	rewarding/acknowledging caring

T= 4 emailed response

Q. What is an educational leader?

I know I think what "educational" means and I know what "leader" means.

"Educational leader" could be used in different contexts to mean different things.

Anyone who takes decisions in the context of education could be included from the Secretary of State "downwards". Tony Blair said that it is all about education, education, education, and he is a policy leader.

If I decide to organise or fund a course am I an educational leader simply because i have taken an educational initiative which I expect other people to follow? Can a group or committee be an educational leader or only an individual?
If two people publish an article on education together are they both leaders
? And are they leaders only if and when someone (how many?) follow them
There is also sapiential (wisdom) authority that can be exercised, professor of education, leading on theory.
One might also lead by making decisions about education operationally as it were. Headmaster.
One might also lead by initiating or running an educational campaign, health education, charity.
So, one could be described as an educational leader if one leads in some way
at the educational policy making level, the strategic planning level, the operational level, or the theory development level, or in research.
What is the difference between an educator and an educational leader? If
"educational leader" has a meaning then does or should "educational follower" also have a meaning? Define "educational follower", if it can have a useful meaning, and you might be closer to understanding what could be meant by "educational leader"
Regards

Personality era, Influence era, Leadership behaviour era, Situation era, Contingency era, Transactional era, Anti-leadership era, Culture era, Transformational era.

Personal	Processes
innovative /visioning	problem identification/ solving/proactive
motivational	action orientated Anyone who takes decisions
erudite/wise/adaptive/willing to learn = expert elite sapiential authority that can be exercised, professor of education, leading on theory. One is an educational leader if one leads in some way at the theory development level, or in research	experimental/ exploratory/experiential
learning from failure as well as success	learning from failure as well as success
influential/authoritative /negotiator	challenging and testing existing assumptions
designer/steward/teacher/facilitator	systems/holistic approach/ team/shared learning/interdependence professional structures and practice lead by making decisions about education operationally one leads in some way at the educational policy making level, the strategic planning level, the operational level,

trustworthy	rewarding/acknowledging caring

Did not answer second part.

A = 5 emailed response

Q. What is an educational leader?
Did not answer this

Q.Do you see yourself as an educational leader?
Yes within sphere of own practice, I can influence the learning for others and try to instil in them the desire to learn more.

Personality era, Influence era, Leadership behaviour era, Situation era, Contingency era, Transactional era, Anti-leadership era, Culture era, Transformational era.

Personal	Processes
innovative /visioning	problem identification/ solving/proactive
motivational	action orientated
erudite/wise/adaptive/willing to learn = expert elite	experimental/ exploratory/experiential
learning from failure as well as success	learning from failure as well as success
influential/authoritative /negotiator I can influence the learning for others	challenging and testing existing assumptions
designer/steward/teacher/facilitator instil in them the desire to learn more	systems/holistic approach/ team/shared learning/interdependence professional structures and practice
trustworthy	rewarding/acknowledging caring

T = 6 emailed response

Q. What is an educational leader?
Did not answer this part

Q.Do you see yourself as an educational leader?

Yes. In as much as I take responsibility for mine and others learning about risk management. I try to be innovative in that and bring new ideas and spread knowledge.

Personality era, Influence era, Leadership behaviour era, Situation era, Contingency era, Transactional era, Anti-leadership era, Culture era, Transformational era.

Personal	Processes
innovative /visioning I try to be innovative and bring new ideas	problem identification/ solving/proactive
motivational	action orientated
erudite/wise/adaptive/willing to learn = expert elite	experimental/ exploratory/experiential
learning from failure as well as success	learning from failure as well as success
influential/authoritative /negotiator	challenging and testing existing assumptions
designer/steward/teacher/facilitator I take responsibility for mine and others learning about risk management. I try to spread knowledge	systems/holistic approach/ team/shared learning/interdependence professional structures and practice
trustworthy	rewarding/acknowledging caring

W = 7 emailed response

Q. What is an educational leader?
Not answered this.

Q.Do you see yourself as an educational leader?

Yes. If you count for taking forward the principles and ideas I have learned and try to impart that with others then yes, I suppose I also lead on it from my department

Personality era, Influence era, Leadership behaviour era, Situation era, Contingency era, Transactional era, Anti-leadership era, Culture era, Transformational era.

Personal	Processes
innovative /visioning	problem identification/ solving/proactive
motivational	action orientated
erudite/wise/adaptive/willing to learn = expert elite	experimental/ exploratory/experiential
learning from failure as well as success	learning from failure as well as success

influential/authoritative /negotiator I also lead on it from my department	challenging and testing existing assumptions
designer/steward/teacher/facilitator taking forward the principles and ideas I have learned	systems/holistic approach/ team/shared learning/interdependence professional structures and practice
trustworthy	rewarding/acknowledging caring

P= 8 interview

Hello there 8. Nice to speak to and thanks for making time for the interview. Some housekeeping before we start as I need confirm research ethics with you. Firstly that you understand that your identity will remain anonymous, with your permission findings will be made public, without your permission whatever you discuss remains confidential unless you say something that might indicate you or another person is in danger whereupon I would have to talk to a third party. If at any stage you want to withdraw from the interview just say and we will stop. I will relay back to you what I think you have said just to make sure I have understood and give you a chance to add or change anything. Is that ok?

Yes Dee that is all fine. Go ahead with your questions.

Q. What is an educational leader?

Someone who can adapt and change what they know and who are not afraid to do so publicly! What do you call it Dee challenging your own assumptions.

Q.Do you see yourself as an educational leader?

To some extent I am new to this but I accept how *using education is a good vehicle for bringing about change*, I have certainly seen this is practice, I surprised myself.
Does that mean I have adapted in public, yes and it is scary and empowering at the same time.

Q. How did you do this?

I informed one of the groups I was teaching that *I had learned a better way to teach,* that the way I had been teaching wasn't good enough as it just wasn't providing the sort of information that I needed back from them, and I asked them to tell me if they thought how I was doing things differently was any better.

Q. What happened?

I earned a lot of respect from some the people I work with, I think if you can say not so much I was wrong but I have found a better way then they are also able to do that. They also began to contribute more, it was less what I was teaching them more what we were learning. Also the risks reported increased, so as an organisation we found out a lot.

Q. You said some of the people?

What?

Q. You said some of the people respected you more what about the others?

Well what is that saying you can only please some of the people some of the time or whatever....a few colleagues said I was wasting my time that things would just go back the way they were. My feeling is they might *if we don't change the reporting systems to match the teaching sessions, it has to be joined up. I am working on that one but some people do not want change.*

Q. As an educational leader how will you deal with that?

Hah. Yes good one. Educate the ones who don't want change to decide that they do! I don't know yet but I don't want to lose the converts that I have gained so I need to think of something.

Personality era, Influence era, Leadership behaviour era, Situation era, Contingency era, Transactional era, Anti-leadership era, Culture era, Transformational era.

Personal	Processes
innovative /visioning I need to think of something.	problem identification/ solving/proactive
motivational	action orientated I have done it it is scary and empowering at the same time.
erudite/wise/adaptive/willing to learn = expert elite Someone who can adapt and change what they know I had learned a better way to teach,	experimental/ exploratory/experiential using education is a good vehicle for bringing about change
learning from failure as well as success	learning from failure as well as success I think if you can say not so much I was wrong but I have found a better way then they are also able to do that.
influential/authoritative /negotiator	challenging and testing existing assumptions challenging your own assumptions I asked them to tell me if they thought how I was doing things differently was any better
designer/steward/teacher/facilitator I asked them to tell me if they thought how I was doing things differently was any better Educate the ones who don't want change to decide that they do!	systems/holistic approach/ team/shared learning/interdependence professional structures and practice They also began to contribute more, it was less what I was teaching them more what we were learning
trustworthy	rewarding/acknowledging caring

The process of sense making between the two questions augment the abilities of the student/participants towards developing a safety culture (Elliott *et al.*, 2000).

1= Q. So as an educational leader what do you do?
I use it as an opportunity for personal development for not only myself and my team but for the all staff in the organisation to ensure knowledge is there and people have the appropriate skill set.
I try to ensure that all staff have educational opportunities that will not only ensure "competence" but enable them to develop

I also try to achieve the objective of safe care/work environments by use of educational opportunities

1= Q. If I refer you back to the beginning when I asked you what and educational leader is you said you were not sure, if you were thinking of yourself in this role can you answer the question again?

Well ...what is an educational leader..? If it were me then I see myself as a driver for change, a provider, an expert and someone who believes in transferring knowledge around and sharing expertise.

Now how to do it - that's the trick!

8= Q. As an educational leader how will you deal with that?

Hah. Yes good one. Educate the ones who don't want change to decide that they do! I don't know yet but I don't want to lose the converts that I have gained so I need to think of something.

How many said yes they saw themselves as educational leaders?

6 yes, one didn't answer and one said 'not yet'.

Is educational leadership part of their change agent skill set?

Personality era, **Influence era 2**, **Leadership behaviour era 3**, **Situation era 2**, Contingency era, Transactional era, Anti-leadership era, **Culture era 2**, **Transformational era 2 .**

Collective behaviour frames (Jonhnston 1995) that correspond to concept table: Positive influencing force (Lewin 1947)

Personal	Processes
innovative /visioning I try to be innovative and bring new ideas 6 I need to think of something.8 2 student/participants	**problem identification/ solving/proactive** I also try to achieve the objective of safe care/work environments by use of educational opportunities 1 1 response
Motivational Someone who can lead and motivate others 3 1 response	**action orientated** I see myself as a driver for change 1 Anyone who takes decisions 4 taking forward the principles and ideas I have learned 7 I have done it it is scary and empowering at the same time 8 4 student/participants
expert elite = erudite/wise/adaptive/willing to learn require various technical approaches an expert and someone who believes in transferring knowledge around and sharing expertise. personal development for not only myself 1 Working on the skills at present to allow me to do this.2 A leader who educates 2 I have potential to be opportunity to expand skills and knowledge 3 sapiential authority that can be exercised, professor of education, leading on theory. One is an educational leader if one leads in some way at the theory development level, or in research 4 Someone who can adapt and change what they know I had learned a better way to teach 8 5 student/participants	**experimental/ exploratory/experiential** using education is a good vehicle for bringing about change 8 1 student/participants
learning from failure as well as success I can influence the learning for others 5 1 student/participants	learning from failure as well as success I think if you can say not so much I was wrong but I have found a better way then they are also able to do that8 1 student/participants
influential/authoritative /negotiator I also lead on it from my department 7 1 student/participants	challenging and testing existing assumptions challenging your own assumptions I asked them to tell me if they thought how I was doing things differently was any better 8

	1 student/participants
OL roles = designer/steward/teacher/facilitator my team but for the all staff in the organisation to ensure knowledge is there and people have the appropriate skill set. d I try to ensure that all staff have educational opportunities that will not only ensure "competence" but enable them to develop. 1 d instil in them the desire to learn more 5 f I take responsibility for mine and others learning about risk management. I try to spread knowledge 6 t f I asked them to tell me if they thought how I was doing things differently was any better Educate the ones who don't want change to decide that they do! 8 t 4 student/participants	**systems/holistic approach/ team/shared learning/interdependence** professional structures and practice such as training needs analysis and the developmental of training programmes that meet external requirements, organisational requirements and individual requirements 1 imparting knowledge and encouraging others to share knowledge and skills. I work in a supportive role to Chief Executives, but am still able to find out information and data that they need in their work to enable them to perform better 3 lead by making decisions about education operationally one leads in some way at the educational policy making level, the strategic planning level, the operational level, 4 They also began to contribute more, it was less what I was teaching them more what we were learning 8 4 student/participants
trustworthy	rewarding/acknowledging caring

Summary of findings

Personal

- Most (N=5) present responses that fall in the learning elite category
- Second (N=4)most popular responses fall into the OL category, responses are closer to designer/teacher/facilitator roles.

Process

- N=4 responses fall into action orientated process and N=4 fall in to the systems/holistic approach/ team/shared learning/interdependence category.
- There were NO responses for the trustworthy + rewarding/acknowledging caring category.

What can you infer from the gaps in responses? You could infer that student/participants who not answer what is an educational leader but say they thought they were one amounts to this is what they think educational leadership to mean. Student/participants who answered what they thought an educational leader to be but did not answer whether they thought they were one is lost data, if the student/participant was at intervention (conference) you could still look for evidence of them exhibiting these attributes in action and infer it as an espoused theory.

Personal	Processes
innovative /visioning	problem identification/ solving/proactive
motivational	action orientated
erudite/wise/adaptive/willing to learn = expert elite	experimental/ exploratory/experiential
learning from failure as well as success	learning from failure as well as success
influential/authoritative /negotiator	challenging and testing existing assumptions
designer/steward/teacher/facilitator	systems/holistic approach/ team/shared learning/interdependence professional structures and practice
trustworthy	rewarding/acknowledging caring

APPENDIX 5G: CONFERENCE FRAME THINK TANK QUESTIONS

risk-*e* conference :Think Tank Criteria

Overall facilitators - acting in an organising role to manage the process.

Each group will be allocated a conference convenor to facilitate learning in each particular group.

Maximum of 20 per group.

Delegates at the conference submit the questions that are grouped and agreed by the conference organisers: An example of a think tank question would be:
'How do we make risk everyone's responsibility?'

'Rules' of the group work

Each session will last 1 and a half hours.
A scribe and chair person should be appointed at the beginning of the session.

Groups are invited to be as innovative as possible to come up with working answers to the question posed.

Learning is encouraged throughout through the use of small group work and the sharing of group ideas.

Over the duration of the session the groups will be asked to address the 3 following questions...

1. What experience have you had of X risk management problem in your organisation?

2. What elements have either improved or been detrimental to the management of X risk?

3. How can you as practitioners go about improving the management of X risk on return to the work place?

APPENDIX 6: THIRD CYCLE

APPENDIX 6A: DATA STUDENTS PRE POST QIQA PHASE ONE

Pre teaching session.
As part of the ongoing research associated with the risk-*e* project we would like to capture some of your thoughts relating to learning and safety. This data will help us to understand what effect the teaching intervention may have and what improvements may be required. Participation in this (as a student of the teaching intervention and in answering questions relating to the teaching intervention) is undertaken on a voluntary basis. You are free to participate in either or both activities and to withdraw from all activities at any time. All data will be anonymised and remain confidential. You are invited to ask questions about the teaching intervention from Dee Jones (Lead academic for the risk-*e* project) who can be contacted on dee.jones@bangor.ac.uk . The open-ended questions are required to be answered pre and post teaching intervention, please supply as much information as you feel necessary. Many thanks for your help

Q1. Do you think understanding how things go wrong can contribute towards a safety climate? If you have answered yes please say why.

1. yes – *as good analysis of case is shown*
2. *yes analysis of incidents can change systems and reduce risk of further harm*
3. *yes, only then can you institute changes*
4. *I suppose so.*
5. *yes. Everyone learns by experience of what has happened whilst working.*
6. *learning from mistakes enables the same mistakes to be avoided. Seeing where the errors occurred enable changing the system and avoiding the same mistake*
7. *yes learn from your mistakes, you feel bad and do not do it again!*
8. *yes – through identification of risk factors change can be implemented.*
9. *yes*
10. *yes it makes you aware of potential risks and they can be changed*
11. *yes- pre empts mistakes*
12. *yes having an understanding can lead to appreciation of adverse events and possible preparation*
13. *yes. ID problem can then institute changes to improve*
14. *yes reduce 'holes' in swiss cheese model*

15. *yes- may think more about what can go wrong with each of my actions + consequences*
16. *yes*
17. *yes. It is the old saying 'learn from your mistakes'*
18. *yes know or see things go wrong can compensate for them*
19. *yes. Awareness if crisis evolution so important*
20. *yes. Preventing problems before they arise. Vigilance.*

General analysis

N= 20 = yes

Q.2. Do you think understanding how we learn can contribute towards a safety climate? If you have answered yes please say why.

1. possibly
2. yes = reflection/understanding which improves safety
3. no
4. yes.
5. yes. If you can improve learning and therefore have more knowledge then your work practice should be improved.
6. yes. understanding learning enables efficient teaching and retaining information
7. yes. Not sure.
8. no idea – but if we improve adult learning problems may be more identifiable
9. no
10. yes it should help us to teach more effectively
11. yes learning safety measures teaching
12 yes – understanding how to learn can result in a more effective response to reflecting on adverse incidents
13. yes can tailor information given so make people understand
14. no
15. no
16. Yes
17. yes. We learn by the carrot and the stick. Both of which are effective both of which have drawbacks.
18. not sure
19. yes especially through small group discussion and sharing information e.g. via departmental meetings
20. yes. Help learning which improves the above statement.

General analysis

N= 13 yes

N= 3 not sure/don't know 1, 8 , 18

N= 4 no 3, 9, 14, 15

Q.3. Do you think a learning culture contributes to a safety climate? If you have answered yes please say why.

1. yes near misses and learning from it.
2. yes, learning cultures encourage discussion and thinking
3. yes, allows time to be programmed to discuss issues
4. yes
5. improved education should lead to improved safety.
6. a learning culture and that is a positive experience will enhance what is learnt and retained and then used in practice
7. yes. knowledge empowers us and makes us smarter, less callous and obviously safer.

8. yes – hopefully through education of staff problems can be identified
9. yes you are always improving your practice
10. yes
11. yes more aware of mistakes
12. yes – to effectively learn from mistakes positively contributes towards a safety culture
13. yes. Then people open to change and how to do this
14. no
15. yes – provides background for ongoing self directed learning
16. yes
17. yes same as q.1
18. yes, positive v negative
19. yes if it is allocated time for everyone
20. yes.

General analysis

Yes = N= 19

No = N=1 (14)

Post teaching intervention
Could you please answer the following questions.

Q1. Do you think understanding how things go wrong can contribute towards a safety climate? If you have answered yes please say why.
1. yes but need resources to implement findings or pointless exercise. Use of near misses can reduce incidence of problems.
2. yes – reflection of analysis of mistakes reduces risk
3. yes as previous
4. yes
5. see over
6. yes understanding how things go wrong can give a positive outcome of learning to both the person who made or was involved in the mistake and those learning about the mistake and therefore avoid repeating the same mistake
7. yes openness and awareness of problems create safety in the system
8. yes if you understand how things go wrong you can identify all factors contributing to the event – and change them.
9. yes. You can get it right next time.
10. yes it helps to avoid repeating the same mistake
11. yes, you can predict them but too negative may worsen the situation
12. yes, through understanding and reflection we learn from errors to improve safety climate
13. yes. Once identified can put systems into place to correct them, more people aware of potential problems and how to correct them
14. yes as above
15. yes – my actions then may prevent things going wrong in the future if I know what to address.
16. yes
17. yes. I am a small piece of swiss cheese I must shrink my holes
18. yes, know which things to write incident forms about and also when to increase awareness of errors or potential for errors
19. yes awareness of evolving accidents
20. yes. Improved skills/awareness. Improved propagation of knowledge and increased insistence on safer working environments.

General analysis
Yes N= 20
Same pre and post

Q.2. Do you think understanding how we learn can contribute towards a safety climate? If you have answered yes please say why.
1. possibly, but need resources to allow time to do it adequately to benefit from it. Also no need to deconstruct or formalise it with nonsensical new words....turns most doctors off.

2. yes positive learning improves knowledge and enjoyment
3. no. we all learn at different speeds and ways and cannot be pigeon holed. Giving time and culture to learn as approved to exact teaching method more important!
4. yes
5. see over
6. yes. understanding how we learn enables us to direct learning and teaching more efficiently and effectively and therefore improve the safety climate
7. yes know your strengths and limitations
8. yes – by sharing our experiences of events with others- the same mistakes are less likely to be made
9. possibly. Though the knowledge is still used whatever the circumstances that you learnt it in
10. yes, it makes it more effective.
11. yes if learn in a positive way you can extend this to working practice
12. Yes understanding how we learn can lead to deeper knowing and appreciation of how to create a safer climate.
13. yes. Need to gain information in way that we can remember it so will actually use again.
14. no – not how we learn particularly
15. yes – concentrate on <u>these</u> aspects first to encourage learning + identification of risk factors. Currently unlikely to speak up for fear of persecution.
16. yes
17. yes mustn't blame people.
18. yes positive learning encourages good behaviour as well discouraging bad behaviour/activities
19. yes. Providing learning culture becomes positive + less threatening when things go wrong.
20. yes improves learning itself and therefore the above.

<u>General analysis</u>
Yes – N=16 (now includes 8 + 18 from don't know and 15 from no)
Possibly/don't know = N= 2, (includes 9 from no)
No N= 2 still 3, 14

Q.3. Do you think a learning culture contributes to a safety climate? If you have answered yes please say why.
1. yes, but like everything it has to be properly resourced which means devoting time in order to develop it.
2. yes, positive learning cultures can and do, though it is often not widespread and this means finding a place where you can learn. It can be hit and miss.
3. yes, it does it can contribute in a positive or a negative way depending on the culture.
4. yes
5. yes a learning culture provides the learning environment in which we are educated..
6. yes. ..that depends on the learning culture if it is a positive culture safety should improve.
7. yes it does but if it is a blame culture in which we learn then I would suggest this has a detrimental effect on the safety climate.
8. yes and it also enables us to support our staff.
9. yes as it gives you the right working environment in which you can improve what you are doing.
10. yes it does
11. yes , it means we can learn lessons without fear

12. yes – if the culture is positive and we are mutually supportive then we can learn from mistakes we make
13. yes. A positive learning culture that would embrace learning from events that have had adverse consequences as well as positive consequences would be a fairer system.
14. no.
15. yes – it a positive learning culture would do something to remove the pervasive blame culture in which everyone suffers
16. yes.
17. yes I think so if it were a no blame learning culture
18. yes, see previous
19. yes as long as everyone is committed and serious about this or it we will just say have no time to do this.
20. yes.

General analysis
Yes N= 19
No N=1 (same 14)

Qiqa scoring
In order of preference, which do you think would contribute towards a positive learning culture? (1 = most preferred 4 = least preferred)

Root Cause Analysis	3,4,4,2, 4, 3, 4,3,2,2, 4,1,3,3,3,4,0,3,4,3
Failure Modes Events Analysis	4,3,3,1,2,2,1,4,3,3,3, 3,2,4,4,0,2,3,2
Quality Improvement through Questioning and Analysis	2,1,2,3,3,1,2,2,4,1,1, 2,4,2, 1,3, 2, 0,1,1,4
Contextual learning (how to)	1,2,1,4,1,4,3,1,1,4,2, 4,1,1,2,1,0,4,2,1

APPENDIX 6 B QIQA PHASE II

QIQA provides an opportunity to 'dual' report incidences in which there were/are opportunities for learning. Please tell us in your own words about where; A) you learned from something that had adverse consequences, then B) from something where you have learned from something without adverse consequences. Please be assured that all information remains anonymous and confidential; participation is purely voluntary and you are able to withdraw at any time.

A)

1. should have intubated the 6year old kid I did 4 months ago earlier.
2. gave a higher concentration of drug than intended
6. gave wrong blood to patients. Wrong name on blood in theatre. No-one knew patient's name in theatre- emergency procedure.
8. allowed haemabate to be given to a GA LSCS for bleeding who had a v. mild asthma ...but not mild enough
11. no value on paediatric T piece circuit for scavenging
12. accepted surgeon (junior) opinion that ..for dental extraction was ok – actually complicated extract and obstructed – needed ETT. Delayed operation.
13. As SHO saw patient for appendicectomy (young and fit) didn't assess airway adequately. –said could intubate- ventilate – laryngospasm.
14. drug error of antibiotic to an eleven year old child. 4X recommended dose was administered, brief low BP, rash, no long term adverse effects. Difficult pos op encounter with angry mother.
18. used a recognised type of anaesthetic but patient was inappropriate for it and surgery. No adverse outcomes but left uncomfortable until the procedure was complete and patient unharmed.
20. extubated too early.

B)

1. managed first 'big' cases solo well.
2. performed a dense regional block – allowing surgery to be performed on a very sick patients safely

6. managed case on table on own who was very sick (with telephone discussion with consultant)
8. performing a nice TIVA/axillery block to lady who had severe pain = pain free for 12 hours and no adverse symptoms
11. successful difficult intubation
12. safely asses that ETT needed and intubated safely before ...on sub-satisfactory airway.

13. did a whole day case list the other day – everything worked – no-one took ages to wake up/no-one was sore/ no PONV in spite of not all being easy patients.
14. thorough pre- op assessment and good patient communication made patient and surgeon realise that the operation was unnecessary.
18. reassessing a patient for inappropriate surgery by appropriate grade of surgeon. Asking for reassessment – got senior opinion – improved the care of the patient.
20. place a difficult epidural for a laparotomy in a higher risk COPD patient although it was delaying the list

Additional information

1. I find it difficult to think of something 'worthy'
2. this felt very rewarding
6. exposes differences of how I learnt in each instance. The first did not feel good
11. opportunity to say what went right is a good mutual pat on the back with surgeons
13. quite nice to remark that sometimes it all works!
14. do I feel good? Not particularly.
18. I feel good and buoyed by acknowledging what I have done well.

APPENDIX 6C STUDENT PROFILES

Q1. Do you think understanding how things go wrong can contribute towards a safety climate? If you have answered yes please say why.
Q.2. Do you think understanding how we learn can contribute towards a safety climate? If you have answered yes please say why.
Q.3. Do you think a learning culture contributes to a safety climate? If you have answered yes please say why.

Student 1

1. yes – as good analysis of case is shown
1. yes **but need resources** to implement findings or pointless exercise. Use of near misses can reduce incidence of problems.
1. possibly
1. possibly, **but need resources** to allow time to do it adequately to benefit from it. Also no need to deconstruct or formalise it with nonsensical new words....turns most doctors off.
1. yes near misses and learning from it.
1. yes, but like everything it **has to be properly resourced** which means devoting time in order to develop it.

qiqa score = 3421 (r.c.a) (f.m.e.a) (q.i.qa) (contextual)

Phase II

1. should have intubated the 6year old kid I did 4 months ago earlier.
2. managed first 'big' cases solo well.
3. I find it difficult to think of something 'worthy'

Pre teaching intervention original frame	Post teaching intervention
Yes X No	Yes X No
Positive X Negative	Positive **Negative X**
Single X Double Triple	Single X Double Triple
Original frame	**Re- frame** mentions barriers to learning

Learning yes	Learning yes
Change	Change
Wider	Wider

Student 2

2. yes analysis of incidents can change systems and reduce risk of further harm
2. yes – reflection of analysis of mistakes reduces risk
2. yes = reflection/understanding which improves safety
2. yes positive learning improves knowledge and enjoyment
2. yes, learning cultures encourage discussion and thinking
2. yes, positive learning cultures can and do, though it is **often not widespread** and this means finding a place where you can learn. **It can be hit and miss.**

qiqa score= 4312 (r.c.a) (f.m.e.a) (q.i.qa) (contextual)

Phase II

1.gave a higher concentration of drug than intended
2. performed a dense regional block – allowing surgery to be performed on a very sick patients safely
3. this felt very rewarding!

Pre teaching intervention original frame	Post teaching intervention
Yes X No	Yes X No
Positive X Negative	Positive X Negative X
Single Double X Triple	Single Double X Triple
Original frame	**Re- frame evidence of barriers**

Learning yes	Learning yes
Change yes	Change yes
Wider yes	Wider yes

Student 3

3. yes, only then can you institute changes
3. yes as previous
3. no
3. no. we all learn at different speeds and ways and cannot be pigeon holed. Giving time and culture to learn as approved to exact teaching method more important!
3. yes, allows time to be programmed to discuss issues
3. yes, it does it can contribute in a positive or a negative way depending on the culture.

qiqa score = 4321 (r.c.a) (f.m.e.a) (q.i.qa) (contextual)

Pre teaching intervention original frame	Post teaching intervention
Yes X No X	Yes X No X
Positive X Negative	Positive X Negative
Single X Double Triple	**Single** X Double Triple
Original frame	Same frame

Learning yes	Learning yes
Change yes	Change
Wider	Wider

Student 4

4. I suppose so.
4. yes
4. yes
4. yes
4. yes
4. yes

qiqa score = 2134 (r.c.a) (f.m.e.a) (q.i.qa) (contextual)

Pre teaching intervention original frame	Post teaching intervention
Yes X No	Yes X No
Positive X Negative	Positive X Negative
Single X Double Triple	Single X Double Triple
Original frame	Same frame. *Single type response assumed if no elaboration.

Learning yes	Learning yes
Change	Change
Wider	Wider

Student 5

5. yes. Everyone learns by experience of what has happened whilst working.
5. see over
5. yes. If you can improve learning and therefore have more knowledge then your work practice should be improved.
5. see over
5. improved education should lead to improved safety.
5. yes a learning culture provides the learning environment in which we are educated..
Qiqa score = 4231 (r.c.a) (f.m.e.a) (q.i.qa) (contextual)

Pre teaching intervention original frame	Post teaching intervention
Yes X No	Yes X No
Positive X Negative	Positive X Negative
Single X Double Triple	Single X Double Triple
Original frame	same frame

Learning yes	Learning yes
Change yes	Change yes
Wider	Wider

Student 6

6. yes. learning from mistakes enables the same mistakes to be avoided. Seeing where the errors occurred enable **changing the system and** avoiding the same mistake
6. yes understanding how things go wrong can give a positive outcome of learning to both the person who made or was involved in the mistake and those learning about the mistake and therefore avoid repeating the same mistake
6. yes. understanding learning **enables efficient teaching and retaining information**
6. yes. understanding how we **learn enables us to direct learning and teaching more efficiently and effectively and therefore improve the safety climate**
6. a learning culture and that is a positive experience will enhance **what is learnt and retained and then used in practice**
6. yes. ..that depends on the learning culture if it is a positive culture safety should improve.
Qiqa score = 3214 (r.c.a) (f.m.e.a) (q.i.qa) (contextual)
Phase II
1. gave wrong blood to patients. Wrong name on blood in theatre. No-one knew patient's name in theatre- emergency procedure.
2. managed case on table on own who was very sick (with telephone discussion with consultant)

Pre teaching intervention original frame	Post teaching intervention
Yes X No	Yes X No
Positive X Negative	Positive X Negative
Single Double Triple X	Single Double Triple X
Original frame	**Re – frame change**

Learning yes	Learning yes
Change	Change yes
Wider	Wider

Student 7

7. yes learn from your mistakes, **you feel bad and do not do it again**!
7. yes **openness and awareness of problems create safety in the system**
7. yes. Not sure.
7. yes know your strengths and limitations
7. **knowledge empowers us and makes us smarter, less callous and obviously safer.**
7. yes it does but **if it is a blame culture in which we learn then I would suggest this has a detrimental effect on the safety climate**.

Qiqa score = 4123 (r.c.a) (f.m.e.a) (q.i.qa) (contextual)

Pre teaching intervention original frame	Post teaching intervention
Yes X No	Yes X No
Positive Negative X	Positive X Negative X
Single X Double Triple	Single Double X Triple
Original frame	**Re- frame** double and barriers identified

Learning yes	Learning yes
Change	Change
Wider	Wider yes

Student 8

8. yes – through identification of risk factors change can be implemented.
8. yes **if you understand how things go wrong you can identify all factors contributing to the event – and change them.**
8. no idea – **but if we improve adult learning problems may be more identifiable**
8. yes **– by sharing our experiences of events with others- the same mistakes are less likely to be made**
8. yes **– hopefully through education of staff problems can be identified**
8. yes and it also enables us to support our staff.

Qiqa score = 3421 (r.c.a) (f.m.e.a) (q.i.qa) (contextual)

Phase II

1. allowed haemabate to be given to a GA LSCS for bleeding who had a v. mild asthma …but not mild enough
2. performing a nice TIVA/axillery block to lady who had severe pain = pain free for 12 hours and no adverse symptoms

Pre teaching intervention original frame	Post teaching intervention
Yes X No	Yes X No
Positive X Negative X	Positive X Negative
Single Double X Triple	Single Double X Triple
Original frame	**Re- frame barriers identified**

Learning yes	Learning yes
Change yes	Change yes
Wider yes	Wider yes

Student 9

9. yes
9. yes. You can get it right next time.
9. no
9. yes possibly. **Though the knowledge is still used whatever the circumstances that you learnt it in** (but how is it used?)
9. yes you are always improving your practice
9. yes as it gives you the right working environment in which you can improve what you are doing.

Qiqa score = 2341 (r.c.a) (f.m.e.a) (q.i.qa) (contextual)

Pre teaching intervention original frame	Post teaching intervention
Yes X No X	Yes X No
Positive X Negative	Positive X Negative
Single X Double Triple	Single X Double Triple
Original frame	**Re- frame** how is knowledge used?

Learning yes	Learning yes
Change yes	Change yes
Wider	Wider

Student 10

10, yes it makes you aware of potential risks and they can be changed
10. yes it helps to avoid repeating the same mistake
10. yes it should help us to teach more effectively
10. yes, it makes it more effective.
10. yes
10. yes it does

Qiqa score = 2314 (r.c.a) (f.m.e.a) (q.i.qa) (contextual)

Pre teaching intervention original frame	Post teaching intervention
Yes X No	Yes X No
Positive X Negative	Positive X Negative
Single X Double X Triple	Single X Double Triple
Original frame	**Re-frame** how does it make you effective?

Learning yes	Learning yes
Change yes	Change
Wider yes	Wider

Student 11

11. yes- pre empts mistakes
11. yes, you can predict them **but too negative may worsen the situation**
11. yes learning safety measures teaching
11. yes **if learn in a positive** way you can extend this to working practice
11. yes more aware of mistakes
11. yes , it means we can **learn lessons without fear**

Qiqa score= 4321 (r.c.a) (f.m.e.a) (q.i.qa) (contextual)

Phase II
1. no value on paediatric T piece circuit for scavenging
2. successful difficult intubation
3. opportunity to say what went right is a good mutual pat on the back with surgeons

Pre teaching intervention original frame	Post teaching intervention
Yes X No	Yes X No
Positive X Negative	Positive X Negative X
Single X Double Triple	Single X Double Triple
Original frame	**Re-frame barriers identified**

Learning yes	Learning yes
Change	Change
Wider	Wider

Student 12
12. yes having an understanding can **lead to appreciation of adverse events** and possible preparation
12. yes, **through understanding and reflection we learn from errors to improve safety climate**
12 yes – understanding how to learn can result in a more effective response to reflecting on adverse incidents
12. Yes **understanding how we learn can lead to deeper knowing and appreciation of how to create a safer climate**.
12. yes – to effectively learn from mistakes positively contributes towards a safety culture
12. yes – if the culture is positive and we are mutually supportive then we can learn from mistakes we make
Qiqa score = 1324 (r.c.a) (f.m.e.a) (q.i.qa) (contextual)
Phase II
1. accepted surgeon (junior) opinion that ..for dental extraction was ok – actually complicated extract and obstructed – needed ETT. Delayed operation.
2. safely asses that ETT needed and intubated safely before ...on sub-satisfactory airway.

Pre teaching intervention original frame	Post teaching intervention
Yes X No	Yes X No
Positive X Negative	Positive X Negative
Single X Double X Triple	Single Double X Triple
Original frame	**Re-frame** to double

Learning yes	Learning yes
Change	Change yes
Wider	Wider yes

Student 13
13. yes. **ID problem can then institute changes to improve**
13. yes. Once identified can **put systems into place to correct them**, more people aware of potential problems and how to correct them
13. yes can tailor information given so **make people understand**

13. yes. Need to gain information in way that we can remember it **so will actually use again**
13. yes. Then **people open to change and how to do this**
13. yes. A positive learning culture that would embrace learning from events that have had adverse consequences as well as positive consequences **would be a fairer system**.
Qiqa score = 3241 (r.c.a) (f.m.e.a) (q.i.qa) (contextual)
Phase II
1. As SHO saw patient for appendicectomy (young and fit) didn't assess airway adequately. –said could intubate- ventilate – laryngospasm.
2. did a whole day case list the other day – everything worked – no-one took
3. quite nice to remark that sometimes it all works!

Pre teaching intervention original frame	Post teaching intervention
Yes X No	Yes X No
Positive Negative X	Positive Negative X
Single X Double X Triple	Single Double X Triple
Original frame	**Re-frame** to double barriers identified

Learning yes	Learning yes
Change yes	Change yes
Wider	Wider yes

Student 14
14. yes reduce 'holes' in swiss cheese model
14. yes as above
14. no
14. no – not how we learn particularly
14. no
14. no.
Qiqa score = 3421 (r.c.a) (f.m.e.a) (q.i.qa) (contextual)
Phase II
1. drug error of antibiotic to an eleven year old child. 4X recommended dose was administered, brief low BP, rash, no long term adverse effects. Difficult post op encounter with angry mother.
2. thorough pre- op assessment and good patient communication made patient and surgeon realise that the operation was unnecessary.
3. do I feel good? Not particularly.

Pre teaching intervention original frame	Post teaching intervention
Yes X No X	Yes X No X
Positive ? Negative	Positive ? Negative
Single X Double Triple	Single X Double Triple
Original frame	Same frame

Learning yes	Learning yes
Change	Change
Wider	Wider

Student 15

15. yes- may think more about what can go wrong with each of my actions + consequences
15. yes – my actions then may prevent things going wrong in the future if I know what to address.
15. no
15. **yes – concentrate on <u>these</u> aspects first to encourage learning + identification of risk factors. Currently unlikely to speak up for fear of persecution.**
15. yes – provides background for ongoing self directed learning
15. **yes –if it is a positive learning culture would do something to remove the pervasive blame culture in which everyone suffers**

Qiqa score = 3421 (r.c.a) (f.m.e.a) (q.i.qa) (contextual)

Pre teaching intervention original frame			Post teaching intervention		
Yes X	No X		Yes X	No	
Positive	Negative X		Positive	Negative X	
Single X	Double	Triple	Single X	Double	Triple
Original frame			**Re- frame** agrees and barriers identified		

Learning yes	Learning yes
Change	Change yes
Wider	Wider yes

Student 16

16. yes
16. yes
16. Yes
16. yes
16. yes
16. yes.

Qiqa score = 4321 (r.c.a) (f.m.e.a) (q.i.qa) (contextual)

Pre teaching intervention original frame			Post teaching intervention		
Yes X	No		Yes X	No	
Positive ?	Negative		Positive ?	Negative	
Single X	Double	Triple	Single X	Double	Triple
Original frame			Same frame		

Learning yes	Learning yes
Change	Change
Wider	Wider

Student 17

17. yes. It is the old saying 'learn from your mistakes'
17. yes. I am a small piece of swiss cheese I must shrink my holes
17. yes. **We learn by the carrot and the stick. Both of which are effective both of which have drawbacks**
17. yes **mustn't blame people**.
17. yes same as q.1
17. yes I think so **if it were a no blame learning culture**

Qiqa score = 0000 (r.c.a) (f.m.e.a) (q.i.qa) (contextual)

Pre teaching intervention original frame	Post teaching intervention
Yes X No	Yes X No
Positive Negative X	Positive Negative X
Single X Double Triple	Single X Double Triple
Original frame	Same frame **barriers identified**

Learning yes	Learning yes
Change	Change
Wider	Wider

Student 18

18. yes know or see things go wrong can compensate for them

18. yes, know which things to write incident forms about and also when to increase awareness of errors or potential for errors

18. not sure

18. yes **positive learning encourages good behaviour as well discouraging bad behaviour/activities**

18. yes, positive v negative

18. yes, see previous

Qiqa score = 3214 (r.c.a) (f.m.e.a) (q.i.qa) (contextual)

Phase II

1. used a recognised type of anaesthetic but patient was inappropriate for it and surgery. No adverse outcomes but left uncomfortable until the procedure was complete and patient unharmed.

2. re-assessing a patient for inappropriate surgery by appropriate grade of surgeon. Asking for reassessment – got senior opinion – improved the care of the patient.

3. I feel good and buoyed by acknowledging what I have done well.

Pre teaching intervention original frame	Post teaching intervention
Yes X No ?	Yes X No
Positive X Negative	Positive X Negative
Single X Double Triple	Single X Double Triple
Original frame	same frame

Learning yes	Learning yes
Change	Change
Wider	Wider

Student 19

19. yes. Awareness of crisis evolution so important

19. yes awareness of evolving accidents

19. yes especially through small group discussion and sharing information e.g. via departmental meetings

19. yes. **Providing learning culture becomes positive + less threatening when things go wrong.**

19. yes **if it is allocated time for everyone**

19. yes as long as everyone is committed and serious about this or it **we will just say have no time to do this.**
Qiqa score = 4321 (r.c.a) (f.m.e.a) (q.i.qa) (contextual)

Pre teaching intervention original frame	Post teaching intervention
Yes X No	Yes X No
Positive X Negative	Positive X Negative X
Single Double X Triple	Single X Double Triple
Original frame	**Re- frame** + barriers identified

Learning yes	Learning yes
Change	Change
Wider	Wider

Student 20
20. yes. Preventing problems before they arise. Vigilance.
20. yes. Improved skills/awareness. Improved propagation of knowledge and increased insistence on safer working environments.
20. yes. **Helps learning which improves the above statement.**
20. yes **improves learning itself and therefore the above.**
20. yes.
20. yes
Qiqa score = 3241 (r.c.a) (f.m.e.a) (q.i.qa) (contextual)
Phase II
1. extubated too early.
2. place a difficult epidural for a laparotomy in a higher risk COPD patient although it was delaying the list

Pre teaching intervention original frame	Post teaching intervention
Yes X No	Yes X No
Positive X Negative	Positive X Negative
Single X Double Triple	Single X Double Triple
Original frame	same frame

Learning yes	Learning yes
Change yes	Change yes
Wider	Wider

Data analysis
Compare
Phase I
Changes in responses pre and post y/n/dn
Content of answers pre and post
Phase II
What sort of learning? Generally.

Pre teaching intervention original frame	Post teaching intervention
Yes No	Yes No
Positive Negative	Positive Negative

Single	Double	Triple	Single	Double	Triple

As a student case link answers to each question to example given in phase II.
How does it link to literature? Deep/surface approaches? Culture? Value placed on learning bordeu. Single/double loop. Triple loop.
Recommendations as proof of concept.
Structure of intervention. Structure of questions, those relating to learning for the organisation and those that might be more appropriate for CPD to form part of wider individual/organisational learning.

Re-frame categories

Single to double to triple
Positive – negative (are more barriers identified in this group? If so does this indicate learning environment facilitates sharing which includes identifying barriers?)
Negative – positive
Compare those who did phase II with those who didn't are any of the responses different?

APPENDIX 6D: PEER OBSERVATIONS STUDENT / PARTICIPANTS

Form 1 For the teacher being observed

Please complete this page and discuss it with the observer before the session

Name [redacted]	LHB/Trust X NHS Trust	Who are you teaching Anaesthetic Specialist Registrars
Type of activity, eg lecture, workshop Small group teaching	Topic(s) Why things go wrong.	Number of students 20
Observer Dee	Session length 45 minutes	Observation hours mins 45 minutes

What are the objectives planned for this session (eg knowledge and understanding, key skills, cognitive skills, and subject specific, including practical/professional skills)?

1. Knowledge and understanding: To discuss the factors that can lead to adverse healthcare events.
To give examples of barriers to adverse healthcare events.

2. Cognitive skills: To demonstrate knowledge of the difference between the person-centred and system view
of error.

3. Subject Specific skills: To constructively criticise factors in the NHS that may lead to the occurrence of
adverse healthcare events.

4. Key skills: To demonstrate knowledge of latent conditions and active failures, and to illustrate this with
examples.
To formulate plans for how this knowledge may be used to anticipate why adverse healthcare
events happen.

How do you hope these learning objectives will bring about improved risk management in your organisation?

By giving the students examples of the importance of this to them in their everyday practice I anticipate that it will give them a focus for the session and to engage actively with the topic. Their previous experiences of why things go wrong will give them factual material to base the discussion on.

On what particular things would you like feedback?

1. The engagement of the group.

2. The control of the group and directing the discussion to the areas of importance.

APPENDIX 6E: PHASE ONE QIQA PRE / POST QUESTIONNAIRE

Pre teaching

As part of the ongoing research associated with the risk-*e* project we would like to capture some of your thoughts relating to learning and safety. This data will help us to understand what effect the teaching intervention may have and what improvements may be required. Participation in this (as a student of the teaching intervention and in answering questions relating to the teaching intervention) is undertaken on a voluntary basis. You are free to participate in either or both activities and to withdraw from all activities at any time. All data will be anonymised and remain confidential. You are invited to ask questions about the teaching intervention from Dee Jones (Lead academic for the risk-*e* project) who can be contacted on dee.jones@bangor.ac.uk The open ended questions are divided into pre and post teaching intervention, please supply as much information as you feel necessary. Many thanks for your help

Q1. Do you think understanding how things go wrong can contribute towards a safety climate? If you have answered yes please say why.

Q.2. Do you think understanding how we learn can contribute towards a safety climate? If you have answered yes please say why.

Q.3. Do you think a learning culture contributes to a safety climate? If you have answered yes please say why.

Post teaching

Could you please answer the following questions.

Q1. Do you think understanding how things go wrong can contribute towards a safety climate? If you have answered yes please say why.

Q.2. Do you think understanding how we learn can contribute towards a safety climate? If you have answered yes please say why.

Q.3. Do you think a learning culture contributes to a safety climate? If you have answered yes please say why.

In order of preference, which do you think would contribute towards a positive learning culture? (1 = most preferred 4 = least preferred)

Root Cause Analysis	
Failure Modes Events Analysis	
Quality Improvement through Questioning and Analysis	
Contextual learning (how to)	

If you would like to discuss or be further involved in the evaluation of teaching interventions please contact: Dee Jones, Research Fellow, University of Wales, Bangor using dee.jones@bangor.ac.uk or telephone 01248 388087 or write your contact details below.

Name
Contact

APPENDIX 6F: PHASE TWO QIQA DATA COLLECTION TOOL

QIQA: Part Two

Thank you for agreeing to participate in part two of this learning event. Imagine you now have the opportunity to work within a new 'dual' reporting system that affords prospects for learning and gives you the opportunity to record two things at the same time.

Under this new system you are required to *'think about an aspect of your practice that has had good outcomes'* and tell me:

A) something you have learned from an incident that had adverse consequences

B) something you have learned from an incident that had no adverse consequences

Finally could you tell me your thoughts on being given the chance to do this?

APPENDIX 6G DEVELOPING LEARNING CULTURES AROUND ADVERSE INCIDENTS (WAG SESSIONS)

With the Welsh public sector facing the challenge of achieving financial targets of £600,000,000 value for money improvements (1) all Welsh Assembly Government funded public bodies should have a keen eye on finding ways to enhance performance and maintain quality within what are limited resources. The potential for financial improvements (intended to be redirected to front line services) to be swallowed up by public service on adverse incident expenditure (from complaints handling, compensation payments and staff sick time) in organisations with fewer resources is all too real. The situation could be compounded in organisations that do not have a positive learning culture from these experiences, causing the likelihood for repetition of incident and increase in cost.

Organisations that espouse positive learning experiences around adverse incidents but actually operate in a blame culture, risk losing a significant source of knowledge that could contribute to quality and performance across the whole of the organisation. A step forward to changing this is to adopt *systems thinking* (2) in organisational learning as this enables us to see how the actions of an individual/ department/ directorate impacts (either positively or negatively) on the quality and performance of another. Systems thinking enables us to move out of the 'silo mentality' that inhibits shared learning and can be devastating for those in the silo labelled 'poor performers'. Poor performance can be the result of many factors, not least because learning from adverse incidents (or part of) may be lost if there is more of a blame culture and less of a learning culture in practice. The whole organisation can learn and improve performance by learning from the experiences of others (including 'poor performers'). In order that valuable knowledge is not lost and organisations develop and grow, organisational learning needs to address any blame culture that exists and develop a positive learning culture around adverse incidents.

Learning from adverse incidents primarily focuses on either what has gone wrong using Root Cause Analysis (RCA) or what may go wrong using Failure Modes Events Analysis (FMEA). A method developed following years of research and freely available to the public sector is the Quality Improvement through Questioning and Analysis (QIQA) approach. QIQA is aimed at providing staff with a way in which they can explore current practice and create an environment in which they can celebrate and share what they are doing right and get support for when things go wrong. The QIQA approach incorporates the following:

1. endorsement from the top (see DOH example Medical Errors) and suitable role models to 'walk the talk' (key learning change agents)
2. the methods and methodology are part of in-house education for all staff
3. positive reinforcement is provided through reward and recognition of change in practice
4. existing reporting systems are used to both embed and provide the structure required for unbroken practices (see example form below)

The QIQA educational package incorporates:

- aspects of how individuals and organisations learn (see ppt, video clips and handouts)
- how to develop a positive learning culture (see example below)

- contextual application to the area in the organisation that needs to change (applying learning to practice through small projects and team work)
- experiential aspects (includes unlearning and relearning, see example role play) using creative techniques (i.e. see example 6 hats or random pictures/words)
- the QIQA model of re-framing incident reporting (see below)

QIQA takes the individual through a process of looking for positive improvements and innovation and sharing findings with others. QIQA uses reflection, reflexivity and creative thinking as the basis for individuals to question what they are doing, why they are doing it and through a process of analysis identify if what they are doing is the best way or whether improvements can be made. It represents a significant mind shift away from what has gone wrong and what can go wrong to bringing staff towards identifying what they are doing right.

Conditions and actions for organisational change

- The need for change has to be recognised.
- A strategy should be developed that identifies key learning change agents.

Organisational systems have to be made ready to accept change.

Example Method for creating a positive learning culture

Education/training activities

Discussion/debate

Topic: *What do you associate with the term 'adverse events'?*

This requires a skilled facilitator/educator.
Have open discussion, ask for volunteer to scribe and/or lead session for a while. Hand over control of session to group to engender contribution and responsibility. Ask them to compare answers and possibly identify any positive learning. Ask them how they would like to take this forward. Ask them to action plan for progress.

Learning objective
To encourage participants to discuss and question their perceptions and beliefs about adverse incidents.

Learning outcome
Participants will be able to understand the origin of the culture that surrounds adverse incidents
Participants will be able to identify and discuss their part to play in the culture that surrounds adverse events
Participants will be able to compare their individual and organisational practices against those of other individuals and industries.

QIQA : re-framing approach

The QIQA approach requires individuals to be reflective and reflexive in their thinking about work based practices. It is a deep approach to learning and requires us to question our assumptions, mindset and mental models. It is a simple approach that allows us to

explore opportunities for innovative practice and enables us to make explicit tacit knowledge and ways of doing so that we can share this with others.

The process involves the individual consciously going through the following:

Stage one

- What did I do?
- What am I doing?

Stage two

- How did I do it?
- How am I doing it?

Stage three

- Was there any way I could have done it better?
- Is there any way I can do this better?

Red = reflective
Blue = reflexive

Initially individuals may want to go through a process of note-taking or keeping a journal, this is helpful for making tacit knowledge explicit (and so shareable) and for developing the sort of routineised practice that helps bring about behavioural change.

If the individual arrives at a mental block at stage three then use creative thinking techniques to move forward (i.e. see random picture/six hats exercises below). This process can be introduced formally at the start of any training session and related to the individual's current work situation and/or can be used as part of role play activities so that staff use this as a mechanism for critiquing their own performance.

One of the desired learning outcomes is that through practice and reinforcement staff become used to this way of thinking and use the creative thinking techniques when back at the workplace.

The whole process needs to be supported by a system of positive learning through reporting, if this is not in place then practice will be fragmented and not sustained.

Evidence of application to practice. Use this alongside existing organisational reporting system

QIQA: example of reporting form

What have I done today that went really well?	What have I done today that could be improved upon?	Report to designated organisational learning change agent (s) XYZ
	Action points: • • • •	To: **Date reported** **Feedback received** **Date received**

APPENDIX 6G: WSLI FOR ADVERSE INCIDENTS

Domain	Specific descriptors	Indicators	Please indicate on the following scale the level of competency
Cognitive	Means demonstrating meta-cognition in relation to one's own (and others) learning from adverse incidents.	Learners demonstrate ability to critically reflect upon adverse incidents through which they are able to: recognise/differentiate/evaluate own (and others) underlying taken-for-granted assumptions and locate them within a schemata/frame utilised when learning from an adverse incident.	Not competent Competent 1 2 3 4 5 6 7
		Learners are able to capture/demonstrate/illustrate symbolically (visual images or metaphors) and provide an example of schemata identification and change (of self and others).	Not competent Competent 1 2 3 4 5 6 7
		Learners are able to distinguish learning strategies and theories of action adopted by themselves (and others) when learning from an adverse incident.	Not competent Competent 1 2 3 4 5 6 7
		Learners are able to identify changes in thinking/learning about adverse incidents (in self and others) using dialogue/narrative to make explicit and evidence 'bleeding out' from assimilation to accommodation of schemata.	Not competent Competent 1 2 3 4 5 6 7
		Learners are able to express creative thinking evidenced through own 'What if' type questioning when analysing /reflecting on adverse incidents.	Not competent Competent 1 2 3 4 5 6 7
		Learners are able to evaluate the nature of environmental/cultural influence on adverse incidents (pos/ neg) and suggest improvement.	Not competent Competent 1 2 3 4 5 6 7
Affective	Means demonstrating an appreciation of the attitudes (of self and others) that influence learning from adverse incidents	Learners are able to evidence collaborative learning using learning systems.	Not competent Competent 1 2 3 4 5 6 7
		Learners are able to review own and others learning from adverse incidents and express learning in an actionable plan.	Not competent Competent 1 2 3 4 5 6 7

		Learners are able to distinguish appropriateness of organising to execute confirmatory (low risk routine) and organising to learn (dynamic high risk) responses to adverse incidents.	Not competent Competent 1 2 3 4 5 6 7
		Learners are motivated to learn from adverse incidents evidenced by directing and locating learning opportunities for themselves and others.	Not competent Competent 1 2 3 4 5 6 7
		Learners are empathetic to the others who are learning from an adverse event (colleagues, patients and carers) observed through the active engagement in collaborative learning and team work.	Not competent Competent 1 2 3 4 5 6 7
		Learners are 'present' and participate at learning from adverse incident opportunities.	Not competent Competent 1 2 3 4 5 6 7
		Learners are able to discern their own (and others) attitudes to learning from adverse incidents.	Not competent Competent 1 2 3 4 5 6 7
		Learners are able to distinguish their own (and others) constructive tensions associated with learning from adverse incidents and manage dissonance.	Not competent Competent 1 2 3 4 5 6 7
		Learners are able to identify and create a safe psychological environment for themselves (and others) to manage conflict/ tensions when learning from adverse incidents.	Not competent Competent 1 2 3 4 5 6 7
		Learners become/are proactive about learning from adverse incidents and through an enabling attitude encourage others to be the same.	Not competent Competent 1 2 3 4 5 6 7
		Learners advocate and act as role model for others to learn from adverse incidents,	Not competent Competent 1 2 3 4 5 6 7
		Learners embrace learning from mistakes and experimentation (willingness to take risks).	Not competent Competent 1 2 3 4 5 6 7
		Learners appreciate/cultivate inter-dependence with others and emphasise team learning from adverse incidents.	Not competent Competent 1 2 3 4 5 6 7

Psychomotor	Means an observable change in performance because one has learned from an adverse incident, includes absence of an unwanted act.	Learners are able to demonstrate acquisition of skill ability from simple action to co-ordinated synchronised movements, evidenced through practice and repetition of skill required to reduce likelihood of occurrence/recurrence of adverse incident).	Not competent Competent 1 2 3 4 5 6 7
		Learners participate in (or conduct) interactive guided learning events using imagery, physical material, rehearsal, trial and error and constructive feedback.	Not competent Competent 1 2 3 4 5 6 7
Interpersonal	Means having the ability to communicate, positively, effectively and supportively with colleagues/patients /carers when learning from an adverse incident.	Learners are able to provide information, share knowledge that may help others learn from an adverse incident.	Not competent Competent 1 2 3 4 5 6 7
		Learners actively seek information/knowledge that will help themselves (and others) learn from an adverse incident.	Not competent Competent 1 2 3 4 5 6 7
		Learners suggest ideas, innovations, improvements that could reduce/prevent adverse incidents.	Not competent Competent 1 2 3 4 5 6 7
		Learners help others to put their own suggestions forward and support others in implementation of suggestions to reduce/prevent adverse incidents	Not competent Competent 1 2 3 4 5 6 7
		Learners encourage and positively reinforce others to become involved in learning from adverse incidents.	Not competent Competent 1 2 3 4 5 6 7
		Learners appropriately challenge others assumptions about learning from adverse incidents and present a differing perspective.	Not competent Competent 1 2 3 4 5 6 7

Learning from Adverse Incidents: Contextual markers (I)

As the nature of learning will be influenced by the context in which one has experienced (or learns from) an adverse incident, these contextual markers are meant to alert the educator/trainer/facilitator to instances that may require an appreciation of what is happening for the learner so a variation in the learning experience may be provided.

I. Where learners have experience of adverse incidents in an environment in which there is a positive learning culture they will be open to working within a team culture, they will responsible for their own (and others) learning from adverse incidents, they will practice open communication with multiple stakeholders, they will be creative, problem solving and look to innovate on how we learn from adverse incidents, they will collaborate and practice in order to be able to perform.

II. Where learners have experience of adverse incidents in a negative learning environment they will seek to blame others for when things go wrong, they will be afraid of exposing themselves to learning opportunities, they will expect punishment and punish others when an adverse incident has occurred, they will practice professional shaming, they will be apathetic and show little motivation, they will be concerned with the 'self', they will have abrasive/poor/ineffective communication skills, they will exclude others who do not fit with their way of being and promote a performance regime.

Learning from Adverse Incidents: Contextual markers (II) Interventions

Learners will have experienced positive and negative contexts, the educator/trainer needs to build on positive learning experiences (of the individual to focus individual learning and of the group so support and role modelling is possible). Where learning episodes trigger memories associated with a positive experience (for example they became motivated to get it right or do better next time, they were supported by peers/organisation, collegiality) or where memories associated with a negative experience (for example fear, shame, guilt, blame, bullying or embarrassment) are triggered these need to be made explicit for the individual (and the group).

The intention (Scharmer, 2009) of the current learning experience (and the learner's part in it) should be made clear to the learners (Gagne, 1985) from the outset, promoting learning from adverse incidents should be done to raise cultural capital and value (Bordeau, 1989). Encourage the learners to stop 'downloading' (Arthur, 1994, Scharmer, 2009) and avoid the *'push-down principle'* (Raths, 2002 p. 237) in which learners adopt strategies that will result in the least cognitive challenge possible, so that you can presence them in the moment of learning. The use of Argyris and Schön's (1978) 'two columns' method (to identify espoused theories and theories in use about learning from adverse incidents) and Socratic dialogue to ask 'what if' type questions, will extend the boundaries of the situation experienced by the learner by enabling an extension of the learners frame (thereby assimilating new knowledge, skills, attitudes into existing schemata). Suggesting a new frame for thinking about learning from adverse incidents will facilitate accommodation of (new knowledge, skills, attitudes) into a new schemata. In order to reduce tensions between assimilation and accommodation (and change in attitudes) it is helpful to locate a 'safe practice' memory so that the learner may distinguish safe and unsafe practice and recognise their own ability to practice safely (see the QIQA study). Educators/trainers can ask the learner to create (re-create/recall (Gagne, 1985)) an adverse incident scenario and talk through events while comparing them to a safe practice scenario. This should act as an internal reward (Gagne, 1985) to encourage the learner to engage (remain engaged) with learning (Biggs, 1987, Ramsden, 1992) from adverse incidents. Learners could reflect on the event (as a group) and engage in dialogue (Shein, 1993) about the event in order to support each other's learning, include it in their knowledge base and subsequentially apply it to their own practice (Gagne, 1985)

Learner contribution

What indicators that are not already included do you think require incorporation into the GLI?

What knowledge would you add to the contextual markers?

What suggestions would you make for interventions?

Educator/Trainer/Facilitator contribution

What indicators that are not already included do you think require incorporation into the GLI?

What knowledge would you add to the contextual markers?

What suggestions would you make for interventions?

APPENDIX 6I: PLAN FOR WLSI:AI

Practitioners/participants

Using a 'change agent' strategy, QIQA should be delivered in an organisation targeting practitioners likely to demonstrate the value or '*positive valance*' (Lewin 1947 p.471) on participation. Positive reinforcement throughout the organisation with early and continued celebration of successes (identified by the practitioners) will determine levels of take-up, critical mass and organisational implementation.

First level take-up will involve clinical and non clinical staff with a responsibility for:

- Investigation of adverse incidents
- Investigation of complaints
- Supporting staff who have been involved in an adverse incident
- Supporting patients/carers who have been involved in an adverse incident
- OL/OD in the organisation
- HR and training in the organisation (including coaching and mentoring)
- Local and national reporting of adverse incidents
- Innovation and change
- IT/e-learning

This is a stepped process, the first wave of change agents are supported to build LC's and take the process forward. Second wave of practitioners/participants

- Front line clinicians
- Administrative and clerical staff
- PAM
- AHP's

Micro	Meso	Macro	Mundo
Me	It	You	Future emergent
Habit of thought downloading	Factual object processed	Empathetic	Generative

Whole Learning Systems: ai (WLS: ai)

WLS: ai shifts the emphasis from 'negative' aspects associated with adverse incidents through a process of re-framing learning. The approach has four phases:

Phase one: (theory/propositional and experiential knowledge)

Session(s) on learning how to learn (frames and learning schemata), learning systems (including WLS: ai), organisational learning, approaches to learning, reflective/ reflexive thinking about adverse incidents (using key questions), AR and project.

Phase two: (practice)

Participants are provided with 'tools' that will enable delivery of WLS: ai and are supported in practice/use. This includes using the Whole Learning System Learning Indicators (WLSLI), searching for 'frame(s)' of positive improvements and innovation on practice, and 'dual reporting' of the learning system

Phase three: (action)
Engagement with the 'dual' reporting/learning system
Phase four: (feedback)
Through staged evaluation and feedback the learning system becomes dynamic, adapting and changing as the learning flows through the organisation.

Whole Learning System Learning Indicators (WLSLI)

These represent indicators, contextual markers, interventions and methods for co-creation that span four learning taxonomies (cognitive, affective, psychomotor and interpersonal) specifically developed for use in learning from adverse incidents.
They can be used on a personal learning basis, in conjunction with the educator/ facilitator, with a coach or mentor or with peers in a LC. They are a dynamic heuristic, based on a constructivist approach to learning, as such the WLSLI are open to feedback and co-creation from participants/users.

Cognitive	Learners are able to capture/demonstrate/illustrate symbolically (visual images or metaphors) and provide an example of schemata identification and change (of self and others).	Competency level
Affective	Learners are able to evidence collaborative learning using learning systems.	Competency level