A Practitioner Researcher perspective on facilitating an open, infinite, chaordic simulation.

Learning to Engage with Theory
while
Putting Myself Into Practice

A thesis submitted in fulfilment
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For the Degree of
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by
Elyssebeth Leigh

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Dedication

As I began writing this dissertation my husband, Mick Leigh, died. In 32 years of life together he supported me through 4 tertiary study programs, while not having a high opinion of it as a way of building knowledge, preferring (if only I had known its name) to grow his 'working knowledge'. Our discussions about the merits of all forms of learning influenced the final shape of this dissertation. I miss him and still learn from him.

Acknowledgements

While completing this dissertation I re-learned two vital skills—asking for help, and saying 'thank you'. The final document must be—and is—mine alone, but completing it has been a joint enterprise. It was sometimes difficult to ask for help—despite needing it badly, and at times not recognising it when offered. To everyone who has helped me so freely and generously, my deepest thanks.

Roger Putzel introduced me to the 'world of XB' and nothing has ever been quite the same for me as an educator. Mark Tennant became supervisor of an incomplete and inchoate research project after it had survived a number of false starts and provided support, time and ideas generously—including the reference, which gave me the title and a central theme for this work.

My sons Michael and Glenn have lived through my study adventures and remain friends and supporters for whom I have a depth of gratitude beyond words. Thank you both so much. My parents, Nita and Vincent Morrisey helped me begin this journey—I cannot ever fully repay their faith in me, and this is one more step along a path they knew I could 'make by walking'. My sisters, sisters-in-law, and brothers and brothers-in-law encouraged me to finish this task through to the end!

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The participants in XB teach and learn their way through their own experience helping each other—and me—gain personal insights. The support of the first Australian XB was especially vital in forming ideas and practices recorded here.

And finally, most recently, Janet Prentice took a document that 'had potential' and helped me make it something I enjoyed working with. To each person named, and all those who have been beside me through this time, thank you so very much.

Abstract

This thesis investigates two intertwined themes. The first concerns the development of a framework for understanding, and making appropriate use of, simulations and games as tools for learning. The second concerns the utilisation of the term PratitionerResearcher to reflect the unity of practice and research activity in creating 'working knowledge' (Symes 2000).

These themes are intertwined in the sense that the route I take to understanding simulations and games is through the stance of a PractitionerResearcher. Conversely the thesis aims to draw out what it means to be a PractitionerResearcher through my engagement as a facilitator of simulations and games.

I argue that the knowledge I generate as a PractitionerResearcher is utilitarian and pragmatic. Grounded in my practice as an adult educator it utilises theoretical perspectives chosen for immediate relevance rather than because of any claims to 'truth' or permanence. Understanding how this shapes and influences my practice was a complex, difficult process. Using an auto-ethnographic approach, Chapter 1 outlines the development of my 'working knowledge' as a PractitinerResearcher. It draws on selected personal experiences in my work as an adult educator using simulations and games for teaching and learning.

While curiosity about historical facts initiated the research reported in Chapter 2, the chapter focuses on uses of historical precedent for generating greater understanding, and acceptance by participants, of simulations and games as teaching/learning strategies. It identifies a range of contributions—from war games, religious games, and children's play—to the structuring of modern educational simulations and games.

Chapter 3 explores approaches to classifying simulations and games. Its development brought a gradual realisation of the futility of trying to establish a single definitive categorisation system for all simulations and games. Understanding how they can be arranged in a variety of different relationships provides a better insight into their general features and helps in making decisions

about when and how to use specific activities. One outcome of the work for this chapter was the realisation of some simulations as 'open and infinite' in nature, and that XB—a simulation of importance in my practice—is such a simulation.

Chapter 4 uses concepts developed in the field of chaos theory to illustrate how certain simulations create messy but 'chaordic' (Hock 2002) rather than dis-orderly learning contexts. 'Chaos/chaotic' once meant only dis-order, 'messiness' and unpredictability. Twentieth century scientific discoveries illustrate that order is concealed within 'chaos' producing richly complex patterns when viewed from the right perspective. I argue that 'chaos' concepts can be usefully applied to open and infinite simulations to demonstrate how they are similarly 'chaordic'.

XB (for e**X**perience **B**ased learning) is an open, infinite chaordic simulation, and has been a driving force in my practice for six years. The case study in Chapter 5 introduces the *'world according to XB'* and takes the reader 'inside' participants' experiences as the unfolding nature of their learning is revealed in the way they apply theories of organisational behaviour to immediate behaviours.

Chapter 6 reflects on my experiences of facilitating XB, via a review of interactions with some past XB participants. The influence of such a learning process on my practice is analysed. The emotional impact of these interactions has brought a better understanding of my own practice, and the chapter considers the concept of 'dispassionate reflexivity' as an aid for the facilitator in such contexts.

Chapter 7 examines the evolution and distinctive features of the PractitionerResearcher in more detail. As an educator, a consistent focus of my work has been simultaneously 'to know more' and 'to be able to do better' – and it is the interdependence of these that lies at the heart of what it means to be a PractitionerResearcher.

It is my hope that this thesis offers a solution for practitioners wanting to combine 'research' and 'practice' into a practical and scientifically rigorous 'whole'. For such professionals the PractitionerResearcher model offers an integrated approach, combining and validating 'learning *in* action' and 'learning *for* action'.

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List of Acronyms

AAACE	Australian Association for Adult and Continuing Education
ABSEL	Association for Business Simulation and Experiential Learning
ALARPM	Action Learning, Action Research and Process Management
AITD	Australian Institute for Training and Development
ICEL	International Consortium on Experiential Education
ISAGA	International Simulation and Gaming Association
NASAGA	North American Simulation and Gaming Association
SAGSET	Society for the Advancement of Games and Simulations in Education and Training
SIAA	Simulation Industry Association of Australia
SimTect	Simulations Industry Technology Conference
SoL	Society for Organisational Learning
TAFE	Technical and Further Education – the government-based bodies which are providers of posts-secondary skills and trade training in Australia
UTS	University of Technology, Sydney

Chapter 1

Engaging with theory and putting myself into practice

Introduction

This thesis documents the developmental process through which I have come to understand the nature of my 'working knowledge' (Symes 2000) as an academic practitioner, educational researcher and adult learner. It analyses how I approach the triumvirate of practice, research and learning. The context of this research is that working with simulations and games for learning, and specifically the use of a simulation called XB, for which I adopted the label of 'open, infinite and chaordic'.

An interlinked set of arguments is presented concerning two quite disparate features of adult learning activity. One of these concerns the broad field of simulations and games used as learning strategies. The other concerns the way in which adult educators who consider themselves to be *either* Practitioners *or* Researchers may come to reconcile both perspectives so as to understand themselves as *both* Practitioner *and* Researcher through use of a lens I call the PractitionerResearcher.

These two themes emerged as interdependent aspects of my work as an adult educator with the first (simulations and games) as an initiating force for the research process and the PractitionerResearcher being the path I developed to reconcile apparent contradictions within my experience of being a researcher *and* a practitioner. It is an essentially holistic creation seeking to unify and combine, rather than divide and separate roles and concepts.

As it came into being, the thesis grew and changed in ways, which at times were unexpected and challenging. This first chapter seeks to accomplish two things: introducing the road I walked during my research, briefly indicating the diverse landscape I visited, and then presenting the PractitionerResearcher as a way of thinking about how to integrate theory and practice in the midst of action.

To set the scene for this thesis, the next section draws on introductory comments used in my regular academic workshops, for the purpose of presenting a brief account of key attributes of simulations and games used for learning.

Attributes of Simulations and Games

The use of simulations and games, for supporting and challenging adult learning, has been a core part of my practice since the mid-1970's, and this thesis has provided an opportunity for an exploration of their influence on my practice, as well as the nature of the activities themselves.

At the 2002 International Simulation and Gaming Association (ISAGA) conference in Edinburgh, I proposed that 'simulations and games' *include all interactive representations of perceived reality—past, present, future—used for learning purposes* (Leigh, 2002). As the field is so broad I have limited my considerations here to activities used in educational settings for learning purposes.

In Chapter 2 I explore how simulations and games have played a part in human endeavour for thousands of years, as vital components of political manoeuvring, and formal and informal social interaction and play. However, at the beginning of the twenty-first century they are still not fully accepted as appropriate strategies for formal educational purposes. It is my hope that this research will contribute to their wider acceptance as appropriate teaching/learning strategies.

In my educational workshops I identify seven key attributes—three 'structuring' factors and four 'fundamental elements—helping to delimit the structure and create a unique individuality for each activity.

Structuring factors

The structuring factors define the 'natural' order of events in simulations and games, which, like any good story, have a 'beginning' a 'middle' and an 'end'. While these may have quite different appearances at times they can really only occur in one order, as follows:

1. The *briefing*—is the process of introducing the activity, setting out the basic rules for play and providing any essential information. As the only person who knows about what lies ahead, the facilitator retains control of the briefing.

2. The *action*—for much of this phase participants have total control. They act as they see fit, in accord with information received in the briefing, and their behaviour creates the shape of the event. The facilitator has a watching brief, or may take certain actions as defined by the design of the activity.

3. The *debriefing*—is the stage during which facilitator and participants share control of the process. Their mutual goal is to identify and explore the learning emerging from the experience of the action.

Construction elements

The four construction elements that bring a simulation or game to life are:

1. The *rules*—guiding the action, creating the fabric of the activity, and shaping participants' behaviour in regard to how they produce the action

2. The *roles*—delimiting behaviour for the duration of the activity. They may be as simple as being one's self behaving slightly out of character for a brief period, or so complex as to be presented via several pages of description.

3. The *scenario*—may be very simple or hugely complex as the setting within which participants operate. A well-constructed scenario draws out the human capacity for imagination and creativity.

4. The *recording processes*—provide a platform for identifying new knowledge, and document participants' behaviour to support exploration of learning outcomes.

Unlike the structural factors these elements do not occur in any particular order but are contiguous with each other. All are interconnected and equally important. In general the rules guide the learning via participants' enactment of roles that combine to produce records of the lived experience of a scenario. An observer, watching a simulation in action is unlikely to think of the elements separately, although the debriefing may temporarily dismantle their relationships for the purpose of analysis.

Combinations of these seven attributes produces simulations and games that are highly interactive, individually distinctive, and *'play with'* concepts of learning, understanding, knowledge and power relationships in teaching/learning contexts.

Introducing the PractitionerResearcher

An early intention for the work of this thesis was to examine the field of games and simulations in general and then focus on a powerful simulation, called XB[1]. This is a cornerstone of my own teaching practice, and is a source of both successes and challenges for participants, and for myself as facilitator, as well as being the cause of disturbances within my work context.

Although the final document addresses partly true to this intention, a significant change in my understanding began to occur as a result of conducting the research. This concerns the concept of *not* treating the Researcher and the Practitioner as if they are two distinct entities. Instead it considers their integration as interrelated aspects of the one professionally effective educator.

[1] XB is a semester long experiential learning activity which I argue, in this thesis, is a particular form of simulation. Its exact nature is gradually unfolded (so far as this is possible) through the development of my argument in this thesis.

As an educator I am familiar with the 'yin-yang' concept of eastern traditions and routinely combine aspects of research and practice in a holistic stance that regards itself as neither 'one' nor 'the other' but both at once—with differing levels of importance being accorded to each at different moments. Each always contains the 'seed' of the other, alerting the educator to the implications of each mode for the practices of the other.

I have come to call this holistic approach the 'PractitionerResearcher'—a term arising from attempts to fit myself into the role of purely objective academic 'Researcher' for the purpose of this thesis, while continuing to be a highly pragmatic 'Practitioner' in my role as an adult educator. The term represents my experience of the impossibility of dividing my life into segments that could be examined objectively and separately. A purely academic researcher focused on theories and models that may, or may not, translate successfully into 'real life' will not be concerned with the 'both at once-ness' of holistic approaches to research and teaching. Neither will the teacher who does not think about stepping back to view her work or seek other sources for review, growth and progress.

Analyses of the 'practitioner-researcher' (Jarvis 1999) are usually presented from a 'researcher' perspective, examining the work of the 'practitioner' from a position located outside it. This is the case even when, at other times, the 'researcher' is also a 'practitioner'. The stance seems to involve observing and writing as *either* 'researcher' *or* 'practitioner' alternately, and to be placing a higher value on the work of the 'researcher' rather than that of the 'practitioner' in a subtle but profound manner. Although imbued with a belief about the necessity of adopting an objective 'external' stance for this research, I found myself unable to position my 'self as researcher' as an entity separate from the 'self that is practitioner' in the context of this writing. A separation of this kind implied a belief in the value of sustaining a totally objective stance; yet, given the nature of my research focus, this was becoming both unrealistic and impossible to sustain. I remain *both* 'practitioner' *and* 'researcher' at all times, while

consciously giving precedence to 'one over the other' only *as the context and purpose requires*.

Understanding that I could assert the right to co-locate 'practice' and 'research' within myself as a single harmonious entity did not come easily. The notion challenges the expectations of those who wish to "…privileg[e], perhaps as the manifestation of reason, the domain of 'distanced' theory". Marcus records that Bourdieu articulated a rationale for this 'distancing' when he wrote that:

> *… theory—the word itself says so—is a spectacle, which can only be understood from a viewpoint away from the stage on which the action is played out, the distance lies not so much where it is usually looked for, in the gap between cultural traditions, as in the gulf between two relations to the world, one theoretical, the other practical.* (p 44 Marcus 2003)

I completed the coursework assignments for this professional doctorate from within this 'distanced' theoretical perspective, taking care not to intrude on the 'stage', implicitly accepting the viewpoint described by Bourdieu as the norm for research. However, my practice was inexorably becoming the site of my research and, continuing with the theatre metaphor, it was becoming impossible to separate myself as 'observer/director' from myself as 'actor'. For a long while I remained unable to produce a meaningful resolution to what appeared to be an unresolvable dichotomy between 'research' and 'practice'.

My search for a resolution to this problem was not particularly orderly and logical since I could not, at that time, identify the nature of my problem nor how I might resolve it. A colleague who could more clearly identify my dilemma once asked, 'How's the *interconnectedness of everything* coming along?' Around the time he asked this, I had designed, and had made, a piece of jewellery representing this interconnectedness and my belief in the validity of seeing 'each in the other'. Modelled on that 'yin yang' image from eastern philosophical traditions, it represented my world-view—which 'felt' valid, but seemed paradoxically unresolvable in terms of objective research methods expected of this work.

In regard to changing perceptions about research methods in the wider research environment Skyttner notes that:

> *The world where classical positivistic science and technology obtained their great success has now vanished and is already part of history. But the way of thinking promoted by this epoch is still lingering into our social consciousness, sometimes like a burden. (p 7 Skyttner 2000)*

In his work on the use of systems theory and its applications as an alternative to traditional research paradigms he suggests that:

> *…all who attempt to solve problems, make recommendations and predict the future, need theories… to provide a simplified presentation of complex ideas by establishing connections between hitherto unrelated phenomena. (op cit p 8)*

He nonetheless cautions his readers to remember that the benefit of any particular theory has far less to do with its truthfulness than with its usefulness'*…different needs obviously demand different theories.*' (Skyttner 2000)

As Clarke points out, teachers theorise all the time but largely for their own individual purposes and as a personal endeavour. Although an important aspect of the profession, '*…it is not generally accorded as much importance in the field as is formal theory development*.' (Clarke 1994). In my own case this was a relevant, but well concealed, factor influencing my (apparent lack of) progress in developing a 'theory' about my practice. In fact I already had a 'well developed' theoretical framework—I was just unaware of it as 'separate from' the actions of my practice. The research process itself was allowing me to finally see the changing nature of both my workplace and my practice, but for a long time did not also bring to light the underlying *theory* that was informing my decisions and actions moving me ever further away from conventional teaching processes towards my present use of games and simulations as learning tools.

When I attended Lesley Scanlon's[2] doctoral seminar towards the end of the research phase of my preparation, it was out of idle curiosity. I was not expecting to find a solution to my frustrations about the difficulties of needing to separate the roles and perspectives of 'researcher' and 'practitioner'. However her observations provided the essential spark of inspiration needed to 'reinvent' myself as a PractitionerResearcher. She noted how the hyphen separates the two positions of 'teacher' and 'researcher' but also signals:

> *… the possible joining of these disparate elements, the dissolution of this manifestation of the theory-practice dichotomy and the creation of a new educational conceptualisation. (p 4 Scanlon 2002)*

Her wonderfully simple proposal of removing the hyphen from 'Practitioner-Researcher' also removed the obstacles created by the painfully artificial separation of 'self as practitioner' from 'self as researcher' and provided—in a keystroke—a means of establishing unity within my practice and my research.

Thanks to my encounter with Scanlon's realisation, it became possible to align my practitioner self with both my research action and learning intentions and brought into being a way of writing from *within* the indivisibility of teacher and researcher. Therefore, throughout this work the term 'PractitionerResearcher' is used to indicate a holistic or integrated mode of operation where researching, practising and learning are united rather than artificially divided into discrete and convenient parts.

This indivisible nature of my practice and research is consistent with my long time use of the principles and processes of *action learning* (Pinchen and Passfield 1995) and *action research* (Kemmis and McTaggart 1982) for developing my capabilities as a learner and a practitioner within my field. An action learning/research cycle involves *activity*, *reflection*, *analysis* and *implementation*—all undertaken with deep awareness of the contribution of learning as both motivator and change agent. My research process followed this

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[2] At a post-doctoral seminar after completing her studies at the university where I work.

cycle, in that I began by taking action to improve my own capabilities, at first somewhat casually observing the outcomes, before gradually realising the need for, and value of, deeper analysis of why certain things worked and others did not.

I use an action *learning* rather than an action *research* focus, being more interested in skills and knowledge for *individual* change (Pedler 1991), rather than the creation of change strategies for use in group, organisational or social contexts (Bunning 1992). Action learning has influenced my approach especially in regard to viewing research as a cyclical process involving both 'researcher' and 'subject' as co-creators of the research 'product'. In 'producing' myself as a PractitionerResearcher, I am proposing that distinctions between research done 'on' and 'by' Practitioners serve to obscure rather than illuminate their research activities. Such distinctions unnecessarily privilege 'objective' research and can lead Practitioners to devalue their 'knowing' of themselves as Researchers. My goal is to redress the imbalance.

Engaging with theory

> *Adult educators, along with other professionals, often suggest that competent performance is a matter of familiarising oneself with theories and then of putting these acquired theories into practice as relevant occasions arise… Though an understanding of theoretical constructions is important to any serious vocational endeavour, it is more efficacious to think in terms of engaging thoughtfully with theory and then, putting ourselves into practice, rather than putting theory into practice. (p 71 Collins 1991)*

From the beginning of my work with adult learners, I sought to reconcile for myself what appeared to be a gap between theory and practice. Becoming familiar with theories, then applying them to practice was not my experience. I seemed to do things, and then find that various theories could explain the 'why' of my practice. That theory need not *necessarily* precede practice was a pivotal

personal insight—which now informs and influences all my work, and gives me the confidence to continue 'putting myself into action', as Collins advocated.

As an emergent PractitionerResearcher implementing Collins' advice to engage with theory and put myself into practice, I began to perceive research processes quite differently eventually realising that I was using an 'autoethnographic' research strategy (Ellis and Bochner 2000) to achieve my present understanding of how I conduct research *and* integrate the results into practice. Ellis describes this strategy in this way:

> *I start with my personal life. I pay attention to my physical feelings, thoughts and emotions. I use what I call systematic sociological introspection and emotional recall to try and understand an experience I've lived through. Then I write my experience as a story. By exploring a particular life I hope to understand a way of life… (p 757 Ellis and Bochner 2000)*

Starting with my life and drawing on my own experiences to explore the knowledge, beliefs and values that underlie my practice has led me into avenues of teaching practice deviating further and further from the conventional. This practice and my pragmatic approach to research developed side by side, and it was the act of writing about the nature of their relationship that enabled me to articulate the PractitionerResearcher concept as a way of describing the 'interconnectedness' of theory and practice in my work. Ellis suggests, in this regard, that '*the goal is to use your life experience to generalise to a larger group or culture*' (p 757 Ellis and Bochner 2000).

As is the way of emergent learning I only found this research framework *after* I had been using it implicitly for some time. In contrast with more conventional research strategies, which call for decisions about 'research method' to be made early in the process, I had been working on this project for some time before encountering autoethnography. Indeed it really only became possible to recognise its relevance once I understood sufficiently the unfolding nature of my own learning.

Thus my research processes were rather more theoretically eclectic and colloquial than orderly and sequential. My practice was to search out ideas of use to the needs of the particular task I was undertaking. I collected themes and concepts in a highly pragmatic manner, which could appear haphazard to an observer not privy to an orientation towards 'making sense of things as they are'. As a Practitioner I am more concerned with using 'reasonable' explanations of current experiences and problems than with idealised concepts of what 'should be' in such settings. I have also at times been bemused by 'ideological' differences among theoretical traditions and practices whose proponents sometimes seem more concerned with issues of 'rightness' than with 'usefulness'.

Through continuing analysis of my own story I have developed a capacity to engage with theory in more complex ways while retaining a focus on pragmatic needs. I have learned to enjoy theory for its own sake, while valuing my work as a valid exposition of practice and research as co-joined and co-equal partners in development of concepts and theories about practice. So what is the nature of that practice?

Putting myself into practice

Rogers (Rogers 1973) suggests that good practice involves beginning with what the student brings to the learning encounter, and while I may have been doing so since my early encounters with adult learners it took much longer to understand the full impact, on myself and my practice, of operating this way, and even longer to be able to explain how the two can seamlessly engage with the needs of the moment to become what I now call an 'embodied' performance.

Lesley Scanlon's memorable presentation threw new light on my extensive use of various media, including journals, email discussions, video and audio and taping—and of course, conversations—to explore and record the design and outcomes of specific examples of my performance. In reviewing my use of these sources I identified four factors that contribute to *what* and *how* I learn. Their application results in on-going adjustments to my practice, and are:

- a preference for experiential learning—uniting 'thinking' with 'doing' and 'feeling'
- risk-taking behaviour—doing things differently in teaching/learning contexts long before having a full understanding of the process used
- the habit of 'thinking in my mouth'[3]—verbalising observations about particular events and experiences in order to 'hear' what they sound like, thus provoking further analysis as I interact with listeners
- an ongoing need for personal improvement—driving my continuing exploration of both theory and practice

The first three are externally visible behaviours, effective in aiding my learning because of their use of *active* engagement with others. The drive for personal improvement arises in part from encounters with theoretical terminology describing aspects of my practice for which I had previously felt no need to develop a 'name'. While I could carry out my practice proficiently, I often found I had no 'words' with which to describe it. My journals indicate a continuing affinity with T S Eliot's lament that:

> *Between the thought and the action*
> *lies the shadow*
>
> *(Eliot 1980)*

I have come to understand that - for a PractitionerResearcher - between the 'action' and the 'thought' lies the shadow of 'words'. My actions have no need of a name to be effective, until I am asked to describe them. Then the task seems daunting, opening up a gap between the 'doing' and the 'name'. As a new recruit during the First World War, Henry Reed wrote about this gap between 'action' and 'thought' created by 'words', in his poem *'Naming of Parts':*

> *Today we have naming of parts. Yesterday,*

We had daily cleaning. And tomorrow morning,
We shall have what to do after firing. But today,
Today we have naming of parts. Japonica
Glistens like coral in all the neighboring gardens,
And today we have naming of parts.

(Reed 1983)

Reed presents his observations of his own experience from a 'third position' perspective (Knight 1998)—an objective and distanced view. He and his reader stand silently apart from the room full of army recruits anxiously learning the names of parts of a life-saving/death-dealing tool, while spring flowers offer a calm tranquillity beyond all their reach. This metacognitive[4] stance presents the reader with a picture centred between death and beauty, where understanding is altered only by a single change in perspective, and captures the nature of the 'gap' between thought and action quite beautifully.

The PractitionerResearcher stance requires ability and willingness to adopt a similar third person perspective on the nature of one's own performance within the duality of practice-based research—that is also research-based practice. For example Tuckman's theory (Tuckman 1990) identifies 'storming' as an inevitable stage in the pattern of group development, as individual members evaluate power relationships among themselves. As tensions and stresses emerge, a facilitator of a complex simulation, appreciating that Tuckman's theory describes this as simply part of a larger 'pattern', knows to refrain from taking any action that could interfere with the evolution of the group to the next stage. Like Reed they 'see' both the current tension and future possibilities and must await developments.

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[3] This was my son's exasperated description of my behaviour when I was, once again, detailing some learning 'adventure' (long forgotten) from which I was not yet able to extract the learning that I must have expected.

[4] Metacognitive thoughts do not spring from a person's immediate external reality; rather, their source is tied to the person's own internal mental representations of that reality, which can include what one knows about that internal representation, how it works, and how one feels about it. Hacker, D. J. Metacognition: Definitions and Empirical Foundations, The University of Memphis. **2003**.

'Living' a theory then 'finding' it

Proposing the appropriateness of using one's self to learn about others, Ellis and Bochner report that:

> *…social scientists recently have begun to view themselves as the phenomenon and to write evocative personal narratives specifically focused on their academic as well as their personal lives. Their primary purpose is to understand a self or some aspect of a life lived in a cultural context.* (Ellis and Bochner 2000)

In the context of this research the 'self' that I have been putting into practice is specifically that of an academic teacher facilitating a complex and unsettling simulation called XB (for e**X**perience **B**ased learning) within a traditional academic context, where such an approach to teaching and learning is at variance with more generally accepted practice. In seeking to understand such a 'self' I have also been thinking deeply about what learnings and insights could be useful for other educators undertaking similarly 'out-of-the-ordinary' teaching/learning projects.

In learning to think about my actions as a process of 'putting myself into practice' I have had to attend to theory and research in new ways and consider my practice quite differently. Mangham notes that human beings may become conscious of our behaviour and reflect upon our actions at times when *'…a performance becomes 'laboured'—a matter of effort.'* (Mangham 1986). As an endeavour to theorise my practice, this thesis introduced into my life exactly the kind of 'effort' to which Mangham is referring.

'Putting myself into practice' was a comparatively simple and enjoyable matter, as long as I did not also have to consciously theorise either the actions or the principles informing it. It became harder to be 'natural' as I pursued the task of engaging awarely with theories and concepts in a cerebral and not only a practical manner. In effect I was living my theories without being aware of this as a habit. The change that has been wrought is the ability to do so awarely.

From my earliest teaching experiences I was highly pragmatic, preferring to respond to a context and participants' apparent needs, rather than use conventional 'teaching' practices. Student feedback confirmed the fidelity of my practice (as far as I was concerned) and, since I was left largely to my own devices, I was free to improvise in accord with current needs. On more than one occasion, setting out to comprehend some particular theoretical framework, I found it to be describing an aspect of my practice for which I had not previously possessed a 'name'. An example can help illustrate this phenomenon.

During my first adult education program, an older woman came to me before class, apologising for recent absences due to events in her workplace. I welcomed her back, arranged help for her to catch up, and thought no more of it, not revealing that I had not noticed the absences. At the end of the year she told me that for her this was a life-changing moment. Her fear of rejection had been almost overwhelming. Having tried to complete high school before and failed, she knew that if she did not 'come back' this time she would never achieve her career goals. My welcome allowed her to re-enter her most feared context—a classroom—and complete her studies.

In the years since, her simple expression of gratitude—coupled with my awareness of my actual frame of mind in the moment she described—serves as a constant reminder of the fragility of teacher/student relationships in adult learning contexts. Much later, when I encountered Carl Rogers' tenet of 'unconditional positive regard' (Rogers 1973), I seized upon it as a way of describing and informing my preferred behaviour in such contexts, although it was several years before I made the connection between that exchange and Rogers' intent.

This was a cycle of learning that began with experience, moved to reflection on experience, identified a learning outcome embellished with further reflection and modified by addition of new (theoretical) knowledge, until reaching eventual awareness of the theory in my practice. In Collins' terms I had engaged with theory to explore my practice and found that I was already living that theory in practice in the form of am intuitively based mode of operation. The outcome of

such a cycle is not a simple continuation of old practice, but a better understanding of the reasons for that practice and therefore a more aware and explicit application of its intent.

Changing context, continuing practice

Over the years, life circumstances, and a preference for 'action' over 'analysis', kept me in a tension of seeking widely for 'theory' to inform 'practice', while continuing to develop practices to fit the context, seldom analysing my choices to see what they might indicate about assumptions and personal beliefs underlying my performance. I worked with informal 'study groups' to improve my practice as an adult educator, while intermittently undertaking further formal education to understand the theory. Perhaps inevitably, this use of two such different strategies served to separate, rather than unify, the elements of my 'knowing'.

While it is an artificial construct to talk about a continuing separation of 'thought' and 'action', T S Eliot's notion of 'the shadow' is a powerful description of my experience. I conduct 'research', during which I absorb new information and integrate it at a level that seems to be 'other than' conscious. Then, moving into 'action', I enter a state akin to that which Michael Csikszentmihalyi (1991) has explored under the title of 'flow'. In 'putting myself into practice' I apply theory fluently, attending to the demands of the moment rather than to the form of the theory, and in doing so remain (for longer or shorter) unaware of the 'shadow' that is the hidden influence of the theory itself.

This is evocative of the concept of 'unconscious competence'[5]. within a matrix linking levels of 'competence' and degrees of 'consciousness' that I first

5 At that time I did not seek a reference for this. Searching for its provenance I encountered an interesting phenomenon—no-one else seemed to know! The following reference is thus provided:
"I placed the query about the origin of the matrix on to the Action Research list. It has sparked a similar discussion to [this one] spinning off into an interesting discussion about tacit and non-tacit experience. Confusion about the origins remains; lots of head scratchings and wonderings:
Jack Whitehead said: In a paper on the problems of legitimating an action research Ph.D., my colleague Paul Denley writes about his learning in terms of a movement from Unconscious Incompetence, Conscious Incompetence, Unconscious Competence and Conscious Competence. Paul's reference to this model is: Dubin, P (1962) 'Human Relations in Administration', Englewood Cliffs, NJ, Prentice-Hall."

encountered in the 1970s' among other models for thinking about learning and training. It represents learning as beginning with 'unconscious incompetence' moving to 'conscious incompetence' thence to 'conscious competence' before slipping into the 'flow' of 'unconscious competence' as shown in Figure 1.

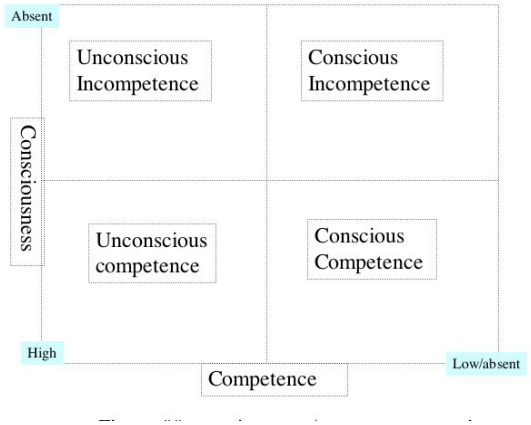

Figure 1 Consciousness and competence-a learning matrix

In this light it seems that Collins' proposal to engage with theory and put oneself into practice is equivalent to an invitation for adult educators to work towards achieving unconscious competence as both 'more than' and 'other than' appropriate application of relevant theory.

In the state of 'flow' I know why I am doing things—asking questions, challenging participants, following lines of discussion, introducing activities etc., and the process produces desired results. Afterwards, however, when colleagues ask: "Why did you do that?" I am often at a loss to explain my actions in any meaningful manner[6]—if the notion of 'meaningful' is limited to direct reference to specific theories.

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[6] While travelling with a colleague to lead a team conducting a three-day residential workshop for managers, I detailed what I expected to do and say in the first 90 minutes noting how this fitted with the program goals. At the coffee break, just over three hours later, she asked: "Why did you do that?"—and told me that nothing on my stated list of intentions had actually been implemented.

I attend to learning about how and why particular concepts might be relevant to some current context, plan how to use them, and move into action focusing on interactions with the group. Sooner or later, but usually sooner, I lose track of the 'theory' which drops below any conscious level of thought. For a long time I assumed that, on each such occasion, I had 'lost' the theory and would experience frustration that 'once again' I had been unable to 'put theory into practice'.

Time Line theory (James and Woodsmall 1988), indicates that I am an 'In Line' person who prefers to 'look ahead' to the future and has difficulty 'standing aside' from the stream of events for the purpose of discovering trends for objective analysis. Use of an action learning strategy requiring 'reflection *on* action' ((Schon 1983) helps focus my thinking about my 'behaviour in action' and provides a means of uncovering the interdependency between the theories and experiences that shape my actions. Action learning is now such a 'partner' in my practice that while I consistently score most highly as an 'Activist' (Honey and Mumford 1986) in terms of my preferred learning style, I am considered, by those who observe my practice, to be a 'Reflector' and/or 'Theorist'[7].

As a *Practitioner* I will continue to ask about the 'how' of practice. As a *Researcher* my interest is sparked and challenged by questions about the 'why' of that practice and its goals. As a *PractitionerResearcher* the impact of both concerns will be most clearly evident as a 'holistic' approach to teaching and learning, working to integrate the learning derived from both. The conscious effort to combine these two approaches began with my valuing of *involvement* in practice ahead of the *detachment* of objective research, but through the process of writing has moved inevitably towards appreciating their combined powers.

She felt instead that she had observed one of my 'celebrated swerves' (a term coined by another colleague alternately admiring of, and exasperated by, such abrupt changes). I achieved all my nominated goals—but in a manner so different from my prior description that she could not imagine what had caused me to make the drastic changes to my intentions. Neither could I articulate the array of cues that had caused the 'swerve'.

7 This occurred for the first time during David Kolb's workshop at an ICEL conference at Hawkesbury College in 1990, where I declared myself as an Activist, and was told by almost a dozen of my students, present at the workshop, that they all saw me as 'highly theoretical and analytical'. '*Knowing'* myself as an Activist I ignored this feedback for some time!

Encountering 'Working Knowledge'

Concepts of 'working knowledge' were quite a late addition to the structure and content of this thesis yet, once admitted, became vital elements binding together my 'knowledge about' the field of simulations and games for learning, and the skills I have developed to 'be able to' design and use them effectively and appropriately in academic and workplace contexts.

In their introduction to a collection of research papers on 'Working Knowledge: Productive Learning at Work' Boud and Symes describe 'working knowledge' as '*knowledge that leads to increases in productivity and to more efficient and potentially more satisfying labour processes'* (p 2 Symes 2000). In the same volume Chappell observes that knowledge gained via 'disciplinary' study in formal contexts is being questioned for its '*adequacy and utility of content'* (p 73 Chappell 2000) when compared to the '*contemporary workplace* [as] *a primary site of knowledge production, with knowledge production the key element to economic success*' (ibid p 73). His chief concern is the impact of new conceptions about knowledge, which see it as:

> *…not judged in terms of claims to certainty, nor in terms of its consistency and allocatedness within the existing knowledge schema of traditional disciplines. Knowledge is not so much judged in terms of any generalisable claim to intellectual progress but more in terms of its economic benefit. It is not judged in terms of its 'truth' status but rather its utility in maximising the efficiency of social and economic systems*
>
> . . . .
>
> *In this re-configuration, working knowledge is constructed as both transitory and performative … It is also transdisciplinary, not bounded by traditional epistemological classification and is grounded by context making no claim to generalisability.* (op cit p 76)

In Chappell's description I recognise key aspects of the knowledge underlying my practice. It is '*utilitarian'*—or 'pragmatic'—in that it is re-developed and reconstructed repeatedly in terms of its *efficiency* for the needs of emergent situations. It is also certainly grounded in the '*performance'* of my practice rather

than as intellectual conceptualisations in the form of the written word. As such, it exists as a 'process within', while also being reproducible (for example in students assignments) as the 'product of' my efforts. As such it is, to some extent, transitory and permeable lasting perhaps only for the duration of a single teaching episode, while also enduring, albeit in forms amended by the acquisition of new understanding.

I make eclectic use of discipline-based information for help with problems arising in my practice, reading widely across disciplines from science to psychology, archaeology to botany, history to sociology and management to philosophy. And, of course, it is my Practitioner orientation towards contextual needs that motivates this wide-ranging and on-going exploration for new knowledge, rather than any search for 'certainty' or proof of the 'truth' of what I know.

At least one aspect of the concept of 'working knowledge' described by Chappell—the issue of its 'generalisability'—is a less useful descriptor. As an educator my 'knowledge' must be, to a very great extent, generalisable to be able to meet the needs of those I teach. And my experience is indeed, that the information I present, and the manner of its presentation—*which <u>together</u> constitute my 'working knowledge'*—are generalisable.

In endeavouring to 'live the theories I teach' my goal is to model a teaching/learning methodology, which demonstrates *in action* the theories I am presenting. Perhaps in respect to notions of generalisability, my 'working knowledge' could be more aptly described as *'my knowledge at work'* modelling an approach to being an adult educator that is both visible and presented in a manner making it possible for others to consider it for their own use. In regard to the 'visibility' of this melding of theory and practice, a student wrote to me at the end of a period in which I juggled completion of this thesis, a full teaching load and family, social and community commitments: *'I very much like your style of teaching . . you place very much emphasis on the learner.' (MTA 2003)*

And another referenced a model that I have long held[8] as a guiding principle for my approach to the role of educator, especially in regard to the role of facilitator of simulations, when she wrote:

> *I am reminded of a saying within a book written about Carl Rogers:*
> *Lao-Tse, 2500 years ago(in Rogers 1983):*
> *But of a good leader, who talks little,*
> *When his work is done, his aim fulfilled,*
> *They will all say: "We did this ourselves*." (2003*)*

Thus my encounters with concepts of 'working knowledge' have followed the same pattern as noted for other aspects of the development of my practice. I evolved a strategy, applied and developed it, found a 'name' for it (e.g. Lao Tsu's observation) and model it, as far as without having to state a theoretical expression of it.

The gap between 'knowing' and 'writing'

It was always going to be difficult for me to be neutral and 'uninvolved' as a researcher and I gradually became aware that *'being within the body of'* the researcher while also *'being the researched'* was causing confusion and adversely affecting the progress of my thesis. Some time after beginning to write up my work I was advised by my supervisor that:

> *…there is a fundamental incompatibility between the nature of your 'knowing' in this area and its expression in an academic text—this is a major source of difficulty.*

My journals and reflective writing are valuable tools for me, and after reading this comment I recorded in the concurrent volume that:

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8 The earliest notes about my use of this reference, as a design principle for a management development program, are in working papers for the conference presentation associated with Leigh, E., R. Gorrie, et al. (1992). Metaphors, Magic and Organisational Change. Second World Congress on Action Learning - transforming tomorrow today, Brisbane, Australia, ALARPM.

> *I need to understand more about the 'what and why' of the thinking behind this statement.*
>
> *I am assuming that achieving this understanding will provide effective guidelines for working my own way further into the concepts involved in writing about 'working knowledge' from within 'working knowledge'.*
>
> *(Journal notes, 2000)*

One early possibility for the focus of this research towards a Doctor of Education was to identify and recommend development options to improve adult educators' knowledge and use of simulations in learning contexts. By focussing on my own practice-based problems and issues I had intended to extrapolate my learnings to the fields of adult learning and simulations and games. Inexorably, however, the focus shifted to resolving the dilemma of the apparent 'incompatibility' between my innate 'knowing' and 'its expression in an academic text'.

Was I to infer, from my supervisor's observation, that my 'knowing' was somehow inadequate—less than 'academic text'? Was I being advised to alter my 'knowing' and my expression of it in some fundamental way? And, if the problem did not lie within my 'knowing', what was I missing in my efforts to produce an 'academic text'? And what did all this suggest about the nature of my practice and the moment-to-moment choices I make as a practitioner using simulations for learning?

At the time I did not fully appreciate *'that there is an inevitable difference in understanding between the interpreter and the author of a text that is created by the historical distance between them'* (Klein and Myers 1999). Realising this led to recognition that such differences were a reason for developing a better understanding of both my practice and my expression of it rather than a cause for abandoning my text.

The images in Figure 2 are on the cover of the 2003 XB manual. Looked at one way they are pairs of faces with, respectively, a neutral or aggressive demeanour.

Looked at from a slightly different perspective, they are large ornate Grecian urns awaiting fruit or flowers! The viewer must consciously shift perspective to see each of the four images. They are visual examples of the concept of 'multiple perspectives' in which one image has more than one possible interpretation.

Figure 2. Images of 'multiple perspectives'

I was familiar with such representations of the concept of 'multiple perspectives'[9], so grappling with questions about the nature of my writing and my practice helped identify that a 'multiple perspectives' approach could provide a way of thinking through the 'incompatibility' in a manner that did not require use of an 'either/or' (reductive) solution. I could, instead, use a 'both/and' (inclusive/holistic) perspective in such a way that I could articulate my own 'knowing' and also produce it as an acceptable 'academic text'.

With this in mind I gave up the development of a conventional research question to explore my practice and the knowledge underlying it in new ways. I wanted to gain insights into this issue of 'incompatibility', and to do so from 'within' the role of the researcher. I need not be an 'objective' researcher, but could learn to give more credence to my practice, not at the expense of theory but in concert with it. Understanding that I need not stand outside the subject of the research, I began to confront the problem of balancing two quite different demands.

To achieve an understanding of what it is that I do 'know' and how to explain it appropriatelyI had to be, for a while, totally subjective and highly personal in

9 The notion of 'perspective'—borrowed from artistic endeavour—is now used widely as a metaphor for being able to 'see things from more than one point of view'.

exploring the origins of my principles and practice. Simultaneously I had to learn to write more objectively, impersonally and analytically about the experience that is my working life, in the context of being a research subject. With these as imperative driving forces I turned to an exploration of my development and career path, examining the choices leading to this point in my life.

I was excited by what I unearthed by this process, and wrote extensively about it. Virtually none of this writing is included in this final text, as it proved to be the last time I needed to resort use of to the kind of writing that I was advised was so problematic. Nonetheless its creation was an immensely freeing step in helping understand how I 'came to be what I am', and enabled me to articulate what I have done and learnt.

The final form of this thesis

Having finally established this, the various components of my research that had been continuing, alongside this struggle to establish my own 'voice', came into focus. That is, the research *together with* the writing process enabled the necessary shift in perspective which introduced the lens PractitionerResearcher, as well as continuing to develop my understanding about the field of simulations and games.

As a Practitioner I had frequently encountered the need to justify my approach to teaching via the use of simulations and games. I had therefore been prompted—by practical considerations—to research their background and rationale. This began with an historical perspective to uncover answers to some 'frequently asked' questions about their educational validity. At the same time the knowledge acquired in the course of this process provided valuable insights into my own work of creating original games and simulations, and advising others on appropriate choices of activities for use in particular situations.

Thus my on-going interest in the history of simulations and games contributed to the improvement of my teaching practice, supporting and enriching the capabilities of adult educators whom I taught, particularly those whose work

became the content of the two books I published collaboratively in the early stages of this research (Leigh and Kinder 1999; Leigh and Kinder 2001). Chapter 2 examines these historical perspectives to develop an understanding of how particular forces shape the design and application of contemporary simulations and games.

Chapter 3 explores approaches to classifying simulations and games. Its development brought a gradual realisation of the futility of trying to establish a single definitive categorisation system for all simulations and games. Understanding that they can be arranged in a variety of different relationships provides a clearer insight into both their general features and helps in making decisions about when and how to use specific activities. One outcome of the work for this chapter was identification of XB as 'open and infinite' in nature.

The scientific discoveries known variously as 'chaos theory', 'chaos' and 'complexity' have been revealing for some time that the inherent unpredictability of life does, in fact, have an underlying order, which can be discovered but seldom 'predicted' (Waldrop 1992). Drawing on these concepts Dee Hock (Hock 1996) coined the term 'chaordic' to describe business organisations able to adapt to changing circumstances and containing within them both orderly functions and chaotic behaviours. Acceptance of the existence of chaos within order *and* of order within chaos is widespread, although their underlying scientific principles are yet not influencing educational processes and practices in tertiary environments like my own. Chapter 4 introduces a number of these 'chaos' concepts as tools for examining the internal 'workings' of XB and assists in identifying XB as 'chaordic'.

Chapter 5 is a case study of XB. As much as words can, it provides a graphic illustration of the way that it 'comes to life' during each iteration, and introduces some of the patterns and learnings that can come out of it.

Chapter 6 reflects on my experiences of facilitating XB. It explores factors shaping my practice as a result of my interactions with its impact on participants and

peers, and reports on a number of episodes through which I have come to understand my own practice better.

The gap in my understanding about research and practice has narrowed inexorably, especially as I worked on this thesis. As discussed, the "-" between Practitioner and Researcher has been entirely dispensed with—and I now conceptualise my work as a holistic, synergistic PractitionerResearcher. Chapter 7 examines the evolution and distinctive features of the PractitionerResearcher in more detail. Educators consistently focusing *both* on 'to know more' and 'to do better' will find they leap-frog each other depending on particular circumstances. Table 1— on the following page, and explored in detail in Chapter 7—identifies five features distinguishing the PractitionerResearcher from either Practitioner or Researcher.

For myself as PractitionerResearcher the 'Practitioner' was the stimulus for the 'Researcher' while the latter often went further than intended (driven by curiosity, new discoveries, one idea giving rise to another line of thought, etc,), such that the former often benefited to a degree beyond initial expectations. Thus the PractitionerResearcher is actually a *synergistic* melding of the separate entities of Practitioner and Researcher.

It is my hope that this thesis offers a solution for practitioners choosing to combine 'research' and 'practice' into a practical but scientifically rigorous 'whole'. For such professionals the PractitionerResearcher model offers an integrated approach, combining and validating 'learning *in* action' and 'learning *for* action'.

Feature	Practitioner	Researcher	PractitionerResearcher
Curiosity	Driven by work needs, not by any 'need to know' for its own sake.	Driven by 'need to know' for its own sake; less concern for practical applications.	Driven simultaneously by work needs and the 'need to know'. Sees how each informs the other, values their interconnectedness as essential to supporting a unified approach to action.
Questioning	Seeks information about 'how to' act; unconcerned about potential for creating 'new knowledge'.	Concerned with generating new knowledge; less interested in possible applications of answers derived from research.	Concerned with knowing how to apply new knowledge, but also interested in, and aware of, capacity to generate it from within practice.
Verifiability ('purity' of methodology)	Pragmatic; largely unconcerned by issues of 'objective' verifiability. Purity of method less important than quick access and application. If it works its 'good value'.	Primary concern is ability to verify 'truth' research methods and findings. Need to demonstrate that research methodologies conforms to 'standards'. If it's 'good value' it works.	Shares pragmatic stance of practitioners in regard to usability of knowledge, while being alert to the benefits of research as means of justifying and supporting practice (especially when 'unconventional'). Values 'good work'. Interested in how theory explains why practice works.
Time frames	Aligned to immediate needs of client/ employer. Less able (interested) in long time frames—requires 'quick returns' on time/effort invested.	More interested in longer time frames, completing complex projects, developing information about 'trends', illustrating generalisable implications of research results.	Accept the need to meet immediate goals, but able—and interested—to hold in mind the benefit of researching practice for mid-term improvements and longer term understanding and change.
Primary orientation	To complete work tasks; achieve immediate goals. Research only useful where directly relevant to practice.	To identify questions worthy of research; develop theory based on the outcomes of practice; generate new knowledge.	First practice then research, but also interplay of the two. More questioning than a practitioner, but more pragmatic than a 'pure' researcher.

Table 1 Comparing features of the Practitioner, Researcher and PractitionerResearcher

Chapter 2

A PractitionerResearcher approach to history

Introduction

Taking an historical perspective, Chapter Two examines how three particular contexts have contributed to the design and use of games and simulations in contemporary settings. It considers how knowledge of relevant historical precedents plays a part in justifying their use in educational contexts. As I pursued my research on this section of the thesis I came to understand how a deeper knowledge of these contexts assists individuals to be better informed and more versatile Practitioners. Thus research, intended to improve my practice, contributed to the development of my understanding of myself as a 'PractitionerResearcher'. The first section of this chapter illustrates how the evolution of my understanding informed my growing awareness of history as my 'foundational' discipline and a contemporary tool for use in my practice.

Although I had long regarded an understanding of the history of simulations and games as a key knowledge-component for facilitators of simulations and games, for a long time I could not identify *why* I thought it was so important. That was until my supervisor asked the specific question: *'Why is this important—what is the benefit of knowing about the history of games and simulations?*'

In developing my answer to this question I made a connection with the concept of 'working knowledge', as it became evident that my practice is markedly influenced by an abiding interest in history. An early passion for reading[10] led to high school honours, undergraduate majors in history and archaeology, and plans to be a history teacher. However, life circumstances meant that I did not pursue my anticipated

[10] This included quantities of 'war comics' (a 1950's phenomenon not much in evidence today), historical novels, encyclopaedias - all with a leaning towards 'learning from history'.

career, so I came to assume that history was no longer part of my repertoire. Producing this chapter revealed that my interest has not faded at all, but has instead become one of the first tools I draw on (often unconsciously) when approaching questions arising within my practice.

Once I understood how history was unconsciously informing my practice, I also saw how it caused me to actively research the use of simulations and games in the past for the benefit of my practice as both facilitator and adult educator. As a result I have arrived at a *conscious* understanding of the value I place on the use of historical models to support my practice. Thus the fusion of personal interest and professional training with current needs and priorities is an example of the powerful synthesis of practice and research that is a PractitionerResearcher.

As I explored the concepts presented in this chapter it became evident that a PractitionerResearcher's repertoire includes a wide range of knowledge, skills and experiences shaped by a variety of factors—not all of them part of conscious awareness, but nonetheless influencing practice and biasing approaches to research.

Those early passions and studies were largely driven by a concern for *'knowing why'* things happened as they did. This is a Researcher's question. My varied work experiences shifted my attention towards a concern for *'knowing how'*, which is a Practitioner's question. As I grappled with the task of explaining the benefit (for fellow Practitioners) in *'knowing about'* the history of simulations and games, I began to articulate my (intuitive) understanding that all three forms of *'knowing'* contribute something different but valuable to the challenge of integrating theory and practice. It also enabled me to recognise that the PractitionerResearcher is a valid and generalisable concept for educators who regard themselves as non-researching practitioners, but are in fact much more research-oriented than they think.

Figure 4 was included in an early version of this chapter to show how the process developed. While interesting as a map of a process, it did not seem to add anything to the research so did not appear in later versions. Only towards the end of writing the chapter could I see that it too was missing the 'closing loop' shifting the focus from a choice between 'either' practice 'or' research to 'practice+research' as inseparable.

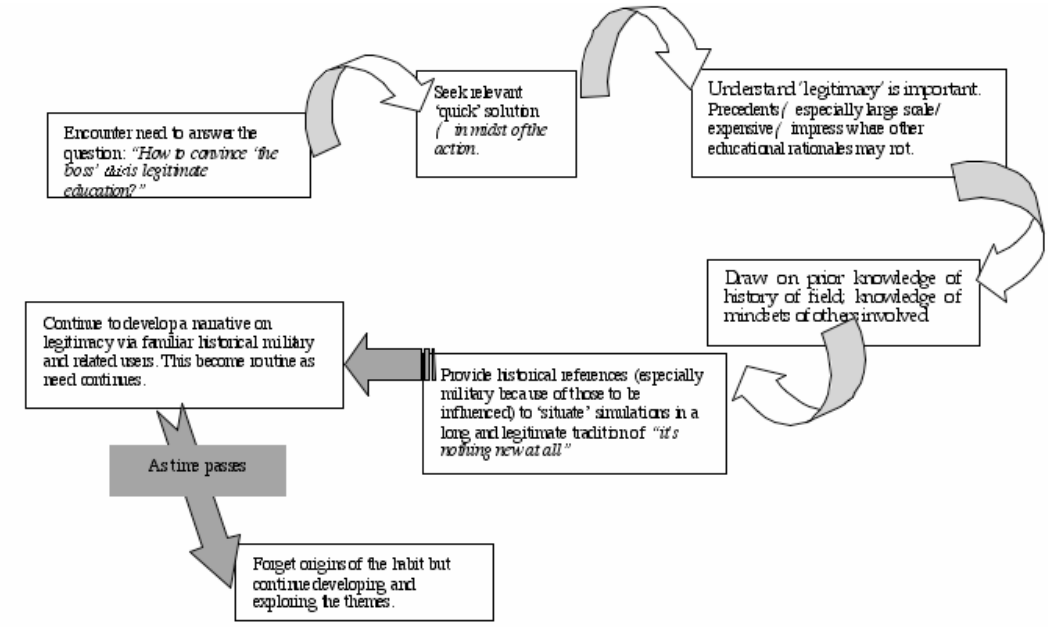

Figure 3 Tracing the origins of a history-based approach to understanding simulations and games

As such it earned its place in the chapter as a marker of the developmental that is logically part of all research and practice, but is often ignored or deemed 'superfluous' and deleted. The term 'reflexive practice' (Ashmore 1989) most nearly fits this developmental process. Figure 4 illustrates how a PractitionerResearcher comes to understand the value of re-examining personal *'know how'* and '*know why'* to appreciate *what* they have become, enabling more conscious use of skills and knowledge for addressing the needs of practice. Arguments for the educational validity of simulations and games are provided in many ways (Duke 1974; Greenblat 1988; Elgood 1990). In my own case I had come to rely on historical precedent to justify the use of simulations and games as legitimate teaching/learning methodologies. I was drawing on what was most familiar while also extending my research into a number of related fields.

An unanticipated benefit of producing this thesis is the way it has prompted me to move beyond my current understanding of my own learning strategies, bringing unexpected awareness that my research activity is more closely attuned to my practice needs than I was consciously aware.

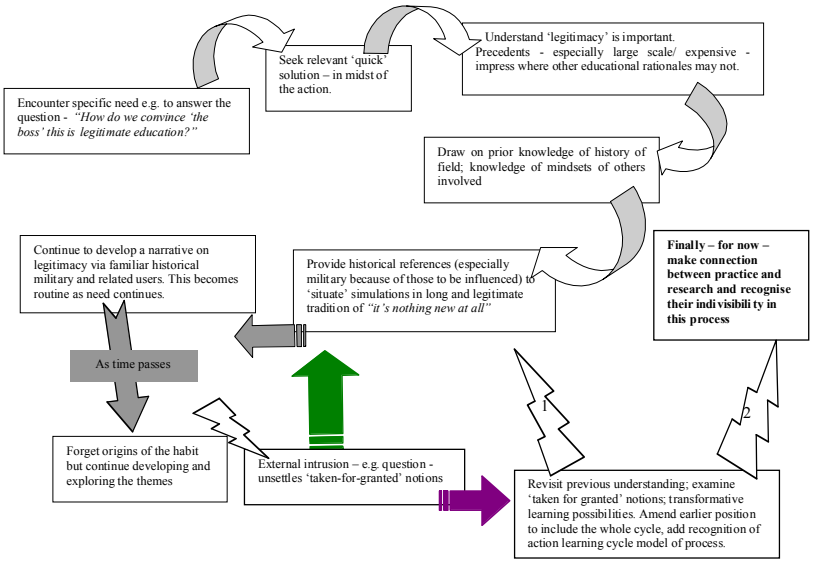

Figure 4 A PractitionerResearcher perspective on seeking a history-based rationale for simulations and games-revised and expanded

As I became aware of the influence of prior experiences I searched for how I had begun to use historical 'justifications' for simulations and games. This led me to surviving notes from my earliest tertiary education workshops, conducted for adult educators wanting to learn how to use simulations when training employees in their various workplaces. Re-reading those notes (Leigh 1988) reminded me of the first occasion when I was asked: *"How do we justify our use of simulations in our workplaces?"* As it was not a question I had anticipated when preparing the course notes[11], I remember casting about in my mind for an 'off the cuff' answer to support my claims for their validity.

From my own experiences as a workplace trainer I knew a good deal about the participants' work contexts, and sought for something that would meet their specific, pragmatic needs. Drawing from data collected because of that historical bias, relying on intuition and responding to the needs of the moment, I referred to current news articles about Australian military uses of simulations and my own knowledge and experience of how other bodies (emergency services authorities, disaster relief agencies, etc) used them for strategic and tactical planning.

[11] An indicator of my own state of mind about the 'unquestionable validity' of the use of simulations and games for learning!

That my answer was accepted as valid confirmed that its usefulness and, as the questions were repeated in subsequent workshops, my curiosity was aroused leading to further exploration of the question for its own sake. Thus my personal orientation and prior professional development led me to choose an historical rather than an educational or any other possible rationale. Someone with a different background might well have chosen quite a different response. As Heisenberg[12] first suggested in 1927, researchers are likely to choose methods that appeal to their own 'world views'. This is neither a 'good' nor a 'bad' thing, but simply a factor reminding a PractitionerResearcher of the importance of being aware that earlier formative experiences might influence present stances and actions and serves to warn against being limited by prior perceptions.

To sum up, discovering that initial training and subsequent inclinations were unconsciously influencing my approach to both research and teaching tasks had a powerful impact. Once I was seriously addressing the question of *'Why is history important?'* I became aware of history as both a *theoretical* discipline and a *practical tool*[13]. While there is much to be explored, I found two specific benefits and three contributions linked to an understanding the history of simulations and games.

Benefits of an understanding of history

The first of the two benefits of an historical perspective concerns how history provides relevant *precedents* for clearly justifying the use of simulations and games

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[12] Heisenberg's Uncertainty Principle "*tells us, roughly speaking, that all physical quantities that can be observed are subject to unpredictable fluctuations, so that their values are not* precisely *defined… the experimenter is free to measure [any] quantities to arbitrary precision, but they cannot possess precise values simultaneously."* Davies, P. (1990). Introduction. Physic and Philosophy, Werner Heisenberg. London UK, Harper & Row. In other words once we have chosen our 'method' we begin to define what we will 'find'.

[13] As I explored the history of games and simulations I also designed simulations. One in particular was developed to demonstrate how history is a 'constructed' form of reality—that can be adjusted to accord with an observer's own perspectives and interests, as well as changing social contexts and expectations. This was published as 'Through a Glass Darkly' in Leigh, E. and J. Kinder (2001). Fun and Games for Workplace Learning. Sydney, McGraw Hill.

as effective alternatives to conventional teaching practices. The second benefit is that an informed understanding of how such tools have been/are currently being used in one setting assists in identifying how to *translate* them effectively to other contexts.

My very practical nature caused me to begin with the first of these benefits in an effort to win acceptance from both employers and participants of the validity of using games and simulations for educational purposes. Over time I developed, and drew on, my growing understanding of historical precedents to strengthen and extend the argument. It provide sufficient rationale, and was accepted often enough, that I remained unconscious of the potential benefit of drawing on these examples to enhance current design and usage, until I was asked 'why a history focus?'.

However clear and logical the second benefit—that of greater understanding leading to more effective application—now seems to be, it only emerged in the process of producing this thesis. Although both have informed my practice, it was the research and evaluation that led me to consciously recognise the second benefit.

I understood neither of these benefits, although I was already implicitly relying on them to justify my own practice, when my actions generated a memorable example of both the potency of simulations and games for learning, and their capacity to generate widely divergent responses. This occurred long before I took up an academic role, and was the result of an invitation from a client to conduct a simulation for managers attending a program at his organisation's training centre.

The particular simulation allowed no speaking during the action phase. Despite this, the participants—bank managers attending a senior management development program—created a great deal of noise and hilarity as they worked to achieve the designated goal and I received two strongly contrasting sets of feedback. The participants, my client and the next presenter, spoke of the depth and quality of the knowledge emerging from the process. The client and the presenter were excited by the way it provided an experientially-based explanation for the presenter's communication model. The Venue Manager, on the other hand, remarked caustically that: "There can't have been any learning going on there—it was far too noisy."

The client had previously been a Royal Australian Air Force officer and his military training (including extensive use of mechanical and tactical simulations) enabled him to readily accept my history-based arguments for the value of simulations for learning. Thus we shared a common framework about the use of such processes. The participants had first-hand experience of the learning they generated through their actions. The presenter had direct evidence of the process's effectiveness from the quality of their responses to his models. However the Venue Manager was limited to overhearing the 'noise', and his adverse reaction was coloured by a perception that 'good education' is best represented by the familiar image of students sitting behind desks or tables, listening and taking notes as a 'teacher' stands and talks.

When I accepted an offer by the client to work full time at this training centre, I might have benefited immensely from applying a PractitionerResearcher perspective to my work. The Venue Manager and I were in close proximity on the premises; my ex-client, now my manager, was not. The PractitionerResearcher mode might have given me insight into the differences in our perspectives on 'education' and reduced the adversarial relationship arising from our very different perspectives on what constitutes 'good' teaching and learning methods.

I was hired to create learning opportunities of the kind the client and the presenter admired—equipping participants with both knowledge *and* skills—from their own experiences and resources—enabling them to be both more aware of their own capabilities and more effective than they were before. On the other hand the Venue Manager's goal was to run an 'orderly' training centre, and during the time I was there, we were unable to combine our resources to achieve both goals.

As a Practitioner I understood that 'educate' means to 'draw out'—not to 'put in'. I was using teaching methods that could create learning contexts allowing participants to draw on personal resources to combine existing capabilities with new knowledge and expectations. As a Researcher I was developing knowledge of simulations. A PractitionerResearcher awareness might have been able to recognise the gap in our

respective understanding and expectations, and been able to find the common ground between our very different perceptions of the meaning of 'to educate'[14].

Two years later I took up a new position that drew my attention away from simulations and games. It required a combination of research and practice-based skills and knowledge—this time, however, about enacting theories and principles of 'human resource management'. While not evident at the time, this excursion away from the field of simulations and games provided a valuable grounding in theories of human behaviour, which now underpins all my practice. It also extended my ability to integrate theory with action, in much the same way that the simulated experiences I had used in the previous position had extended participants' abilities to do likewise.

When I returned to an educational role, four years later, I had acquired a good deal of direct experience of, and a depth of knowledge about, human behaviour to combine with my understanding of simulations and games. I also had a greater capacity to allow the learning to emerge from whatever was created. Four years' experience as a Human Resources Manager emphasised the complexity of 'real world' business contexts, inducing a degree of cynicism about the 'unreality' of many theories—while supporting development of a capacity to enjoy the uncertainty and ambiguity affecting human interactions in complex, emotionally charged situations.

And, of course, I remained convinced of the benefit of historical precedent to justify the use of simulations and games[15]. However such conviction is seldom enough on its own, no matter how readily it may be accepted by those willing to be convinced.

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[14] Phillip Adams, an Australian journalist and commentator wrote: "…data isn't information. Information isn't knowledge. And knowledge isn't wisdom." (Phillip Adams, *Weekend Australian Review*, 19-20 April 2003) The Venue Manager would have difficulty comprehending why Adams could suggest this. 'Knowledge'—of procedures, policies and principles—was the centre's focus; putting the 'knowledge' into practice, through active engagement with it, was not part of his understanding. I did not comprehend any distinction between 'knowing' and 'doing', so chose to regard his opposition as limited and naïve. Neither of us 'knew' the other in a way that could have achieved mutual understanding, if not respect.

[15] It was gratifying to find an expert in the use of technical simulations, and a former manager of Qantas Simulation Services, supporting this position. At SimTect 2000 Roy Page reflected on the history of mechanical simulators during the previous seventy years and proposed that '*it is appropriate to reflect on our history, so that organizations such as SIAA can carry on the tradition'*

But that was as far as I could take the argument for the benefit of historical precedent, until I began to look more closely at the thrust of my argument. Then I realised that I was drawing my historical *precedents* from three particular contexts of human society, which in turn provided the basis for identifying how to *translate* them effectively to other contexts. The next section explores these three contexts and the particular contributions of simulations and games from each one.

Simulations and games are abbreviated representations of human activity. As human behaviour, knowledge and culture has evolved, individuals and groups in each context have adapted games and simulations to suit their emerging needs and situations. The three contexts each have specific attributes offering value to the modern-day facilitator of games and simulations, and are respectively:

1. Military uses of simulations
2. Religious uses of simulations
3. Children's play

Contributions from military games and simulations

The form of military simulations and games

The earliest military uses of simulations and games were probably conducted on 'sand tables' with surfaces constructed to represent specific terrains on which battles were to be fought. Drawing on mutually agreed assumptions, concerning the management of conflict and ways to achieve victory, the action would focus on attempts to 'out-think' the opponent. This was done by using what was known of their existing military strategy, combined with the players' understanding of how their own resources could be applied to specific circumstances. Model (or 'toy')

Page, R. L. (2000). Brief History of Flight Simulation. SimTecT 2000 Proceedings. Sydney, The SimTecT 2000 Organisaing and Technical Committee**:** 11-17.

soldiers were used to represent the opposing forces in such exercises, and examples have been found in various archaeological sites[16] (Tunstill 1971).

Today a 'war game' or 'exercise' might draw on a variety of resources—including computer-based representations of logistics, movement and communication plans, combining with on-the-ground activities of men and materials, acting in concert with computer-driven scenarios and intensive strategic-level analysis of the moves and counter-moves produced in each cycle of the action. In earlier times, with fewer resources and simpler concepts of warfare, the process would have also been simpler, but no doubt with just as much intensity and attention to detail.

The well-known game of Chess appears to represent a 'battle' between two combatants in a form of mental warfare, and a brief exploration of its action can help demonstrate underlying principles informing the action in military games. In chess two players:

a) share a 'playing space' (a board of alternate black and white squares)
b) possess identical resources (in 'war games' these may not be equal)
c) behave in accordance with pre-determined rules

Players' abilities to apply strategy and skills within the constraints of the rules are a key factor in winning. Such strategic capability emerges from a combination of understanding the rules and continuously improving one's skill.

In modern military exercises the model underlying chess is still used—with three specific differences. One is that the players usually work in separate rooms or locations where they cannot see each other. Secondly, depending on the context being modelled, the players may not have access to precisely equal resources. Thirdly, there is an 'umpire'. While chess players do not usually rely on a third person to report or validate their moves, in military exercises players consider their

[16] it is interesting to not that in the 21st century, whose technology provides 'virtual reality' simulations in ever increasing electronically-generated detail, there is still a lucrative business in the design and use of such 'model soldiers'.

options, make their decisions[17], then notify the umpire. The role of the umpire is to affirm the validity of each move and convey it to the other player. All three have 'maps' or representations of the battle site, and each player manipulates their resources on the 'field' in turn. Moves continue back and forth as they play out the rituals of battle, with the umpire adjudicating. Since learning is central to the process, the discussion (debriefing) of moves, motives and outcomes is usually lengthy, with decisions made, and consequent game activity, assessed and analysed in detail.

While the use of games like Chess, and its related forms Wei-ch'i (China) and Go (Japan) as tools for teaching concepts of military strategy and manoeuvre has long ceased, at least one observer[18] noticed the way some of their features were re-played in the Vietnam conflict during the 1960's and 1970's. In this analysis he began with the proposition that although Chess and Go had shared origins in early oriental board games each had taken on quite different characteristics, especially in regard to their definitions of 'winning'. In Chess, victory is achieved through 'capturing the king'. In Go, victory is achieved through possession of territory on the board. This observer drew an analogy with the war in Vietnam—suggesting that America's ultimate failure was due (in part) to reliance on assumptions that success involved 'capturing the leader'. He argued that this was inherently unlikely, since America was playing an opponent who regarded 'territory' as the only measure of victory, and had no single 'leader' whose capture would signal 'success'.

A recent example illustrates just how difficult it can be to recognise when assumptions underlying participants' behaviours may not be valid. In the northern summer of 2002, retired US Marine Lt General Paul Van Riper 'role-played' Saddam Hussein in 'Operation Millennium'—a dress rehearsal of 'new' USA military planning concepts. Operating within the framework of a 'free play' simulation Van Riper began using unconventional[19] approaches to defend 'his

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[17] This involves placing the representations of their units to the best possible advantage on a map, sand table, computer-mediated image, etc.

[18] The source of this anecdote is no longer available. It was first encountered during the late 1970's in a now out-of-print newsletter.

[19] 'Unconventional' in that they were based on assumptions other than those regarded as 'typical' military thinking

territory' of Iraq. As these proved successful against the American 'Blue Forces', the umpires began to block many of his orders in order to keep the US forces in play. Van Riper quit the role when he discovered the umpires were actively countermanding his orders to his 'troops'.

> *"Nothing was learned from this," he says. "A culture not willing to think hard and test itself does not augur well for the future." The exercise, he says, was rigged almost from the outset.* (Borger 2002)

Van Riper's experience is an example of the difficulty of actually achieving the kind of neutral environment required for a realistic simulation. Its significance for this thesis concerns both the expectations that participants have about the role and behaviour of players *and* facilitator, as well as the continuing difficulty individuals may face in leaving aside their 'taken-for-granted' beliefs about the world. In particular, his experience is a salutary tale of how facilitators with limited knowledge or capabilities may be tempted to take more control than is appropriate.

In brief, military simulations are representations of conflict with opposing 'sides' applying their understanding of the 'rules of war' in an effort to be the victor. They may be played on media as diverse as sand-tables, maps, boards or computers, or as actual field exercises.

*A*ssumptions underlying military usage of games and simulations[20]

Most military forces use some form of simulation/game activity to prepare leaders and service units for combat. Three particular basic assumptions underlie their design and use. The first is that conflict is something that is inevitable (even provoke-able), manageable, and somewhat predictable, and which can be operated according to established 'rules of war'. The second is that there is an opponent who may, at some time, draw them into conflict—or conversely that there is someone who can be drawn into conflict, if the goal to expand power or territory! Of must interest to non-

[20] In this discussion I have not included reference to mechanical simulators widely used by military forces in preparing individual soldiers for effective use of specific items of equipment. Although these fit within the 'field' of simulations I am limiting the discussion to consideration of simulations and games that represent the interplay of opposing 'forces' in action.

military users is the third assumption, namely that simulations and games are a vital tool for developing strategies to manage such conflict, as well as helping to create or predict possible outcomes of actual or hypothetical engagements.

Working in the first quarter of the nineteenth century staff at the Prussian Military Academy were the first to refine military usage of simulations and games into their contemporary form. They called their designs 'Kriegspeil'[21], and their system was gradually taken up by other military planners and educators.

Their designs addressed issues of logistics, troop movements, time management, and the effects of weather and chance, taught young officers about the tactical step-by-step basics of warfare, and assisted senior staff to consider possible consequences of alternative battle plans. They assumed that such processes could help to predict the possible outcomes of specific manoeuvres more accurately. They also assumed that conflict would be between two or more military forces, of either equal or unequal strength, and that their basic purpose is to protect the rights and lives of an uninvolved civilian population[22].

Kriegspeil was not so much a unique invention of staff at the college as an intelligent, finely crafted re-working of previous attempts to model warfare. They recognised that it was no longer viable to appoint officers to command positions without appropriate preparation. Where this had traditionally been gained from time 'in the field' of conflict, this was not always possible. Rather than relying on cadets learning appropriate skills and knowledge by memorising how others had 'done it', 'Kriegspeil' engaged players in the process of 'battle' without excessive expenditure on men and equipment.

The advent of 'Kriegspeil' introduced cost-effective training processes that, over time, have also proved to be accurate predictors of the outcomes of many military

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[21] This is a German word literally meaning 'war play' and whish is usually translated into English as "war games" See http://www.leedswargamesclub.fsnet.co.uk/page4.html http://www.cosgrave.com/courses/hi2007/Wargames.htm

[22] While this *may* have been a valid assumption in the early 19th century it is clearly no longer so. Yet there are, as yet, few indicators that military thinking is taking into account the horrific civilian casualties that have become the 'norm' for military activity today.

scenarios—although not always producing results acceptable to the political masters of military establishments. Two examples illustrate the consequences of ignoring the potential of simulations and games to predict the results of specific strategies.

1. *Operation Barbarossa—Germany's invasion of Russia in June 1941* When German troops invaded Russian early in the summer of 1941 their line of attack was almost a picture-perfect replica of predictions made by senior Russian military strategists in the mid-1930s. The latter had concluded that Russia's best option for repelling a German attack was to draw the enemy far into Russia, lengthening supply lines, and making them susceptible to the effects of Russia's greatest ally—the extreme cold known as "Generals January and February". Russia was unready however, because the Russian leader, Stalin, refusal to consider such an option. Instead he executed or exiled almost the entire Russian military leadership (Hughes-Wilson 1999), leaving Russia vulnerable to exactly the kind of attack the strategists had forecast.

2. *The Japanese Total War Research Institute exercise—June-Aug 1941* Between June and August 1941 a group of Japanese researchers at the Japanese Total War Research Institute took part in a 'policy military exercise' on the topic of a possible war in the Pacific basin. With a mix of government, business and military players, the exercise lasted three months through several 'rounds' of hypothetical decision making. When it concluded their report indicated a belief that Japan could lose a pacific Basin conflict with America.. *The game directors and players gathered in the official residence of the Prime Minister and presented the report… The minister of the Army, who would be appointed to be the Prime Minister two months later by the Emperor, immediately banned them from stating the contents of the repo*rt.' (p 450 Ichikawa 2003)

Both examples highlight the capacity for well-designed simulations to produce accurate results, and yet not receive the response the players might reasonably have expected. Predictions may be viable—even proved in these instances— yet simulated

results of specific plans will continue to encounter non-design related factors, rendering the entire exercise ineffective although not inaccurate.

Design considerations in military simulations and games

Factors underling military uses of simulations and games include the existence of continuing potential for conflict, the benefit of planning for such conflict, the possibility of predicting the outcomes of both specific battles and on-going conflict, the inevitability of conflict in human relations and the advantages accruing from being better prepared and hence more able to achieve victory.

Above all else military designers of simulations and games aim to develop exercises[23] that replicate current realities as closely as possible in order to more accurately predict the likely passage of future events. Lives are at stake in times of actual war—and any time they are using simulations they are preparing for war. They have faced and learned to solve myriad questions underlying design considerations for contemporary military exercises, that are similarly important to contemporary non-military designers. Such questions include:

- What is to be 'on trial' in any particular enactment of a simulation:
    - The design itself?
    - The participants?
    - The assumptions underlying the design features?
    - The policies being represented in the game?
- How to simplify, yet make explicit, the terrain that players may encounter?
- How to represent *time* for complex events to be 'played out' in a few hours?
- How to structure a process to retain an external logic, acceptable to all players and observers, while not 'being' what it represents?
- How to express in sufficient detail the objectives of an exercise—without actually telling the players 'what to do next'?
- What factors to allow for when novice and expert players are involved?

[23] The term 'exercise' is often used as a 'coverall' to refer to the gamut of simulations and games used in military circles.

e.g. a novice gamer may make mistakes purely because of unfamiliarity with the model. If an expert makes the same mistake what other factors might be at work—design flaws; loss of capability of the expert; incorrect assumptions informing the flow of play, etc.

- What are the assumptions about opponents' beliefs, habits and future actions?
- How to compress extensive amounts of information into short briefings?
- How much time to devote to each stage in the process?
- What is the best combination of situational elements to most accurately represent complex and changing contexts?
- How much technology is 'enough'?
- How to account for chance events?
- How to account for deficiencies in design, identified during play?
- How to assess the quality of individual and/or unit performance?
- How to ensure that 'lessons learned' are included in future behaviour (of individuals) and plans (of operational/organisational decision makers)?

Military answers to these questions have produced highly specific forms of simulation and games design. Knowing about military concepts underlying the design and management of simulations assists non-military users and designers to be aware of the complexity of what is involved, and helps to extend the range and kinds of questions that designers need to ask to address specific purposes and intentions.

How do military designs treat the facilitator's role?

In military contexts those in charge of a war game/exercise are regarded as directors, judges, umpires or adjudicators. As much as possible they stand back from the action and observe it, with an impartial but judgmental eye. They are expected to know ahead of time what the likely flow of the action is and to understand the rules for all parties to ensure they are implemented in accord with the design principles. They do not take part in the action but are ready to make decisions on the action, as necessary.

Where simulations accurately predict future events but are ignored, they do not detract from their overall usefulness as a strategy, but such outcomes emphasise the importance for facilitators of understanding that an activity and its veracity co-exist

interdependently with the human beings who create and assess its learning outcomes. In other words the validity of a design, and its potential to be an accurate predictor of future events, do not necessarily guarantee that forecasts will be accepted. Nor does it mean that the players, and especially the umpires, will be able to correctly apply the intentions of the design.

The umpire's role, especially during the debriefing phase, is to draw out information from players to focus attention on what can be learnt from both the effect of decisions and consequent actions of individuals and groups. Umpires are expected to focus on ensuring the lessons are learned well, so that successes can be repeated and errors avoided. They will be less concerned with the 'feelings' of those identified as making errors or showing poor judgement. They usually retain ultimate power to decide results and judge the outcomes according to pre-determined criteria.

A military umpire must be neutral during the action, but has final judgment over assessment of the outcomes. This makes it quite a different role from that of a facilitator of simulations and games used for learning in non-military contexts. The experience of Lt General Van Riper is a contemporary instance of umpires overstepping this strictly neutral role. Some of his objections concerned the way in which they were not adhering to this important characteristic of their role, and the whole episode provides a useful lesson for non-military facilitators who may similarly be tempted to intervene inappropriately to 'force' outcomes that they require rather than allowing the experience to be what it is and then learning from what happens.

Only some specific forms of simulations and games (those called 'closed' in the following chapter) will allow such a role for the facilitator, and then usually only in terms of conveying information about the correct answer to a puzzle or task that is being undertaken. Nonetheless this 'umpiring' role provides a useful initial perspective for facilitators to use when developing an understanding of how to occupy the role for themselves, especially in regard to the kind of power that the role can possess.

Key words

As this review of military contributions to simulations and games was written and re-written, certain key words began to stand out. When I stood aside from the flow of the writing, I realised that listing these words was a useful way of thinking about similarities and differences among military, religious and children's simulations and games—the three historical contexts I am examining.

For example the existence of an opponent is a basic assumption of military simulations, and it seems safe to suggest that an adversarial mindset exists within, or is created by, such an assumption. The win/lose framework that this sets up, while essential for success in a military context, does not suit all contexts where simulations might be used for learning. On the other hand, a key purpose of war games is to prepare players for future responsibilities and tasks, using realistic and interactive models of their future 'workplaces'. This purpose is shared with contemporary educational gamers, and partly explains how I felt I could safely draw on military precedents as a rationale for using simulations in non-military contexts.

Other military considerations include addressing—in a cost-effective and timely manner—issues of strategy, tactics, logistics, forecasting, operational programs and options, and of course the validity of theoretical plans. The list of 'key words'—provided in Table 2 on the following page—emerged from this analysis and provides a list of highly useful themes and concepts that modern educators can draw on when working on designs for contemporary issues.

Themes	**Issues**		
Logistics	**Readiness of people and equipment**	**Availability of Resources**	**Deficiencies in our/their resources**
Conflict	**Degree of Intervention**	**Suitability of form**	**Teamwork in times of conflict**
Forecasting/ Prediction	**Tactical level action**	**Operational level action**	**Strategic level action**
Feedback	**Testing/ Trialling**	**'Trial and error' in 'safe' conditions**	**Modelling time**

Table 2: Key words from military games and simulations

A final note about the military context

While the military notion of modelling 'war' may be of no interest to non-military users conflict remains a basic factor in human relations, and questions of 'When conflict?' 'When cooperation?' are a frequent theme in business games—see for example 'Prisoners' Dilemma' (Helfrich 2003) and 'Up and Down the Organisation' (Plaisier 1980). However, it is not uncommon to find that revealing military origins and influences on contemporary design and use of simulations is counter-productive if participants are opposed to war.[24] It is a paradox that the very factors I first regarded[25] as an effective argument in favour of their use, may themselves be a cause of resistance to their use! This can also occur if mention is made of religious and children's play[26] as contributors to the features of simulations and games.

Facilitators, encountering such resistance, must emphasise that they are drawing on military/religious/children's play as precedents solely in regard to the *aspects of the designs for learning* that create them. That individuals are pacifists opposed to war does not remove conflict, belief and fun from the panoply of human behaviour.

Contributions from religious games and simulations

What are religious simulations and games like?

Early religious practitioners who chose games to impart their message had found a way to educate and ease fears without proselytising. The fact that doing this via games and simulations ensures that lessons are well embedded and easily remembered, is an insight from those ancient games designers that is of continuing benefit for contemporary designers and facilitators.

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[24] The 'rights' and 'wrongs' of war and milliary uses are not the concern of this chapter. It is however worth noting that some participants in workplace settings do find the idea that 'war' contributed to simulations' emergence as a learning strategy is enough to make them resist their use—regardless of their efficacy and relevance in terms of adult learning principles and other theories of experiential education.

[25] And clearly still do.

[26] Discussed in the next two sections.

Religious traditions seem to have made use of experience-based learning activities for conveying moral beliefs and attitudes for at least as long as military traditions. Three particular features of religious simulations and games stand out for attention. Firstly, many of them appear to have used a form of board game. Secondly the use of a dice to represent the operations of 'chance' in life situations was originally a religious device, and thirdly dramatic enactments have been employed for the purpose of teaching particular moral precepts.

A well-known board game that was originally a religious teaching tool is now commonly called 'Snakes and Ladders'. It was first used in the Hindu tradition to teach moral concepts, and is an ancient indicator of this application of simulations and games, having been around for probably a thousand years (Johari 1984). Players use random throws of a dice to determine how their movement along a pathway leads to 'enlightenment'. They climb 'up' ladders to approach their goal by 'performing good deeds'. They slide 'down' snakes, away from the goal, by 'committing bad deeds'. Chance has a great deal to do with the outcome, so the lesson is about the randomness of fate as well as the benefits of doing 'good'.

Dice themselves have ancient origins, being associated with *'sortilege',* which is the casting of lots to divine the future. The English language still retains the phrase 'dicing with death'—which is what ancient users of the dice probably saw themselves as doing in an effort to manage the chanciness of life and navigate successfully through the myriad uncertainties around them. Based on surviving images of it, the Egyptian game of 'Senat' (Bell 1979) appears to have been an example of such a game.

During the medieval era, western religions relied extensively on dramatic enactments to convey messages concerning moral and social ethics, and lessons about 'truth' and other virtues. In the wider context of simulations and games, the religious use of dramatic enactments is important. Where military simulations and games strive for detachment and objectivity, religious games and simulations represent and explore the emotion-charged states that can produce apparently irrational aspects of human behaviours, especially in situations involving stress, danger and uncertainty.

Of the use of religious games in more recent times, an Encyclopaedia Britannica writer notes:

> *The historical boundary between divination and pastime is ill defined. Board games doubtless were part of the mystical equipment of sages and soothsayers, later adapted for relaxation and pleasure. As late as 1895, when the French were attacking the capital of Madagascar, the native queen and her advisors relied more on the supposed prophetic result of a game of Fanorana than on the actual performance of their army*. (p 1149 Encyclopaedia Britannica)

In contrast with military usage, simulations and games have generally not remained a part of modern western religion practice. However Baker and Marshall (1974; 1984) and Robertson (Robertson 1989) provide examples of applications in contemporary non-ritual-related religious and ethical educational contexts respectively.

Baker and Marshall produced a contemporary set of religiously influenced simulation designs for the Uniting Church in Australia. Their books were published at a time when the Uniting Church was establishing itself as an entity separate from the Presbyterian and Methodist congregations from which it derived. Every activity is explicitly intended to promote a particular moral stance and behaviours. While they are suitable for a variety of other contexts, a facilitator choosing to use them in secular settings must be alert to the explicit religiously oriented nature of their design, and hold in mind the fact that the activities promote a more values-driven response than activities not underpinned by such motives.

Robertson has created much contemporary interest in exploring social issues through use of hypotheticals, a derivation from medieval dramatic enactments, which he uses to explore moral dilemmas. While based on clear, rational, unemotional data, a well-conceived and managed hypothetical incites a wide array of human emotions. The purpose is to help audiences and participants gain new insights into their own—and others—belief systems and values dilemmas.

In other words, religious forms of simulations and games are intended to directly engage emotions and draw on ‘non-rational’ decision-making processes, rather than

treating only logical and analytical processes as valid, as is done by the military. Religiously derived themes focus attention on humanity as susceptible to the forces of emotions and not always readily amenable to reason. Their incorporation of such susceptibility is an important contribution to a modern understanding of simulations and games for learning.

Assumptions underlying religious uses of simulations and games

Despite the secular nature of most modern political structures, all societies have some degree of religious influence. Similarly, regardless of whether individuals have a religious or non-religious up-bringing, the cultural frameworks in which they have been raised will contain values that reflect the dominant moral and ethical stance of the society of their birth and early childhood (Campbell and Moyers 1988).

Assumptions underlying religious uses of simulations and games concern the value of teaching about the influence of chance on life circumstances and events, the manner in which choices and decisions produce 'good' or 'bad' outcomes, and the uncertainty and fragility of life itself. Thus religious precedents provide clues on how to use simulations and games that work with the emotional and a-rational forces in life, and highlight how values and ethics based on particular belief systems shape the behaviour of that society's members and culture.

This is a reminder to those who use simulations to be alert to the 'differences' that make societies and cultures unique, lest confusion arises when applying a game and simulation in a cultural context different from the one in which it was originally designed. The Japanese 'Kamikaze' pilots, who chose honourable death through suicide during the closing days of World War 2, were the only factor not anticipated by the US Naval College in its use of simulations to assess the likely evolution of a Pacific basin conflict prior to 1942. As a military establishment, the College assumed it understood the thinking of its potential military opponents in Japan. Not being followers of the Japanese religion Shinto, they did not anticipate the power of the idea of 'honourable death'.

The importance of understanding religious and cultural beliefs as factors in a simulation is highlighted in the example of Van Riper, cited earlier. He appears to

have had a much clearer understanding of the customs and beliefs of the culture he was 'representing' than did those who were adjusting his 'moves' to fit with traditional western military concepts of 'battle action':

> *"You're going to have to use cell-phones and satellite phones now, they told me. I said no, no, no—we're going to use motorcycle messengers and make announcements from the mosques," he says. "But they refused to accept that we'd* [his Red forces] *do anything they wouldn't do in the West."* (Borger 2002)

The difficulty of fully understanding any other culture's belief systems and religiously influenced values and traditions emphasises the problematic nature of transferring simulation designs across cultures and contexts. It can be done, but may be problematic; and I am suggesting that facilitators will benefit from having an understanding of both their own and others' social contexts and belief systems (both religiously influenced and secular), when working with or adapting simulations.

One of the most important assumptions underlying religious use of simulations and games is that it is appropriate to allow emotions and feelings into learning contexts. For facilitators of simulations and games it is vital to understand that humans respond to representations of reality in complex ways, arising from a mix of personal responses and social imprinting. These examples from my own experience illustrate this point:

1. During a card-based game intended to illustrate the value of flexible interpretation of complex instructions, one participant refused to take an action that would allow her team to finish. During the debriefing she was adamant that this course was not viable, because it appeared to her to be 'cheating', which went against moral precepts gained in a strongly religious upbringing. While the actual instructions for the activity, when deconstructed, did not involve any requirement to cheat, her beliefs were such that this was the only way she could interpret the required step. Her religiously-based beliefs would not be overturned by secular notions of 'flexible interpretation of instructions'.

2. An activity requiring participants to be loosely connected to their chair by varying lengths of twine (to signify degrees of immobility) brought up childhood recollections of being similarly bound for one participant. For a while she was unable to separate immediate activity from past trauma, and required careful guidance to return to the present.

For effective management of such instances a facilitator must have an understanding that simulations and games of this type assume that it is perfectly appropriate to engage emotional energy and recognise that it may emerge in unexpected and unanticipated ways. The individuals' responses in these situations could not immediately be understood in terms of the intended goals of the particular simulation. However understanding that religious approaches contribute to the design of such activities can lead to understanding and acceptance of such non-rational behaviour, and assist in appropriate resolution of resulting emotional experiences.

Design Considerations in religious simulations and games

Like most well designed activities, religious games may have a number of purposes. Some of these include:

- creating awareness of the transience of life
- guiding non-despairing responses to the inevitability of this state
- suggesting how to behave appropriately in challenging circumstances
- identifying the consequences of different kinds of behaviour (thus snakes represent 'bad' behaviour and ladders lead to rewards for 'good' behaviour in 'Snakes and Ladders')
- informing players about the nature of chance and choice in their lives
- demonstrating, however implicitly, that 'playing with' representations of all these factors provides emotional support, where simply dwelling passively on them may only serve to heighten emotional states without giving solace.

Religious contributions to the field of simulations and games thus emphasise the importance of life as a process of chances and choices, and composed of situations involving action based on moral values, social mores and standards. They bring to our attention the very real and present fact of unanticipated random life events. They

remind us of our frailty, of dangers confronting us, and—most threatening of all—of the unknowable nature of our destiny beyond this present life.

Games that draw on these aspects of human experience are reminders that it is thinking, feeling, vulnerable human beings who are designing and participating in these experiences. We are not automatons, but complex beings with emotions and needs that may not readily be subjugated to rational, logical analysis. Equally importantly, people can be largely unaware of the factors triggering these 'irrational' responses.

How do religious designs deal with the facilitator's role?

In most available ancient religious games the role of the facilitator is implied rather than explicit. Rules are constructed so that players are the facilitators of their own learning. In a sense the designer has taken on the role of 'facilitator' through ensuring that implementation of their design is 'self-managing'. The concept of a 'higher presence than the players' is implied, although often not obvious, when such games are played 'just for fun'.

In the earliest forms of religious games judgements about what is 'good' and 'bad', and what will and will not aid 'salvation' and ensure a safe transfer to an 'after life' have already been made and are embedded in the structure. The facilitator in these contexts may have been a 'holy person', who explained the rules and the meanings, and provided interpretations based on greater knowledge and experience. There would not have been 'judges' or adjudicators as in the military sense—the supreme entity ('God') governing the rules of the 'game' would do that.

Games and simulations that incorporate the religious acceptance of emotions and values can place quite challenging demands on the facilitator. However, the facilitator need not 'know everything' there is to be known about themselves and the participants in a simulation they are planning to run. Examination of products from those ancient designers of religious games indicate that they simply wanted their players, *whoever they were*, to understand the essentially unpredictable nature of all life, and then to learn how to manage their own behaviour within that framework. Emerging from this is a need for contemporary facilitators to develop personal

resources and flexibility to use in guiding participants to achieving their own levels of understanding, learning, and/or acceptance.

In the case studies above, the card player's beliefs and values were valid, however much they might be impeding her contribution to one particular learning event and therefore by extrapolation to real-life situations. The second woman had long forgotten the childhood trauma of loneliness experienced while her parent left her confined and unattended while working to support them both. In each case the facilitator could not have know of these hidden but powerful forces waiting to be triggered. Each activity was chosen for a reasonable purpose, and had an unintended consequence, though these did not, of themselves, negate intended learning goals.

Managing and learning from a non-rational experience, and ideally gaining valuable personal insight—rather than trying to ignore or invalidate the situation—is more important. This is perhaps a key lesson provided by ancient religious games and simulations, and a significant way in which their insights positively influence modern simulation and games design.

Key words

Terms for inclusion in a table of religious concepts concern the non-logical, moral, and unpredictable sides of human nature. As a facilitator it is obviously highly useful to have in mind a list of factors that might be encountered during the course of any activity—but it is especially important when facilitating activities underpinned by religious (social, moral, values-based) principles i.e. where emotions and consequently unpredictable behaviour can surface.

Table 3 lists the key words for religious simulations and games. It is important to note that none of the words are referring to any specific system of beliefs or dogma. All are terms referring to the most basic notions of human emotional needs, even though they may be assigned different meaning by different belief systems.

Themes	**Issues**		
Life	**Threat**	**Sacrifice**	**Death (Ending)**

The unknown	**Chances**	**Choices**	**Forecasting**
Morals	**Values**	**Espoused/in-action beliefs**	**Inner wisdom**
Unpredictability	**Uncertainty**	**Mystery and fear**	**Predicting**
Emotions	**Feelings**	**Paradox**	**Readiness**

Table 3. Key words from religious games and simulations

Although many of these words are unique, a number are also relevant to military contexts and children's play. However, even where there are similar words, their interpretation can nonetheless be different, a point that the modern designer or facilitator needs to keep in mind.

A final note about religious contributions to simulations and games

One of my students recently designed a game that exploits the overlap between military and religious concepts to illustrate the nature of the task facing military police officers (Napper 2001). His simulation requires a deck of cards, which players use to state decisions about how much 'force' they will use when caught in a potential conflict situation. Two young women each chose much more 'violent' strategies when playing a demonstration game than either of them had ever had to consider in real life. His design brought to the surface some of their assumptions underpinning the usually hidden human desire for self-protection in the face of 'threat'.

After they had each chosen 'Gun/shoot to harm' as their final move, they, and their audience, conducted an intense discussion about how much the experience had revealed about their values and beliefs 'in action', compared to what they had espoused (Argyris 1991) as their natural character. Understanding religious contributions to simulations assisted the group to make sense of apparently aberrant behaviour. This design was developed in response to a need initially thought to exist only in a military context, and has turned out to be relevant to human settings where achieving a resolution is contingent on understanding the emotions and values originally addressed by designers of religious simulations and games.

Contributions from children's uses of games and simulations

The form of children's games and simulations

The third influential factor in this trio of historical contexts is 'children's play'—literally. The form of such play is both endlessly varied and context specific. Yet many forms of play are familiar to all children, regardless of their national or cultural origins. A personal experience of the apparent universality of child's play occurred for me in a back street of suburban Moscow, when I came upon a hopscotch game drawn in chalk on the road way. It was exactly the same design as I had used a world away, growing up in a small Australian country town where, if Moscow was ever mentioned it was only in the context of the 'enemy' in the cold war![27]

Children's games, of the kind that are of interest here, are simultaneously highly structured and immensely flexible to meet the demands of local contexts. Chasing games, ball games, role modelling games (e.g. 'cowboys and Indians') rope games (skipping etc) skill building (e.g. marbles for hand/eye coordination) team games (ball games of all kinds) are all familiar to children around the world. All children experiment with their environment through play, and the capability of human beings to test out behaviour and learn from within the relative safety of 'play' was observed as long ago as Plato, who asserted that:

> *Enforced exercise does no harm to the body, but enforced learning will not stay in the mind. So avoid compulsion, and let your children's lessons take the form of play*.(p 28 Lawrence 1970)

Later on the Roman writer Quintilian considered play as *'in itself a mark of activity of mind'* (p 42 op cit 1970), while St Jerome advised the parents of a young girl:

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[27] The universality of hopscotch was emphasised during a five day post-graduate Project Management course when a multi-cultural team agreed to use the term as a metaphorical group name. No visual image was discussed, and it was almost 3 days before members checked on their understandings of the term. It turned out that everyone knew the game, but by a different name in each of the five languages spoken! Until then the intended metaphor had been incomprehensible the 'English-as second-language' group members.

> *Everything that makes learning pleasant and promotes effort is commended. The teaching of the elements...is to be done through play...she is not to be scolded if she is slow to learn; praise must be the main inducement ... Care is to be taken that her lessons are not made distasteful, lest she may conceive a dislike for them in childhood which will continue in maturer years.'* (p 50 op cit 1970)

The key concept is 'play'. While much has changed since Quintilian, and there is less emphasis on 'play' in formal educational structures (other than in sports activities), the importance of play for learning has not diminished. Jensen and Scott declare:

> *Play, as Huizinga (1950) has pointed out, is a cross-cultural universal, expressing in an almost unlimited variety of ways the primal biological urge to move, explore, discover, risk, test, master, create and—of paramount importance—have fun. At its very roots it is free, spontaneous and creative... Play...is justifiably an authentic end, a way of being, in and of itself.*
>
> *Play is a miniature laboratory in which children are protected and allowed to experiment. Children carry on play activities as long as they are interested...it is only adults who are under the compulsion of completing a formal task or of meeting set requirements.* (p 143 Jensen and Scott 1980)

Design considerations in children's simulations and games

However much children may imagine they are 'making up' the games they play, there are already implicit rules available to them—which they draw on for inspiration and to legitimate their processes when challenged. Children teach these to children. I am not referring to manufactured games available for purchase, but to the 'free-form' play of the schoolyard and un-supervised play away from adult control, where rules are inculcated in the same way that societies pass on other cultural norms and mores, through experience and practice rather than formal 'teaching'.

Characteristics of children's play include the idea of freedom of action, and release from the need to conform to externally imposed constraints. Fun is an essential feature, as is some degree of risk, and opportunities for creativity and exploration:

> *In our civilisation's language, the game is a frivolous activity. In French, the word even refers in general to games of chance and to casinos. But the game seems to be a permanent trait of all human societies, which tends to mean that it is a fundamental element of human life*. (p 9 Corbeil 2000)

Corbeil also suggests, based on his reading of Piaget and Bruner, that games have an evolutionary function of '*helping the person to learn, because what is in favour of the individual creature is what is successful within the scope of evolution.'* (ibid) He also suggests that *'...in order to really enjoy games, one has to have the ability to be imaginative.'* (op cit p 11), and gives due acknowledgement to the difficulties that this can create in highly-structured educational environments

This is a point emphasised in the book 'Playfair—a Model for Cooperative Play' (Weinstein and Goodman 1988), which advocates the application of fun, and games, to the modern corporate world:

> *Most games .. ignore the development of self-confidence and at worst destroy* [it]... *Victory has become the dominating force in the way people play—for many people, it has spoiled play altogether*. (p 22 Weinstein and Goodman 1988)

They believe that:

> *Games are like a language—they have incredible potential for helping people to make contact with one another, to connect with one another. Unfortunately, many traditional games lose out on this opportunity [by provoking] competitive interaction. [It is possible to]... change the rules by which we play—by which we play games, as well as the game of life*[28]. (op cit p 24)

All these writers emphasise a central contribution from children's games to the field of simulations and games, namely that simulations and games attempt to reproduce for adults the things that, as children, we were attempting to achieve through our

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[28] P*laying with* 'the game of life' is explored in Chapter 3 in regard to the work of James Carse.

play. 'Playing with' learning was what we did as children; now as adult participants in simulations and games we are invited to again 'play with' ideas and possibilities.

Thus the design considerations identified as underlying children's play include:

- Simplicity—a stripping away of all extraneous factors to create the central nature of human experiences for play
- Improvisation—making use of materials that are available
- Trial and error—ready acceptance of the possibility of temporary failures and potential for future successes
- Skill development—as noted earlier many children's games specifically address a variety of skill needs using playful versions of adult activities
- Competition and cooperation—as equal and opposite reactions to life experiences. In adulthood we frequently find this concept much harder to conceive of that we did as children!

Children's games seem designed to answer such questions as:

- How do we make sense of this puzzling difficult world we are in?
- Who are our 'friends' and how do we build friendships?
- How do we use these *things* we are being told we have to learn to use?
- How do I learn to 'fit in'?
- Who will help me? What must I do to ensure they help when needed?
- What 'rules' make some things acceptable and others not?
- When do we 'speak up' and when do we 'stay silent'?
- What things are the most fun? How can we get the most out of them?

As children we worked out answers to such questions while playing with peers, and take them forward into adulthood unconsciously. Acknowledging their contributions to contemporary simulations and games enables designers to incorporate such essential elements as fun and play, trial and error and a perception of life as something to be learned, and learned from.

How do children's games perceive the facilitator's role?

The 'facilitator' in children's games is a very slippery concept. At various times it may be the 'designer' of a particular episode, the most experienced player, the child who has a greater need 'to lead' (and is learning about how to do so, as they play), or the child who has 'won' the right to lead that round. A facilitator may, at different moments in a game, be a judge, an umpire, a guide or a helper.

The flexibility of the role is a good model for application to the kind of simulation I am concerned with in this thesis. Much more so than in military and religious contexts, a facilitator who uses children's play as their model can feel confident about changing roles as the occasion dictates and their instinct directs them.

Key words

Some words in this table also appear in the first two. All three contexts have some overlap—as discussed below—while also having their own unique characteristics.

Themes	Issues		
Awareness of self in context	**Feelings/ Emotions**	**Learning 'to be'**	**Examining possibilities**
Coping with unfamiliar	**Uncertainty**	**Mystery and fear**	**Emotions**
Creativity	**Experimenting**	**Stretching known/ familiar boundaries**	**Trial and error in 'safe conditions'**
Imitation	**Rehearsal**	**Practice**	**Understanding 'good/bad'**
Enjoyment of life	**Physical skills / strength**	**Fun and play**	**Exploration**

Table 4. Key words from children's games and simulations

A final note about children's play

One problem arising from including children's play in a discussion about adult learning lies in the separations that we—as adults—tend to make between 'child' and

'adult'. This is exemplified in the verse from Corinthians in the Bible that is often quoted by people disapproving of levity in learning contexts:

> *When I was a child I spake as a child, I understood as a child, I thought as a child; but when I became a man I put away childish things.*
>
> (Partington 1996)

Such an attitude implies the need for adult seriousness in all things, as in the traditional reliance on 'teaching' to induce 'learning' in formal educational settings.

Children, having no need for such formality, instinctively create learning environments that create a 'communication gestalt[29]' (Duke 1974), integrating the learning they require into activities replicating aspects of the adult world they know they must enter but find mysterious and even fearful. But children's play does not attempt to model in realistic detail (as the military would), nor does it overtly include 'lessons' to be learned (as in the religious approach). In fact children consider only that they are 'playing' and enjoying the moment. The 'lessons' learned may be quite unconscious, although profound.

While workplaces as diverse as police services, airlines and armies use simulations and games to convey this 'communication gestalt' of knowledge, behaviour and attitudes required for successful achievement of organisational goals, they are unlikely to connect child's play and the 'serious' nature of what they are 'teaching'. The pity of this is that allowing the fun and excitement of children's play into the learning space could encourage a greater degree of enthusiastic participation, as well as drawing on individual creativity and self-motivation. Expectations about learning as a 'serious business' create difficulties for educators wanting to generate powerful learning via apparently non-serious alternatives.

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[29] Gestalt psychology has 'sought to pay attention to, and conceptualise, the significant features inherent in experiential wholes. In using the phrase 'communication gestalt' Duke is referring to the nature of simulations and games as an experiential whole whose key purpose is to convey concepts whose meaning is more than words cay say.

At annual ISAGA conferences I have met highly professional educators from around the world who are enduring restrictions on their teaching practices for this reason. Assumptions about the frivolity of play obscures the insights of children about the vitality that play gives to learning, and inhibit efforts to use simulations and games for learning, and deny the claims of Caplan and Caplan, as quoted by Wilkinson:

> *...that the power of play is all-pervasive. We...examine the power of play...so that we might garner for child play the prestige and wholehearted public support it deserves.* (p 20 Wilkinson 1980)

Designers of simulations and games seldom seem to be aware of how their sophisticated designs have themselves been predicted by children playing—and remain (by and large) unaware of how their own childhood experiences influence their choices and actions in the process of creating adult versions of the ways they learned as children.

As children we knew the value of playing to learn—as adults we seem inclined to forego the pleasures of having fun while we achieve new goals. Simulations and games offer both learning and fun in abundance. Perhaps it is time to re-think the values derived from having fun, and look more deeply into what can be learnt from children's games, and to re-write the message to the Corinthians as:

> *When I was a child I spake as a child, I understood as a child, I thought as a child. But now I am an adult and can put 'childish' things to new and more sophisticated uses!*

Summary of the three historical contexts

To sum up: Two benefits are available to facilitators who develop a sound knowledge of the history of games and simulations. The first is that authoritative precedents can provide legitimacy and justification for the use of games and simulations—to facilitators wishing to use them, and those entrenched in a passive learning system, mistrustful of alternative strategies.

The second is that an informed understanding of how such tools have been, and are currently being used in particular settings, can assist in identifying what are appropriate forms for current needs, and how to achieve more effective application of them in various contexts. Such understandings enable designers to create optimal learning environments. It also contributes to a facilitator's ability to make well-formed decisions about effective processes to employ, influencing factors to be aware of, and appropriate and timely methods of facilitation and/or intervention.

Three main historical sources contribute to this body of information:

1. *The military approach* takes the form of practise in simulated environments, actual field games, and strategic planning sessions. This approach emphasises logic, facts, data and strategy. 'Winning' means defeating the enemy by overwhelming or out-manoeuvring it. Facilitation has a directing and judging role.

2. *The religious approach* has as its goal 'to educate' individuals about making decisions or taking action based on sound moral or ethical values. Working with the turmoil and unpredictability of human life and character is central to this approach. 'Winning' means finding inner resources to make sound choices when faced with life's challenges. Facilitating has a guiding and informing role.

3. *Children's play* is frequently spontaneous with no clearly discernable goal, yet often has elements of acting out the so-called rational, logical activities of adults, providing participants with a 'safe space' in which to explore feelings

and develop character and morals needed for mature functioning. Children's games are often about skill-enhancement—physical, mental or emotional. 'Winning' in children's games means being the most skilled at the task at hand, be it to overwhelm or out-manoeuvre opponents (eg. winning at marbles), or to find the inner resources to successfully deal with a challenge (eg. finding the courage to jump into the deep end of the pool) the domain of the military and religious systems respectively. Facilitation is flexible and changeable, in accord with contextual needs.

Children's play overlaps the other approaches, and also provides one unique characteristic—they have fun! And—as much as this may surprise traditional, didactic educators—children's systems of self-education, via games and play, work extremely well!

Each of the factors used for comparison was chosen for its relevance to the development of facilitator capabilities, as much as for its intrinsic value in contributing to this analysis of the three contexts explored. As a whole the table offers a useful way of thinking about the overall argument in this chapter, namely that simulations and games have a rich tradition contributing to their validity and power as contemporary learning strategies.

The ways in which these three contexts contribute to contemporary designs and uses of simulations is summarised in Table 5 on the next page.

	Military	Religious institutions	Children's play
Goals	Win through defeat of opponents Occupy territory Achieve wealth Wield power	Win at 'life' Gain control of self Develop personal ethics Learn to accept fate	Have fun (temporary 'wins' and 'losses') Trial new experiences Experiment with options Develop character
Techniques	Highly structured Analytical/rational Conflict creation Win-lose Competition assumed to be 'two sided' Assumptions about potential to win power Closure arrives with victory/defeat	Structured Emotionally oriented Conflict managing - dealing with uncertainty Players 'competing with chance events' Assumption of a 'higher' authority Closure arrives at point of 'acceptance' of 'fate'	Both structured and unstructured Conflict creation and conflict management (at different times) Competitive 'sides'—cooperative teams Assumptions about 'learning how to' Closure is arbitrary ('time to go home')
Focus of action	Facts Planning Strategy Competition among players	Feelings Understand self and others as human Dealing with uncertainty and the unknown	Fun! Learning 'in the moment' without judgment of content Greater discovery of the world and self
Key points for modern educators	Be alert to potential rigidity of structurally driven conflict Accept conflict as part of human relations (neither 'good' or 'bad'—it simply exists!)	Be alert to the power of emotions Accept feelings as valid component in learning contexts Know your own emotional 'state'	Accept the delights of 'fun'! Enjoy the challenge of 'free form' play Acknowledge and make use of the 'child' within the adult

Table 5 Comparison of military, religious and children's play contributions to contemporary simulations and games

Afterword

This chapter began with an examination of how I developed an understanding of myself in the context of being a PractitionerResearcher, an historian and a facilitator of simulations and games. It then examined contributions to the structure of contemporary simulations and games from three historical contexts.

A central argument in regard to personal development is that one's present 'self' its deeply embedded in the influences of early experiences and interests. These may be altered and amended by life's circumstances, but will continue to contribute to the selection of factors that become the central focus of one's work and life path. For my part, I loved history and planned to be a history teacher. 'Life' got in the way of that ambition. But history continues to be a mechanism shaping many aspects of how I view the world, and especially how I argue for, design, and use simulations and games.

It was partly this abiding interest in history that influenced me to develop an effective precedent-based argument for the validity of simulations and games for learning. I eventually came to see that quite specific historical examples actually contribute to contemporary simulations and games.

The three contexts examined—military 'war games', religious games and children's play—all make use of representations of reality in quite different ways, and yet together contribute a wonderfully rich and varied set of approaches, processes and guidelines. These of course are re-shaped endlessly into experiential activities for contemporary adult learning —frequently without either designer or user being more than marginally aware of the historical traditions they are drawing on.

Chapter 3 takes this understanding and applies it to a consideration of the manner in which simulations and games are currently classified by various researchers.

Chapter 3

The value of classifying

Introduction

Searching for the right game or simulation can be a hit and miss affair. Those seeking advice on 'which game to use' are likely to be met with a host of prior questions concerning the educational context, learning outcome and alternative strategies for achieving it, time available, prior experience as a facilitator, etc. This chapter opens with two examples to illustrate this.

A: Web-based enquiries

The North American Simulation and Gaming Association (NASAGA) runs a web-based listserv where enquiries on games and simulations are posted for discussion and advice. Listed below are some typical questions and answers. The requests give a taste of practitioners' needs, while the replies indicate how complicated it can be to even begin to address these needs.

> In NASAGA@yahoogroups.com Cagan Irmak <email address withheld> wrote:
>
> One of our client [sic] asked for a simulation or a long game from us to use in their dealer meeting. They are a multinational IT storage (huge hard disks and stuff) company. They wanted the simulation should be related to their area of work. Can anybody help me on that? Cagan Irmak, Keys Consultancy and Training
>
> *(re above request) Subject: Re: Simulation or game request*
> *Date: 25 Aug 2003 02:16:36 From: Joshua Reid* <email address withheld> replied:
> *I'm happy to help, however your email really wasn't very clear about what you wanted. I can help you further if you can at least answer one question:*
> ***What do you want the participants to learn?***
> *Happy to hear from you again, Josh*

> In NASAGA@yahoogroups.com Stewart Woods <email address withheld> wrote:
> Has anyone a recommendation for games dealing with basic semiotics (1st year uni)?
> *(re above request)*
> *Date: 08 Aug 2003 01:35:59: "Chris Saeger"* <email address withheld> replied:
> *I wonder if you could give some examples of the semiotics concepts you want to explore or demonstrate using simulations and games. That would make it easier to give you some thoughts on your request.*
>
> In NASAGA@yahoogroups.com iijeffsii <email address withheld> wrote:
> Date: Wed, 26 Feb 2003 21:52:18 -0000
> I am looking for some ideas on activities to do with groups on a couple issues:
> Diversity and Listening without Judgement or Assumption
> We are training a group of 60 student leaders, and could use a few more ideas.
> Thanks! Jeff
>
> *(re above request) Subject: RE: any good ideas....*
> *Date: 26 Feb 2003 17:10:15 –0500 : "Sonia Ribaux"* <email address withheld> replied:
> *Barnga is a very effective game for diversity. It's a simple card game (ah, but not so simple after all…). It would also address assumptions and communication* ***but not*** *listening without judgement.*
> *It was designed by Thiagi and Barbara Steinwachs. Look here for more info:*
> *http://www.interculturalpress.com/shop/barngatext.html*

Without an adequate knowledge-base for identifying more precisely the possible range of desired learning outcomes, making a final choice in each of these situations is likely to be problematic. Understanding the complex nature of simulations and games can be achieved in several ways and is inevitably an on-going process, since more recent experiences with an activity may support and/or challenge previous episodes of its use.

Knowledge of the particular form of an activity, and its relationships with an array of other activities, can provide users with a deeper understanding of both the broader field and particular idiosyncrasies of an activity selected for particular needs.

B: A hypothetical conversation

The following hypothetical scenario is based on actual conversations I have had with peers and students contacting me for advice on what game or simulation to use for a specific purpose. It illustrates how knowing about classification systems helps to select relevant activities for a specific need.

Alex: Hi Elyssebeth, it's Alex here—have you got a few minutes? I've got a problem that I'm hoping you can help me with.

Elyssebeth: Hi. Sure, I can spare a few minutes. What's the project?

Thinking: He's just finished the Simulations and Games elective, I wonder if it's about that? Get the content/context clear first.

Alex: Two of our work units are merging. They do similar work in different places. Branch 1 is closing. We're retaining all staff, but moving them to Branch 2. They do the same work, but there's been little contact between them—and there are signs of a rivalry that may make the merger difficult. I'm designing a workshop to plan how to merge their work and hoping you can suggest an icebreaker or a simple game to surface such issues.

Elyssebeth: Who's attending? What else is planned? How long do you want to spend?

Thinking: Tricky! Likely to be lots of emotional stuff. Perhaps hidden conflict? It's more than a game he needs. Wonder if he's aware of that?*

[*'game' = time limited; win/lose (competitive); rule driven; not 'real']

Alex: The General Manager is explaining reasons for the closure. Everyone from both Units is invited, and managers of adjoining work units—about 25-30 people I guess. The GM is so concerned about possible future problems that we have a whole day, plus on-going work. There are lots of procedural tasks to do, but we can give this an hour or so.

Elyssebeth: That's a lot of data to sort through!

Thinking: I wonder what the GM's real concerns are? Is there 'hidden conflict'? Procedural planning? Something to lead into this? Alex hasn't mentioned time. Perhaps something to help in planning tasks. Perhaps a case study about a similar situation?*

[*case study = in depth analysis; fact based; serious, more 'real']

Alex: And how! I really want to make this work but there's so much to think about, that I almost want to 'just tell them' and let them get on with it! But I know that only defers the problems and there's even less time later!

Elyssebeth: Are there specific time constraints? When is the GM speaking? Is he or she staying all day? Do you want 'serious' or 'fun'? Can you have more than an hour? Have the two groups met before?

Alex: I'd rather it is more 'fun' than 'serious', but the GM's staying all day so it will need to be relevant. Some people may have met at regional functions, but I don't know for sure. The work on combining the procedural stuff is vital. We will need lots of time for that, but I haven't set the timetable yet.

Elyssebeth: Whatever you choose, it needs to make an explicit point, but not be so 'real' as to be overtly confronting; and it should mix up group members so they begin to lose their 'us' and 'them' identity.

Thinking: A case study will be too clinical and abstract. Some physical action and a lot of talking to each other about 'something else' (than their impending merger) might help. But it will have to a close simulation of their actual context.*

[*Simulation = representative of the real; no 'fixed' time; focus on events rather than rules.]

Alex: *(Eagerly)* Exactly! And the more I can get everyone to talk to each other during the action and the debriefing, the better chance they have of coming together across the existing boundaries.

Elyssebeth: How confident are you, that you can manage the debriefing of 25 people? That's a lot of talking and it will probably be 'all at once'! And I'm guessing that the GM is expecting a lot of emotional stuff as well.

Thinking: He's using the 'right' words (action and debriefing) but how confident is he? Looks like it will have to be a simulation/game to assure a satisfactory outcome. Better check a bit before I suggest anything.*

[*simulation/game = elements of all three; combination of 'fun/play' 'real', 'analysis']

Alex: I thought about that, and asked the HR Manager for help. He's got lots of group dynamics experience, and can be a participant or observer or whatever I ask. We'll combine ideas and work together on whatever comes up.

Elyssebeth: I've been thinking while we've been talking and it seems to me that you need something that's more than just an icebreaker or a simple 'game-type' activity to play or a case study to talk about. And while it needs to be close to their own reality, if it's too close you won't get any honesty—it might hurt too much, there'll be no space for dispassionate discussion, all you'll get is their emotions.

Alex: Yes! I'm really concerned about that, and nearly decided to limit the workshop to the task stuff, but the way the GM expressed her goals for the day told me I'll have to address the feeling stuff some time—so 'better sooner' is my thought. So what are you thinking of?

Elyssebeth: The activity needs to be early to create a 'different' kind of environment. They'll probably be expecting to 'be told' and you want them to engage with the tasks ahead and not be passive. It would probably be best situated straight after the GM's talk—then design the day from there.

I think you'll need to allow more than an hour—emotions require more time to be cared for than 'tasks' do! At the very least you'll have to be flexible with the timetable, just in case!

And you'll both need to be confident that you can manage a very open-ended discussion where anything might emerge—while keeping your eye (and theirs!) on the goals for the day.

Here's my suggestion—I'll fax you the instructions for two kinds of activity that you'll know I call 'simulation/games'. Read them through and think about each one. Then call me back to talk about which one suits your purpose, and we can work through what might happen and how to address it. They are called *"Furnishing Your Home"* by Tom Plaisier and *"The Eternal Triangle"* which I built with a friend from various other ideas.

Classifying games and simulations

The content of this chapter emerged from consideration of how I have applied my knowledge of the field of simulations and games to guide other educators in making informed choices about the use of specific activities from within the field. Much of my knowledge was initiated by the need to answer requests for help from students and adult educators, which often follow the patterns of the preceding conversation and web requests. Sometimes enquirers will be as precise as 'Alex' in defining their need, but just as often they are as 'fuzzy' as in the NASAGA Listserv examples.

As a PractitionerResearcher I would dearly love to explore many questions about the knowledge underpinning the advice and support provided in such places as the NASAGA listserv and my own work advice to educators. However, being aware of the complexity of the nature of simulations and games—and of the multiple perspectives that result from varying uses and outcomes of particular activities—I am also aware of the impracticality of setting too wide a scope for the chapter. Therefore, practical considerations limited the issues for this chapter to two, namely:

1. What can be learnt from an analysis of systems developed for classifying simulations and games?

2. How can an understanding of such systems assist in categorising a simulation like XB?

Why classify?

Human beings value order, and classification systems are a well-understood and accepted way of achieving it. Having a useful set of indicators telling us how to categorise certain things reduces the complexity of every day life, and furthermore provides common ground for individuals to share and compare ideas and things.

Approaches to classification

At its simplest, classification is *'…the process of assigning individuals to classes on the basis of their characteristics'* (Attardi, Marco et al. 1998) Scientific classification systems (as noted above) position items within the total collection once only, fixing their relationship to all other items. For example the Periodic Table of Chemical Elements was so carefully constructed—according to the number of protons in the nucleus of each element—that gaps were left within it for the inclusion of elements that fitted logically but had not yet been discovered. And indeed such elements have subsequently been identified and added.

Linnaeus's[30] purpose, in developing the botanical classification system familiar to all botanists, was to simplify the naming procedures for plants. He observed them closely and developed a method of hierarchical classification using a binomial naming system — still in use today.

However, in their work on document classification, Attardi, Marco et al found: *'…the problem of classification is that the classification criterion and the classification primitives are viewpoint dependent, non standard"(p 716 op cit)*. They observed that individuals classifying various types of documents in a particular field ultimately rely on their ***perceptions,*** of both the field and the particular items, to classify the items. This means that the user's needs and perceptions become an integral part of the classification process shaping their own understanding and use, of both the system and items within it. Thus the item, system, designer and user are interconnected. For users, therefore, their *needs* become the ultimate arbiter of their choice of classification systems.

In her work in medical fields on "Explaining Expert Categorisation", (Bryant 1999) demonstrates that medical experts learn *expert-oriented 'scientific'* classification processes during their training but then draw on *explanation-based* modes of classification in their daily routines. While their expertise provides certainty in describing clear-cut medical particulars, the 'messy' world of actual practice requires

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[30] http://www.ucmp.berkeley.edu/history/linnaeus.html (2003). Carl Linnaeus. **2003**.

that they apply less certain but more practical modes of explanation in their everyday work. Moreover, they recognise that no single set of descriptive categories could cover all contingencies of current application or potential future use.

An experience described by a nurse-midwife, can help explain Bryant's findings. The nurse's expert-oriented knowledge combined with her explanation-based knowledge to guide the safe delivery of a baby, by identifying a cluster of symptoms suggesting the need for an urgent transfer of the mother to an operating theatre. Trusting the way the totality of her knowledge was guiding her, she engineered the transfer to the theatre and was instrumental in the safe delivery of the baby. Afterwards, she could not clearly describe what she had been seeing and, even during the episode, had some trouble convincing her peers about her perception of the seriousness of the situation. A long debriefing, in the course of passing on her knowledge, enabled her to identify how knowledge from both arenas had influenced her perceptions of events 'in the moment'. The significance of this for my argument is the example it offers of the ways that knowledge may be appropriately re-arranged into quite different systems of thought during use.

Researchers in the domain of knowledge management—exploring how to classify the vast content of the Internet—are developing a variety of algorithms for classifying items like email message web pages. They are using such criteria as the (assumed) needs of the decision-maker (often the reader, rather than its creator) and the internal content of each document, and demonstrating that information is not inert—that is, it is not fixed 'scientifically' in relation to all others 'bits' of information by virtue of its genesis, language or initial letters. A research project on this topic, in which I participated, and which was published in 2002, concluded that information operators need to understand that the way in which they *create* information subsequently influences how it is *used* and *managed* by themselves and others (Morrisey and Leigh 2002) that is, information is dependent on the context for its meaning and usefulness, which is similar to the case of simulations and games.

Classification systems provide a means of understanding relationships among particular items within an obviously related group. However, neither information

management processes, nor simulations and games as human activities, have the kind of fixed nature that allows them to be classified as if they operate like chemical or biological entities. A particular simulation can use a variety of materials, perform any number of quite dissimilar processes, and provide quite remarkably diverse outcomes, while retaining an 'essence' that marks its originality and uniqueness in terms of design and intent.

Using systems that are specific to particular domains of knowledge, classification can still help to identify the boundaries of a field and recognise relationships among items within it. A well-constructed classification system can also contain information to guide decision-making in regard to using items within a system.

Building a 'working knowledge' of classification systems

My 'working knowledge' is regularly challenged and extended by requests for help in selecting simulations or games for particular purposes. While I have some written records dating as far back as 1980 most requests were informal, so I have few records of the many conversations that contributed to my capability to select and/or design simulations and games for particular needs. However, as my responses were usually acknowledged as helpful[31], I gradually became aware that I possess a rich and well-defined knowledge of simulations and games.

In regard to the way in which my knowledge-base was developing, Torbert has noted that *"…the connection between experiential learning and systems theory lies in the concept of feedback…[which is] information from the environment which tells a system whether it is moving towards its goal effectively or not*." (p 27 Torbert 1972).

Thus the feedback I was receiving was extending my knowledge and ability while affirming my own reliance on learning from experience. So in fact long before

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[31] Not always however! I wrote in response to one such request: *'The simulation "Notebook" is, in my opinion, NOT appropriate to the stated aims of the course and should be replaced.'* and proceeded to offer eight separate reasons for this astringent opinion. Leigh, E. (1980). Evaluation of "Notebook".
A handwritten note, added some time later, says: 'This was not sufficient to keep the game out of the program, but did get my name bandied around and not exactly liked by the [manager and staff] of the relevant work unit'!

beginning this thesis I was using an effective decision-making process—based on a more tacit 'knowing' than a conscious awareness.

As a Practitioner, my knowledge is embedded in the moments of action, with subsequent events or requests serving as a mechanism by which to navigate through it. While I have also acquired a Researcher's interest in the underlying theory, most requests for help are limited by the time available to discuss my questioner's needs. In 1992, I co-authored a chapter in a book intended for practitioners (Leigh and Schaafsma 1992) This provided readers with an array of tools to assist them in selecting relevant activities. To some extent it codified my knowledge to that point, although at the time I was unaware even of the possibility of considering the chapter in this way.

Since then my understanding about the field of 'simulations and games' has broadened and deepened, both through my ongoing advisory role to educators, and the growth of my curiosity as a PractitionerResearcher. This has been accompanied by a parallel interest in understanding relationships between simulations and games and broader frameworks of adult education theory.

One factor influencing the development of this chapter was the need to develop a metacognitive level of understanding about the eclectic set of classifiers I had gathered. This was particularly important in terms of defending my rationale for using XB, and explaining the nature of the processes occurring as participants engage with it.

It is clear that my own development began with addressing highly pragmatic needs, then gradually moved towards considering the theoretical underpinnings of the knowledge I had acquired, before finally returning to make practical use of the knowledge in new and different ways. In the process of developing this research I concluded that a Practitioner's interest in using a classification system will be limited to issues of a highly functional nature - for example:

- Can a particular activity be completed in the time I have?
- Will it address the problems/learning needs I am addressing?

- Can I manage the learning process effectively?
- What materials and support do I need?

A Researcher's interests, on the other hand, will be quite different, involving consideration of a broader set of issues including:

- What makes any particular design more/less effective than others?
- What underlying philosophical considerations and educational principles are *not* raised by the functional nature of a Practitioner's questions?
- In what way are such considerations, either consciously or unconsciously, informing decision-making processes, and being incorporated into implementation strategies?
- Why are there so many ways to classify simulations and games? How are they used? Are some more 'valid' or 'useful' than others? Who decides? On what basis?

While the range of classification systems is both rich and varied, there has not yet been much consideration of how they relate to each other—as I became aware while developing the argument for this chapter. I was using the various systems discussed below, but nothing I read had prompted me to consider how they might relate to each other, until events intervened to awaken my interest.

A Practitioner researches classification systems

While I regarded myself primarily as a Practitioner, I found that I could be equally interested in research questions when the context was right. At the 1996 ISAGA Conference held in Riga, Latvia, one of the definitions that everyone agreed to was that the basic components of any games or simulations are 'People' (facilitator,

participants and clients) and 'Gameware'[32] (materials, instructions, structure, etc). this was developed during an impromptu session on the question of *'How do simulations and games actually work?'* At the end of a free-flowing discussion, I showed the group an image that I had drawn (reproduced as Figure 5 below) representing my summary of the discussion, and it was well received by participants.

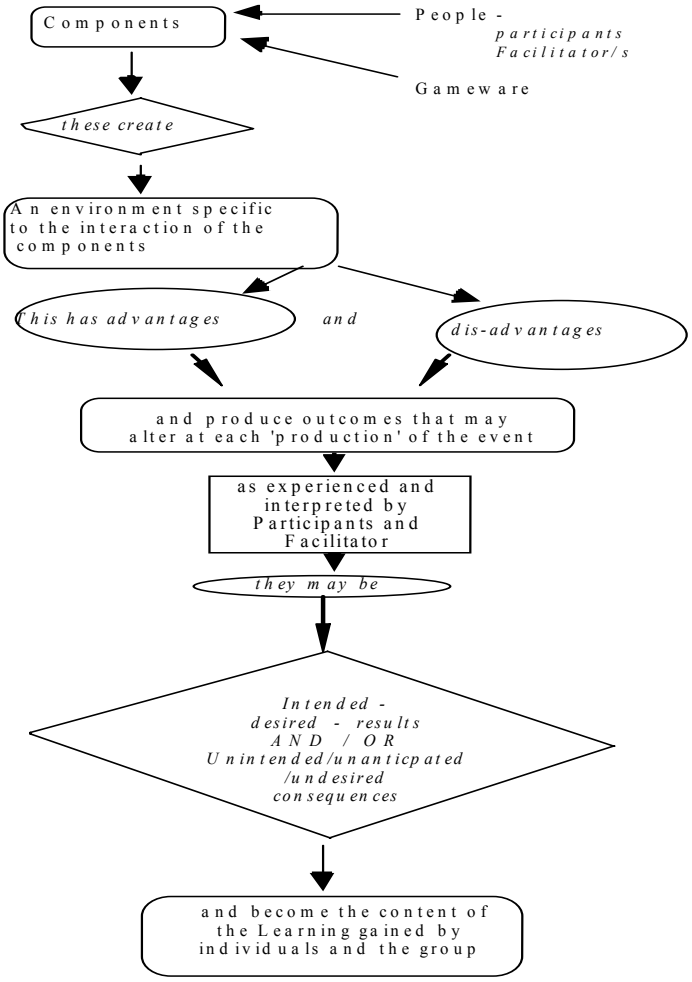

Figure 5 How simulations 'work' (from Leigh and Rising 1998)

Later this artefact of my learning was published as part of a more general review of experiences and themes in ISAGA conferences (Leigh and Rising 1998). At the time

[32] In the course of that discussion we agreed on the use of the term 'Gameware' to encompass all the materials, instructions, descriptions, rules etc. whose features combine to create the unique but inert shape of an activity.

I did not consider researching it further, despite the fact that it became a regular tool in my workshops for novices learn to design games and simulations.

Indeed, it was some time before I realised that this image could assist in guiding my analysis of the various classification systems I was using. Fortuitously[33], I became aware that most classification systems focus on aspects of the 'Gameware', and that it is quite difficult to find any that focus on the needs and contributions of the 'People'. Given this over-emphasis on one of the two components, it was inevitable that I had mostly collected systems that classify via 'Gameware', despite the fact that most of the games and simulations used in my teaching practice relied more heavily on the 'People' component.

As this chapter evolved into its present shape, I became ever more aware of the importance of the way in which knowing about a System Designer's *purpose* is of relevant to anyone intending to make use of the system. That is, the reason/s for creation of a particular classification system will shape how the system represents the relationships among the various elements. This, in turn, influences what individual facilitators understand about how, and when, to use particular games and simulations.

For example each of the classification systems examined later in this chapter was designed with a highly specific purpose in mind, without evident consideration of other possible applications or purposes. While this is both valid and reasonable, simulations and games are not mechanistic inanimate instruments, but highly organic entities with a 'life' that is likely to escape the bounds of any particular definitional framework at the first opportunity. It is also clear that the field of simulations will continue to become more complex, requiring classifications systems that address an increasing range of purposes for any particular game or simulation.

For example 'The Road Game' (Christopher and Smith 1987) was originally designed to introduce primary school students to the complexities of relationships at international borders. However the first time I played it we were given the scenario

[33] During the course of developing this chapter

of interdepartmental relationships, and on the second occasion it was used to begin the examination of real, and very tense, relationships among a group of school counsellors. In each case it could have been classified quite differently—initially designed as a 'referential game' (Duke 1974) about political geography (its original purpose) then used as a 'case study' (Taylor 1977) for analysis of interpersonal relationships (the second purpose for which it was used) or as a 'simulation game used as a case study' (Ellington 1999) the third purpose for which for it was used.

In other words any attempt to classify an activity like 'The Road Game' will be contingent on the user's needs, their awareness of the possible outcomes, and an understanding of how any classification system will position it in temporary relationship to all other similar (and different) activities. The game has not changed only the way we think about using it has changed[34].

How to classify simulations and games?

An anthology of Australian games (Chapman and Smith 1982), which I helped publish in the early 1980's, lists more than a hundred and eighty activities that are either or both simulations and games, arranged in fourteen groups or categories. To achieve this arrangement the authors chose a 'referent' system—based on what appears to be the primary teaching/academic purpose of the activity. This is a useful system in that it allows the reader to identify and focus on areas of interest whilst by-passing those that do not appear relevant. Nonetheless, despite this careful classification process, the index then provides a cross-reference of seventy-six further themes, each with references to between one and twelve entries.

The authors clearly had a purpose for selecting the initial arrangement, but became aware that it was not appropriate for all potential users, and so chose to provide a 'back-up' or alternative system as well. In doing so, they unintentionally highlighted

[34] Duke (1974) argues that danger may arise when games, designed for specific contexts, are misused by applying them to unsuitable contexts. I agree with him in regard to ill-considered misuse, but find that some designs are remarkably stable across contexts – successful outcomes from such choices are often dependent on the skill and knowledge of the facilitator.

the continuing problem facing anyone looking for, or wanting to develop, a classification system for the field of simulations and games.

Put simply, the problem is that no single classification can satisfy all the purposes and needs of all the users and designers in the field of games and simulations. While classifiers like those of this anthology do not claim any aspirations to achieve the type of validity (and rigidity) characteristic of 'scientific' modes, their classification systems do have an internal logic and serve a useful purpose. Establishing a classification system to include all games and simulations, might be beneficial but the task is likely to remain impossible, because as already observed, it is the user's needs which become the measure of the usefulness of particular classification systems and processes. And, since potential uses are endlessly variable, any system will initially address the needs and concerns of the system designer, and then be one of many tools available to those for whom it is relevant.

This does not make these classification systems irrelevant, or their design an exercise in futility. Rather it appropriately limits their usefulness by making them task-specific. It directs our attention to their collective value as descriptors of the field, and emphasises that no one system can claim to be a definitive system classifying all activities across all possible criteria of design, purpose and use. I am, therefore, suggesting that consideration of classifying systems is most usefully done in terms of the purposes, and needs, of the people involved, rather than continuing to focus on characteristics of the activities themselves.

In short, facilitators benefit from having a working knowledge of a number of systems for describing, grouping and categorising activities within the field of simulations and games. Rather than relying on one system, or ignoring them altogether, it is more useful to continue developing an understanding and awareness of their structure and uses. Such an approach affirms that a particular game or simulation may be classified in different ways according to various system designers' purposes, an this, in turn can contribute to better understanding of the activity's form and possible uses.

The importance of 'naming'

Facilitators of simulations appreciate that the names that human beings give to what we *think* we are doing influences how we *behave*. For example, when we think that we are being asked to 'play a game', but regard ourselves as mature and serious-minded adults, we may resist such apparent trivialising of the importance of our position. Alternatively, upon accepting that 'playing a game' is relevant, we can adopt a mind-set incorporating such socially constructed factors as 'competition', 'play', 'short time frames', 'cheating', etc. If we think of the activity in some other way (e.g. as 'war') we may adopt quite a different mindset towards the process.

While this seems self-evident, in the context of the field of simulations and games the apparent simplicity of knowing which game we are playing, and what kind it is, may be insufficient to ensure appropriate usage. What is also needed is an understanding of participants' perceptions about the nature of the intended learning processes. The field is highly complex and ill-defined and the purpose of 'playing a game' is linked to intentional learning goals, and includes outcomes that foreshadow behavioural and attitudinal change.

The unfamiliar nature of such processes may markedly affect learners' perceptions and consequent behaviours. Any activity chosen for the purpose of 'playing to learn' may have a multitude of processes, management needs and possible outcomes and what it is called will be of importance in ensuring that participants do not become resistant because of a poor use of 'name' for the activity. While all the systems discussed below are internally consistent in the use of a 'name' for what they are describing, the variety of terms used by the different systems makes it impossible to use only one 'name' when referring to them in general terms. This highlights one of the broader problems for the field – that of choosing a term with which to refer to the activity that is about to be introduced, and underlines the value of understanding how it may be grouped and 'named' as an educational process.

Making some pragmatic choices

Given the vastness of the field, it is worth qualifying this examination of various classification systems by reiterating that this is a PractitionerResearcher's thesis.

There was a highly pragmatic basis for choosing systems presented in the next section. Each contributed to my own knowledge and has proved an effective teaching tool. All are accessible to practitioners, and together they are a cross-section of systems with potential to help any user understand the size and complexity of the field.

I eventually selected seven systems, and arranged them into two groups. Five systems classify activities according to 'Gameware' oriented features, and two according to the 'People' issues. Needless to say this is far from an exhaustive list of such systems. It is simply a 'set' of systems that has proven to be productive and practical, and sufficiently diverse to be representative of the field and its complexity. Table 6 presents these groupings.

Gameware-based systems	**A functional relationships system**
	A materials-based system
	A *most* to *least* real system
	A referent-based system
	An 'objectives'-based system
People-oriented systems	**Finite and Infinite game/simulations**[35]
	Open and Closed game/simulations

Table 6 - An arrangement of classification systems

[35] The term 'game/simulation' is a hybrid and somewhat awkward. In the remainder of the thesis I have chosen to use the single word ' simulation' in relation when discussing activities in this category.

Classifying 'Gameware' in simulations and games

1. Classification by functional relationships

One of my early encounters with a system for classifying simulations and games was with the work of Ellington, Addinall and Percival which I encountered first hand during Henry Ellington's visit to Australia in the early 1980's[36] They use a Venn diagram (Figure 6) to indicate the set of *relationships*[37] among three particular types of activity. By convention, Venn diagrams are composed of interlocking circles, with each sub-set arranged in clearly delineated visual relationships.

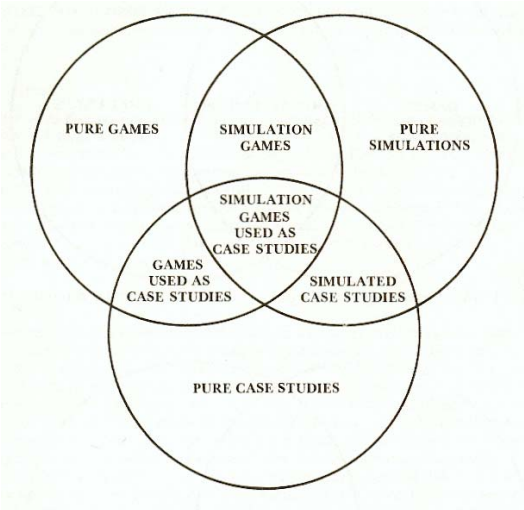

Figure 6 A relational classification system, after Percival and Ellington (Percival and Ellington 1980)

They identified seven distinct types of activity. Three 'pure' types, were called:

1. *Games*
2. *Simulations*
3. *Case Studies*

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[36] I no longer have these materials for direct referencing, although they continue to influence my understanding of the field.

[37] Ellington (2001) discussed this diagram in an update to the earlier work, referring to it as 'classifying by function'—highlighting a problem of classification. I understood it to be classifying by *relationships* among three 'pure types' and have found this to be a most relevant label for their diagram.

Key characteristics of each of these sub-sets are set out in Table 7 below:

Activity	Features	Qualifying characteristics
Games	**Time-limited** **Rule-oriented** **Outcome-driven** **Scored** **Win/lose focus**	Two essential characteristics must be present before an exercise can be called a game: 1. It must involve overt **competition** of some sort, either between individuals or teams. 2. It must have **rules.** (Football, Poker and Scrabble are all 'games'.)
Simulations	**Open-ended** **Behaviour-oriented** **Real life-focused** **Process-oriented**	A simulation is an operating representation of an aspect of reality, and has two essential features: 1. It must ***represent*** an actual situation of some sort, either one drawn directly from **real life**, or one that could conceivably be so. 2. It must be ***operational*** i.e. must enable participant/s to **enact** all, or part of, a process. (Flight simulators and 'part-trainers' —mechanical/computer-driven devices for skill training—are simulations.)
Case Studies	**In-depth analysis** **Detail-oriented** **Focus on results of actions**	A case study is an in-depth examination of a real-life or life-like situation, conducted to illustrate or work with its special and/or general characteristics. 1. It must involve accurate **interpretation** of the problem/situation. 2. It must enable players to identify **special characteristics** of the 'situation', and/or develop **appropriate responses**.

Table 7 Key characteristics of 'pure' forms, based on Percival and Ellington

In the intersections of the three circles in the Venn diagram are located three hybrid types. Each combines aspects of two sets of characteristics, but not all three. This second level of 'sub-sets' creates:

4. *Games used as case studies*
5. *Games combined with simulations as representations of reality*
6. *Simulations used as case studies*

Finally, in this arrangement, one type of activity contains elements of all three 'pure types'. These are known as:

7. *Simulation games used as case studies (sometimes abbreviated to 'simulation games')*

Activities located in this core sector combine the factors of 'play' (the *games* component) 'representations of reality' (the *simulation* component) and 'analysis' (the *case study* component).

This breakdown of characteristics provides a useful tool for categorising games and simulations. Its strengths lie in its identification of features of the three 'pure' forms. The format makes allowance for provision of 'are/are not' choices (an activity is or is not a 'game', for example) when categorising particular activities. Reading the documents describing an activity will usually reveal factors indicating whether it is likely to be a 'game', 'simulation', 'case study' or hybrid. Overall, this classification system provides a good starting point for understanding what types of games and simulations exist in the field.

I feel fortunate to have encountered this system early in my own development as a Practitioner, because it has regularly helped me to identify the real learning needs for a scheduled event. The hypothetical conversation presented in the preamble, is an example of how I typically use the work of Percival and Ellington to begin making decisions about how to guide a caller. As a conversation develops, the Venn diagram helps me identify (for example) that someone like Alex will need 'more than a game' and 'other than a case study'.

Paradoxically, this is the limitation of this classification system. It is cannot help if Alex wants to understand what might happen when he puts his choice of activity into practice. It guides a user to identify *what* type of format is involved, which is of course its intended purpose. However it does not also explain *how* an activity will behave once participants become involved—other systems are needed for that.

For example the activities I suggested to 'Alex' can be implemented as either a 'simulation used as a case study' or a 'simulation-game used as a case study'. The way participants enter the experience depends on how he briefs and debriefs them. If Alex introduces his choice of activity by saying *"This represents our present situation and the action and outcomes will be used to plan how the two Units will work together".* Then he has opted to guide the activity as a 'simulation'[38], which he will analyse as a 'case study' (thus simulation used as a case study) however if he merely says *"This is an activity to get everyone thinking and working and having fun together and will provide us with a lot to talk about"* he has chosen to present it as a 'simulation/game used as a case study' initially drawing attention away from analysis and towards the 'fun' of working in this unusual manner before turning them towards a consideration of whatever issues emerge from their actions.

By inviting participants to attend to the 'play' elements during the action stage he keeps open the possible endings. He will, during the briefing, have only a general idea of what might emerge during the action and has to wait until the debriefing to help participants analyse their behaviour. Each opening statement dramatically alters the way participants think about what to do, and how to relate to each other. To decide how to begin needs more information that can be provided by this system.

2. Classification by type of materials

A quite different classification system arranges activities according to the materials used. For example there are 'board', 'card', 'ball', 'rope', 'mind', 'word' and 'puzzle' activities. 'Board games' for example, are a very old form of game, and

[38] That he is focusing on the ability of the activity to be a reasonably realistic representation of actual events and behaviours, he is not going to use a mechanica 'simulator' of events.

includes all those games played using a flat surface on which markings have been placed to indicate the kind of actions that players take, and the order to take them in. As fas as is known, only two cultures— the Australian Aborigines and Arctic Circle Inuit—do not appear to have culturally unique forms of board games (Bell 1979).

Using a system that classifies according to materials used is certainly helpful in enabling novice users to quickly become acquainted with the key features they can expect to encounter. The popularity of using this method of classifying games and simulations rests, at least in part, on the appeal to the 'familiar' and the 'known'—since from childhood we have been familiar with games that use these kinds of materials[39]. It is only necessary to identify an activity as a 'board game' or a 'card game' for players to instantly have an idea of what is involved.

Ellington, Fowlie and Gordon (1998) developed a detailed set of actions for modifying many well-known formats. Having first classified the games according to the form of materials used, their purpose was to illustrate that many of these sorts of games actually parallel aspects of human life, and can thus be quickly and effectively adapted to support learning in specific contexts such as a school classroom. Scrabble, Go, Snakes and Ladders, Ludo, Chess, Monopoly, Trivial Pursuit, various card games such as 'Snap', Happy Families, Rummy/Poker, Patience, Whist/Bridge; Crossword Puzzles, Lotto/Bingo, Jigsaws, and a 'Dressing Doll' are all included.

The simplicity and clarity of this approach to classification is particularly helpful for my design workshops, providing a direct and familiar route for novice designers into the process of design. Childhood experiences help recall the 'inner workings' of various games and assists a focus on context and information content, while reducing the anxiety of undertaking a 'design' task. For example a trainer with a major Sydney hotel adapted the childhood game of 'Memory[40]' for use in an orientation program for new staff. There was a lot of information and newcomers were finding it

[39] This familiarity assists the creative use of materials when the 'unsettling' nature of an activity arises from deliberate use of 'mis-direction' encouraging participants to rely on familiar 'knowledge' about something then 'interrupts' this 'taken-for-granted' thinking by challenging reliance on the familiar.

hard to recall it within the time frame available. Her *Remember the Hotel* game arranged key information into sets of three cards in a sixty card pack as a revision exercise. When her peers played it during a design assessment workshop, they succeeded in matching many of the trios, despite having no direct knowledge of the content, and found it a memorable introduction to such design applications!

3. Classification according to 'referent' system

In his influential text on 'Gaming: the Futures Language' Richard Duke observed that: *'…it is not simple to become familiar with a broad range of games.'* (p 137 Duke 1994) To help 'neophytes' overcome this difficulty he developed a repertoire of techniques which have as their core a set of 'referents' that constitute the basis of his system. Noting that games are often addressed from a subject matter perspective, as used for example in the Australian anthology mentioned earlier, he proposed an alternative perspective as set out in the figure below. He also considered most games as fall into the 'resource allocation' category, a category that is more extensively developed in his representation of the repertoire.

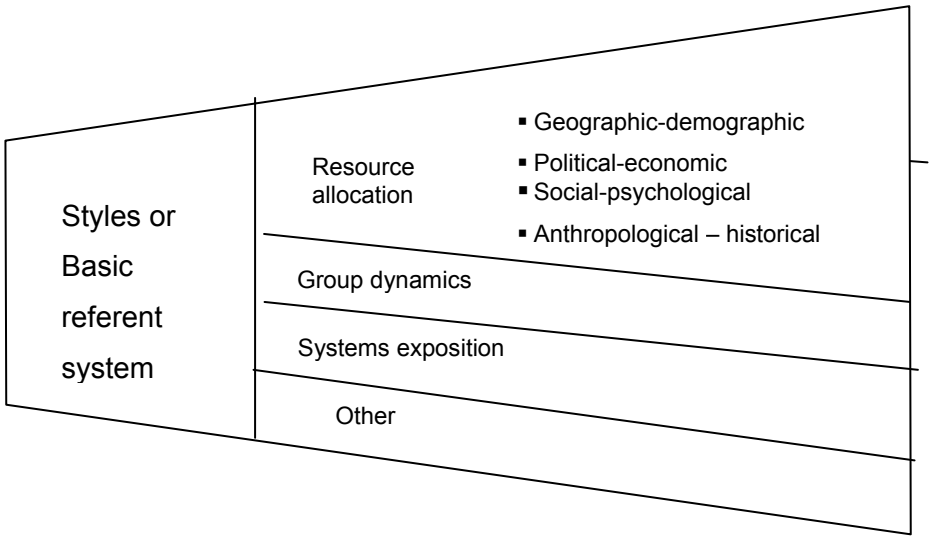

Figure 7 Classifying games from a basic referent system perspective (based on Duke 1994)

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[40] Sets of pairs of matched cards are prepared. In its simplest form the pairs are exactly the same, but variations include pairs that each have one half of an image, or pairs that link two items of information.

From within his professional occupation as an urban and regional planner, his focus was mainly on development of large-scale simulations of social and land use planning, rather than management skill-oriented activities such as considered by Elgood, in the previous classification example. The latter would most neatly fit into Duke's 'group dynamics referent system.'

While helpful for considering such things as veracity of modelling, truthfulness of imagery and the appropriateness of action required of participants, this approach does not provide a great deal of guidance about what will be involved in managing the activity. Duke was concerned to ensure that users of simulations and games understand how the discipline, or set of ideas shaping any activity, influenced the design decisions, which brought it into being. According to Duke some games present the world from the perspective of the *psychology* of human behaviour, while others—'by far the majority'—assume that most human action can be interpreted as allocation of *scarce resources*. Thus, for him, the most important referent system is that of 'resource allocation' which can then be further sub-divided according to such perspectives as geography, economics or history.

This insight is vital to facilitators using a basic referent system to examine the structure of an activity and understand the 'view of the world' being represented. However it tells us little, in itself, about how participants are likely to behave and gives few clues about what might be expected of the facilitator as manager or guide. Dukes' perception was that an essential purpose of any game used for educational purposes is to aid the transmission of *gestalt.* He considered that successful designs are those that transmit a meta-level perspective on the problem being explored by participants. And I now suggest that a facilitator must, consequently, be skilled at identifying and understanding as much as possible of this *gestalt*, both beforehand and as it becomes evident during the course of the action.

This requires ability to interpret patterns of behaviour as they emerge, readiness and ability to help participants make sense of their actions, and—most of all—knowing as much as possible about what a particular game expects of a facilitator in terms of intervention strategies and learning support processes. A referent system is not able

to help facilitators prepare themselves for any of this. Thus it remains a helpful system focused more on 'Gameware' aspects and provides little help, of itself, in understanding the 'People' aspects of the totality of an activity.

4. Classification by choice of objective

Classifying management games by choice of objective is the system used by Chris Elgood in his work on management games (Elgood 1984; Elgood 1996). A focus on the objective or intended outcome of a game or simulation means that its *learning goals* become the key 'classifying characteristic'. Materials used and degree of reality, are of secondary importance. Figure 8 presents Elgood list of objectives.

Other '*classifications are doubtless possible, but the essential point is that any clear statement of objectives will give clues to the sort of game or exercise needed.'* (op cit p 105) For example a 'team building' game, such as the *Eternal Triangle* game I suggested for Alex, has a clear fit with his stated objective. There is little likelihood of him selecting such an activity 'to assess' participants when the desired goal, and game objective, is 'to build team spirit'[41].

Many activities address more than one objective, and conversely some objectives can be achieved through use of activities whose description gives no indication of such a possibility. A problem with Elgood's system is that it creates an impression of permanent relationships among objectives and exercises, when these are not givens. I have used *Eternal Triangles* to explore the origins of conflict in a team, to demonstrate communication models in action, and also for team building!

As useful as such a system is, its limitation lies in the implied existence of a rigid set of relationships between 'objectives' and 'outcomes'. This can limit opportunities for participants and facilitators to recognise, and benefit from, the unexpectedly interesting aspects of their behaviour falling outside the pre-set focus of the activity.

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[41] Unless!! In a different context his need is to assess how well a team has learned about cooperative endeavour. In which case – as noted before – his 'briefing' would be quite different!

• **To demonstrate**	**Players create and/or observe, gaining more than is possible by 'being told'**
• **To distribute**	**Demonstrating knowledge exchange— that 'none of us knows as much as all of us**
• **To examine**	**Relating behaviour in an activity to generalisable human behaviour**
• **To stimulate thought**	**Intellectual activities to increase reasoning ability**
• **To assess**	**Measuring skills and knowledge acquired elsewhere**
• **To practice skills**	**Developing skills to manipulate data and interact with others**
• **To preview**	**For purposes of forecasting possible futures**
• **To build a team**	**To provide a setting where team members develop capacity to work well together**

Figure 8 Elgood's system of classifying by 'objectives'

I learned about this problem when I used an activity called *Riddles (Watson, Vallee et al. 1981)* 'to demonstrate' the cause of communication gaps in participants' workplaces. Unexpectedly the debriefing shifted to a discussion of international affairs, when a participant became fascinated with the way their actions replicated underlying causal factors in a concurrent international incident. If constrained by my chosen objective I could have ignored his interruption and focused the discussion on 'local' issues, instead it became a memorable exploration of the exhortation to 'think globally, act locally' as we learned more than a set of 'rules' to reduce local communication gaps.

Elgood provides for *'objectives that do not imply a controlling authority'* indicating awareness of the role of a 'controlling authority', such as a facilitator, but his system focuses on explaining how particular forms of 'Gameware' are appropriate for desired objectives. He notes the facilitator as controlling the process to achieve pre-determined learning outcomes, and avoids the issue of other (e.g. emotional)

demands that may emerge. And on a final note about Elgood, it is interesting to note that he does not provide any guidance on the evaluation of alternatives in regard to consideration to making choices about how to achieve intended outcomes.

5. Classification by Most to Least '*real*'

A quite different purpose underlies the classification system developed by Taylor (Taylor 1977), which he developed to support his argument that there is value in using simulations with urban planning professionals. Engaged, like Duke in the education of town planners his purpose was to introduce his colleagues to the use of gaming procedures in planning[42]education. To this end he created a structure for aligning activities along a continuum from 'most real' to 'least real' in terms of *'their degree of abstraction from the real-life system, operation or procedure'*.

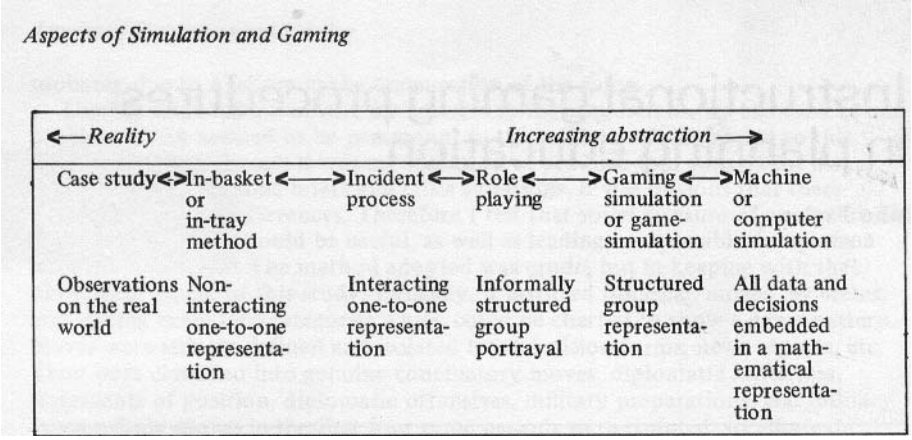

Figure 9 Simulations and games as arranged on a continuum of most-least real by Taylor

According to Taylor, the extent to which an activity is more or less 'real' determines where any particular activity will appear on this continuum. In Taylor's terms, 'real' relates to the degree of verisimilitude between a workplace activity and the process used to represent that activity in the simulation/game. Thus an *in-basket* exercise replicates items likely to be found on a work desk. It focuses attention on the players'

[42] In this context the word 'planning' refers to town /urban planning activities. His article concerns the use of instructional gaming procedures in the education of those involved in becoming town planners. It does not refer to the process of 'planning for education' in a generic sense.

decision-making processes and paper-management skills, while ignoring any outcomes of 'clearing the in-basket'—since the papers are fictional. The facilitator controls decisions about what constitutes the most relevant or effective manner of handling the in-basket materials, thus retaining power over the learning outcomes.

Further along the line of Taylor's continuum, *role plays* are less 'real', because of their greater potential for player involvement and control of the action. A role play is used '*to gain insight into human interaction in the context of a safe learning environment, and relies on spontaneous enactments to illustrate and dramatise human problems or actions.*' (p104 ibid) The spontaneity contributes to the reduced 'reality' while creating opportunities for wider ranging discussion of human behaviour. There is less scope for a facilitator to control the process, and little likelihood that they can 'tell' participants what they experienced as they enacted assigned roles.

Taylor's spectrum is perhaps too linear for today's world, where one-dimensional connections may seem unrealistic and not helpful for understanding the complexity of a 'post-modern' way of life. However, Taylor does add that:

> *…[this] treatment of related simulation techniques is in no way comprehensive. There is, of course, considerable overlap among the groups and the continuum presented here does not claim to be a complete taxonomy of simulation types but…will serve as a simple ordering device to clarify the ensuing discussion. (p106 1977)*

If Taylor developed this continuum for a narrowly specific purpose, does it have a broader significance? One obvious value of the continuum is the way it differentiates among learning situations as having varying degrees of lifelikeness to the activity being mimicked. In doing so it provides facilitators with greater confidence that they are selecting a game or simulation they can manage. 'More real' activities position facilitators as mediators of processes and outcomes. They retain final power to direct participants' attention towards desired learning outcomes. 'Less real' activities relocate both the action and the 'meaning-making' away from the facilitator towards

participants, requiring facilitators to possess a greater degree of confidence in their ability to manage unpredictable environments.

Adding 'emotions' to 'reality'

A less obvious value of Taylor's arrangement slowly emerged for me, through its use in my workshops. This concerns the way it differentiates the likely degree of emotional involvement among various activities. While it may seem strange to be suggesting that 'more real' activities generate less emotional engagement, this is in fact what happens. They restrict 'engagement' to a detached intellectual analysis of impersonal (however realistic) data, while 'less real' activities remove participants from the safety zone of intellectual detachment. They find themselves being drawn into situations of increasing uneasiness and becoming aware that they cannot rely on familiar routines. Uncertainty and disorientation are likely to grow in proportion to the degree of unfamiliarity.

While the continuum addressed only degrees of 'reality' I came to realise that it could be used to illustrate the degree of increasing emotional engagement in the learning experience. In a keynote speech at the 1998 ICEL[43] conference, David Kolb noted that academic environments at the end of the 20th century have a problem with how they are making provision for 'learning'. Being 'intellectual environments' is apparently sufficient reason not to include emotions as a relevant factor in teaching. A teacher or academic might express this approach as: *"We are here because of our superior knowledge. Once we convey information to others, our job is done. Emotions have no place in conveying information, so we need not consider them."*

According to Kolb this creates a kind of reverse Pandora's box. No matter the degree of apparent objectivity, the twin emotions of anxiety and isolation inevitably influence the learners' basic emotional state. Anxiety is about academic performance and isolation is the result of expectations that students will sit passively and listen, remaining focused on the intellectual nature of a lecture.

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[43] The content of this paragraph is based on personal notes taken during Kolb's keynote speech.

In strong contrast to these assumptions the use of 'less real' activities like role plays, simulations and games encourage expression of all emotions. As more emotions emerge they cannot be denied. Conditioned by experience to passively conceal emotions, learners may find it difficult to sort out their behaviour. Thus Taylor's 'less real' simulations are often subject to higher degrees of emotional engagement.

While Taylor does not mention emotions as a factor influencing this arrangement, his continuum readily allows for inclusion of 'emotionality' as a characteristic. When I realised this I adapted it for teaching the use and design of simulations. The 'reality' end of the spectrum becomes 'least emotionally engaging' and the increasing abstraction' end 'most emotionally charged'. This is shown in Figure 10.

Reality & emotional Engagement	Examples	Characteristics
MOST "REAL" ***Least emotionally involving***	**Case Study**	**Observations of the real world.** ***No requirement to become involved***
	"In-basket" or "in-tray" Incident process (also – "action maze")	**Non-interacting, one-to-one depiction.** ***Some emotional attachment to quality of decision making*****.**
	Hypothetical	**Interacting one-to-one representation.** ***Emotional engagement as 'panel member'***
	Role playing	**Formally structured group portrayal using one-to-one interactions.** ***Interactions potentially very engaging.***
	Gaming simulation or Game-simulation	**Informally structured group or one-to-one portrayal of interactions.** ***May evoke strong emotions because of intersection between prior events and current experiences***
LEAST "REAL" ***Most emotional and highly involving***	**Machine simulation/ computer simulation**	**Data and decisions embedded in mathematical representations. Perhaps group interactions about decisions.** ***No expectation of emotional engagement with the 'machine' but likelihood of strong emotional reactions to decisions and actions required*****.**

Figure 10 Adding emotions to Taylor's continuum

Workshop participants report this as a helpful device for selecting appropriate

activities. It directs attention to assessing personal readiness for introducing 'emotional content' and helps them consider their level of comfort with the 'emotionality' of learning. It enables them to choose activities within their reach—while also identifying what will become possible as their confidence and emotional stability in managing such learning contexts improves. In some ways I was anticipating Goleman's (Goleman 1995) work on emotional intelligence regarding the worth of recognising how emotions influence behaviour, and that greater awareness of our emotional state can support, even enhance, our intellectual capacity.

Benefits and shortcomings of these ways of classifying

Each of the classification systems discussed so far provides a way of categorising the structure of, and/or relationships among, various kinds of simulations and games. Each proposes valid and useful ways of viewing games and simulations so that an appropriate selection can be made, according to the designer's purpose and their understanding of a facilitator's needs. Examined in this way, they reinforce the proposition that understanding classification systems, particularly their original underlying purpose, is important when applying them to the task of choosing a game or simulation for a particular purpose.

However, none of these classification systems is particularly helpful for guiding selection of a game or simulation when the facilitator's specific need is to know what is likely to happen as the activity unfolds, with the question being asked is: "How do I manage the process of this activity?"

Classifying the 'People' factors in simulations and games

It is useful to note at the beginning of this discussion that the two classification systems considered here have quite different origins and purposes, yet share interesting similarities. Both use deceptively simple terms, and restrict their systems to a dichotomy. Christopher and Smith (Christopher and Smith 1987) use the concepts of *open* and *closed* to describe the perceptions and behaviours of

participants and facilitator[44]. For his part, the philosopher James Carse (Carse 1987) makes the proposition that life is a 'game', where he identifies two modes of play, that he calls *finite* and *infinite.*

'Finite' and 'Infinite'—life as games

Carse conceptualises life as a series of finite games within an infinite one. The finite games (and there are many) exist in all those situations we encounter throughout life as we learn to play 'by the rules' to make progress towards some desirable outcome (winning a job, graduating with a degree, buying a home, etc). The 'infinite' game (and it *is* singular) is life itself, a process in which there are no pre-determined certainties and the only goal is *to live*. As a philosopher, Carse wants us to understand that each game has quite different rules and provides quite different choices to us throughout life. This difference is between *playing within the rules* of finite games for short term benefits, and engaging in the 'infinite' play of life by *playing with* the rules. Figure 11 outlines the differences between these perspectives.

	Finite Games ***To be prepared against surprise is to be trained***	**Infinite Games** ***To be prepared for surprise is to be educated***
Goal/s	**Play to win**	**Play to continue playing**
End point	**Finishes when someone wins**	**End not pre-defined – play is with (not within) boundaries of time and space**
Rules	**Bounded by defined rules (temporal, spatial, numerical)**	**Internally defined/defined in the moment**
Participation	**Requires (more or less) equal numbers of players, known as 'opponents'**	**No questions of eligibility about who can play**
Players	**Players seek titles recognised by society**	**Players are artists, creators, innovators, etc, rather than 'seekers of titles'**
Number of games	**There are many finite games**	**There is only one infinite game**

Figure 11 - Classifying 'life' as 'finite' and 'infinite' games in accord with Carse

[44] They use the term 'director' for this role.

His concept of life as two forms of co-existing 'game' is especially useful for considering how to manage more complex simulations where outcomes are not pre-determined. Facilitators using simulations and games for learning need to think about many factors, including how an activity will replicate aspects of the 'finite' games of human interaction, and disturb 'taken-for-granted' assumptions about how such activities have means/ends/rationales producing what appear to be appropriate win/lose outcomes. Behaviours emerging in such activities may be reasonably predictable but not always easily managed. That is—a facilitator may know, in advance, that adults regard stability and order as preferable to disorder and chaos, and that a game that challenges such beliefs is likely to be unsettling and therefore difficult to control.

It is important to be aware that introducing such unsettling outcomes places special demands on capabilities for managing the context. Applying Carse's insight to the conduct of a simulation or game reveals that, at such times, we are playing a finite time-limited game about a 'finite game of life' while also playing within the 'infinite' game. Since individuals always retain ultimate choice about how to play the infinite game—if not always the finite ones—each facilitator and every player has the opportunity to address concerns and issues that re uniquely their own. And facilitators need to be aware that:

> *No one can play a game alone*
>
> *One cannot be human by oneself*. (Carse 2003)

Facilitators, choosing to use a simulation or game likely to disturb 'taken-for-granted' assumptions about life, must be aware that the activity is itself a 'finite' representation of other 'finite' games. Adopting a stance that incorporates an 'infinite game' perspective enables a facilitator to remain steady and detached while working in a context they are co-creating with the participants, where they:

- Have less control over the action than in conventional teaching contexts
- Must delay most of their interventions until after the action is ended
- Cannot guarantee that anyone will accept their interpretation of the action

Carse's insights suggest that maintaining a flexible and responsive approach at such times will contribute to the growing maturity of every player. This is because such an approach encourages individual analysis of personal reactions, without the influence of imposed external interpretations of observed behaviour. Facilitators who appropriately use simulations to assist players achieve transforming personal insights are demonstrating a capacity to manage the process of 'playing by the rules' of a particular 'finite' game, while *behaving* as an 'infinite' game-player. This requires a thinking framework that extends individual understandings of what it means to be human and playing the 'infinite' game in the midst of experiences that are challenge previously unquestioned assumptions, about specific 'finite' games.

The ability to remain detached at such times becomes crucial for facilitators, although appearing at times to be nigh on impossible. Carse's conception of life as composed of finite and infinite games provides a perspective of each 'participant' as facilitator of their own 'life/game' and allows a facilitator to accept a backwash of emotions from participants who are yet not able to perceive of themselves in this light.

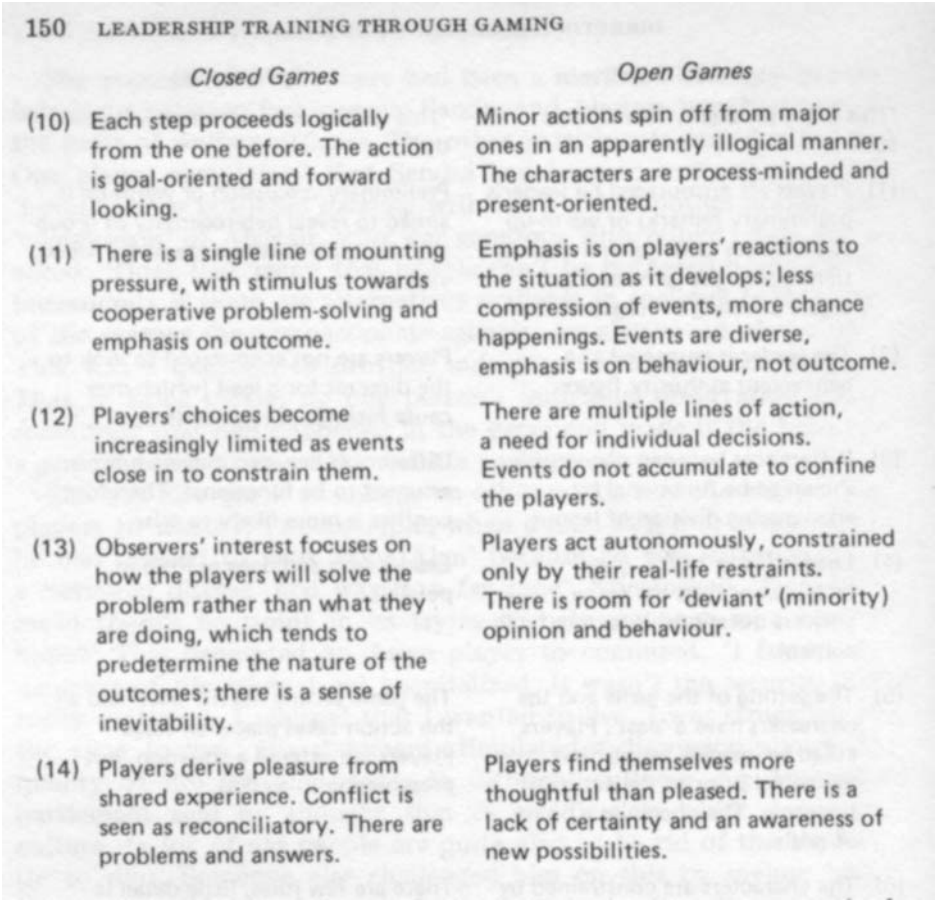
'Open' and 'Closed'—games as life

As published in the book 'Leadership Training through Gaming'(Christopher and Smith 1987) Christopher and Smith's system mimics Carse's philosophical stance. Their 'closed' category resembles Carse's 'finite' games, while their 'open games' correspond to Carse's 'infinite' category.

In contrast with others classifiers, Christopher and Smith were clearly concerned to draw attention to the *behaviour* of the facilitator and of participants as key organising factors in games and simulations. They regarded the available range of behavioural choices, along with issues of control and power, as central to the process of any game or simulation. Their extensive list of characteristics is shown in Figure 12.

Closed Games	*Open Games*
'This is the problem: how will we solve it?'	'This is the situation: what will you do?'
(1) Players are encouraged by leader's preliminary remarks or warm-up to make the same general assumptions about the game and to create a feeling of 'togetherness'.	Preliminary discussion or warm-up is aimed to reveal heterogeneity of group and disparity between members' views. views.
(2) The leader is perceived as a benevolent authority figure.	Players are not encouraged to look to the director for a lead (which may cause feelings of resentment).
(3) Differences between players are shown to be functional by encouraging division of labour.	Differences between players not assumed to be functional. Therefore conflict is more likely to arise.
(4) Leader forms teams, gives instructions, sets the scene, answers questions; is seen to be in control.	Leader says and does as little as possible.
(5) The setting of the game and the characters have a 'past'. Players asked to imagine events that happened prior to the action of the game. They begin at a point of crisis.	The game setting has no 'past' and all the action takes place 'on stage'. Players are offered a situation, not presented with a crisis.
(6) The characters are constrained by detailed information and specific role instructions.	There are few rules, little detail is provided, therefore there is opportunity for chance happenings on the whims of the players.
(7) Players are organized into teams or sub-groups. They all play by the same rules.	Number and arrangement of players are comparatively unimportant. Groups may have uneven numbers, or individuals may work alone. Some interpret the rules differently from others.
(8) The players' point of attack is a moment of crisis.	The players embark on a journey rather than grapple with a crisis. Thus there are multiple plots and diffuse action.
(9) There are distinct steps or stages in the game, directed by the leader and occurring at fairly regular intervals with the aim and effect of progressing the action along specific lines. There is a sense of order and regular pace.	Stages in the game are not clearly marked. Some seem more important than others. Changes occur because of the activities of the players and are due to general causes. Pace and rhythm vary. There is no sense or order and balance.

Figure 12 Part 1 - Comparison of 'open' and 'closed' games Christopher and Smith 1987



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	Closed Games	*Open Games*
(10)	Each step proceeds logically from the one before. The action is goal-oriented and forward looking.	Minor actions spin off from major ones in an apparently illogical manner. The characters are process-minded and present-oriented.
(11)	There is a single line of mounting pressure, with stimulus towards cooperative problem-solving and emphasis on outcome.	Emphasis is on players' reactions to the situation as it develops; less compression of events, more chance happenings. Events are diverse, emphasis is on behaviour, not outcome.
(12)	Players' choices become increasingly limited as events close in to constrain them.	There are multiple lines of action, a need for individual decisions. Events do not accumulate to confine the players.
(13)	Observers' interest focuses on how the players will solve the problem rather than what they are doing, which tends to predetermine the nature of the outcomes; there is a sense of inevitability.	Players act autonomously, constrained only by their real-life restraints. There is room for 'deviant' (minority) opinion and behaviour.
(14)	Players derive pleasure from shared experience. Conflict is seen as reconciliatory. There are problems and answers.	Players find themselves more thoughtful than pleased. There is a lack of certainty and an awareness of new possibilities.

Figure 12 Part 2 - Comparison of 'open' and 'closed' games Christopher and Smith 1987

To make this a useful and accessible tool for practitioners[45] I modified their list to highlight its core features. This modification is presented in Figure 12 (first presented in Leigh and Spindler 1998) and focuses on five specific points that I was finding particularly important for facilitators learning about simulations and games for educational purposes. The first and fifth points concern the *Briefing* and *Debriefing stages,* as the 'input' and 'output' phases of the learning. The other three factors concern *The Role of the Facilitator*, *The Rules of Play*, and *The Nature of the Underlying Scenario*. Together these five provide a relatively simple but powerful set of factors to consider when planning how to manage a game or simulation. They make explicit the different ways in which each kind of activity can focus

[45] During an interview with Elizabeth Christopher as I was bringing this thesis to a close in 2003, I learned that there was a more extensive theoretical development of the ideas in an early draft of the book, but the publisher omitted it on the grounds that it was irrelevant in a practitioner's text.

participants' attention and, of particular importance, indicate something of the nature of the relationship between participants and facilitator in each kind of game.

Focus	**Closed Games**	**Open Games**
Framing question	*Here is a* **problem.** *Your task is…* *'How to solve it?'*	*Here is a* **situation.** *Your task is…* *'What to do?'*
Focus of the Briefing Phase	'Togetherness'	Diversity of players; and of views
The Role of Facilitator	Benevolent authority figure	Not the leader (this may be resented)
Rules for the Action	Players all have same rules	Few rules; little detail. Chance events occur on players' whims
Scenario/ Setting/ Participant roles	Play begins at a 'moment of crisis'. Each step proceeds logically from the one before. Action is goal-oriented / forward looking. Stimulus is towards cooperative problem solving; emphasis on outcome.	A journey—multiple plots diffuse action. Stages not clearly marked. Changes occur because of players' actions. No clear order and balance. Minor actions spin off in apparently illogical manner. Emphasis on reactions. Diverse happenings. Emphasis on behaviour, not outcomes
Outcomes—Focus of Debriefing	Players derive pleasure from shared experience. There are problems and answers. Conflict can be reconciled.	Players find themselves more thoughtful than pleased. There is a lack of certainty and an awareness of new possibilities

Figure 12 Characteristics of closed and open simulations (adapted from Christopher and Smith, 1987)

Behaviour as focus of attention

Considered together, the classification systems of Christopher and Smith and Carse position *people* and *behaviours* as the focus of attention when selecting an activity, and then consider *subject matter, content* and *materials*. In contrast with systems relying on external physical attributes for classifying, both systems focus on action and relationships within the game.

Christopher and Smith's framework foregrounds the way in which facilitators can find themselves behaving markedly differently depending on whether they are using a 'closed' or an 'open' game. In 'closed' games they note that *'the leader is perceived as a benevolent authority figure'*. Such a leader will always have final 'say' over the process, and retain ultimate power when it comes to interpretation of rules and roles. When managing a 'finite' game, the facilitator keeps participants within boundaries established by the rules of the game, and ensures 'correct' identification of outcomes.

Those who prefer an authoritative role in teaching/learning contexts will be comfortable with this approach, and will find 'closed games' relatively acceptable. Possessing more content knowledge than the players, is as important as being aware of how the activity is structured and the directions the action will take. Knowing what 'is to be learned', and being able to 'objectively' observe the action enables identification of supporting examples for the 'lessons'.

I am aware of a personal reluctance I experience when expressing the validity of such a stance. I prefer the facilitation of 'open' games, and for a long time felt 'unkindly disposed' towards 'closed' games—seeing them as limited in scope, 'less adventurous' in content and process, and not providing the kind of challenge that can create 'transformative' learning opportunities. However as the thesis evolved I grew aware of some of my own prejudices and have revisited both my opinion and how I express myself about 'closed' games. I see their educational value in a new way and am more accepting of what they offer.

Like life itself, ‘open games’ are less well defined and require of the facilitator a considerable level of detachment, and a capacity to withstand stress, manage uncertainty and deal with ‘chaos’ (both real and apparent) as an activity unfolds. Sometimes it seems that the more an ‘open’ activity renders it difficult to rely on familiar ‘taken for granted’ behavioural norms, the harder it is for some adults to abandon (even temporarily) their sense of ‘adult self’. For some it seems to become a matter of ‘self-defence’ to deny the validity of such ‘play acting’. In a sense they have become so committed to the structures of ‘finite’ games (however unknowingly) that the notion of unstructured activity as a usable learning strategy has slipped beyond their grasp.

Knowing that ‘closed’ games can be reasonably easy to control, while ‘open’ ones are challenging to manage, enables facilitators to make clear-sighted choices about what to employ for a specific purpose, *within their capabilities*. This knowledge supports appropriate preparation of the environment, the participants, and above all else the facilitator herself.

To illustrate this I have chosen two well-known activities, called respectively ‘Broken Squares’ (Watson, Vallee et al. 1981) and ‘Bafa Bafa’ (Shirts 2003). ‘Broken Squares’ is a ‘closed’ game in Christopher and Smith’s terms. It requires teams of five participants to silently reconstruct five squares from pieces of card jumbled in a manner deliberately intended to create a ‘crisis’. Players are neither to speak to, nor ask for pieces from, any other player. The squares cannot be completed until all players have (voluntarily redistributed all the pieces appropriately. However one player receives a set of pieces that can form a square composed entirely of pieces that actually belong elsewhere. This (somewhat fiendish!) device ensures a good deal of silent frustration as one player sits complacently in front of their completed square and watches the others vainly attempting to finish These others may figure out the problem, but of course are unable to ask for piece/s they need! The facilitator has nominated the theme of the activity as ‘communication skills and group work’, and enforces the rules of ‘no speaking and no offering pieces’ and judges the accuracy of the solutions. The debriefing focuses on how each team worked to achieve a mutually beneficial outcome.

'Bafa Bafa' is an 'open' simulation with quite a different structure, that generates highly varied behaviour with no absolutely pre-determined ending[46]. It begins by creating two 'cultures' and initiates a number of exchanges between them. Participants must behave according to the rules of their own culture when visiting the other, and then provide a report to members of their own group on the behaviour observed during their visit. The facilitator can be quite vague about the purposes of the activity at the beginning[47], and during the action will simply announce the time periods for visits.

The debriefing occurs in several stages, and the facilitator has a role in the discussion but does not offer any comment on the process or behaviours of participants. Since individual responses in such circumstances are unique, their actions may well appear illogical to observers. So the focus throughout the debriefing is on behaviours, emotions and underlying belief structures rather than the outcomes of the exchanges. The intention of the game is to generate the kinds of emotionally unsettling experiences that may occur the first time an individual encounters members of a culture other than their own.

'Broken Squares' always has only one result (accurately completed squares) and is clearly a closed game, while 'Bafa Bafa' can produce many different outcomes, with participants often unsettled by the analysis of what has happened. Thus 'Bafa Bafa' is clearly an open game. From the facilitator's point of view, 'Broken Squares' requires good time management and discussion-leading skills, while 'Bafa Bafa' requires a greater capacity to manage highly unsettled individuals, and assists participants to draw their own lessons about interpersonal communication from an emotionally charged environment.

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[46] Its purpose is to provide participants with unsettling encounters with 'alien' social contexts.
[47] In my workshops I emphasise the importance of 'not pre-empting the learning' in such simulations suggesting the use of highly generalised phrase such as 'the relationships among groups'.

Introducing XB as an open infinite simulation

The simulation XB is examined in detail in Chapter 5. The task here is to introduce it as an open and infinite simulation, and to review how the production of this chapter on classification contributed to my understanding of it as such.

At the beginning of XB some participants experience intense disorientation—creating personal discomfort. They feel uncertain about how to achieve relatively simple outcomes. Others quickly settle into the challenge as presented to them. All participants array themselves along a spectrum from reluctance/resistance to enthusiastic agreement/acceptance. Some hover uneasily near the centre, aware that XB is 'different' and that they are more than usually involved in choices about their own learning. Given this array of responses it is clearly an 'open' simulation with all the features of a journey and the appearance of illogic that characterise such an activity. Moreover it is an 'infinite' game—as much as any temporary human activity can be—in that participants are explicitly invited to 'play with' the rules:

> *Within certain limits (see Rules, p.* 23[48]), *we don't care what happens because we can learn from it. Our experiences test theories and tools. If a theory doesn't explain something, set the theory aside—understand it first—and concoct a new one*. (Putzel 2001)

I understood this long before I encountered the need to develop a framework for explaining XB's mode of operation. Only slowly did I realise that XB is more than a conventional simulation with a greater than usual capacity to challenge a facilitator's skills. The rules and structure of XB appear clear cut and precise in the manual yet prove elusively imprecise. It has, as one of its specific purposes, the disruption of participants' routine responses to the world. It is an experiential learning equivalent of Michel Foucault's perception of his task, which he describes in this way:

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[48] For a full statement of these rules see the note at the end of this chapter.

> *…my project is precisely to bring it about that they 'no longer know what to do'—so that the acts, gestures, discourses—which up until then— had seemed to go without saying become problematic, difficult, dangerous. This effect is intentional. (p 12 Foucault 1981)0*

As facilitator and participants grapple with this problematic and dangerous-seeming learning environment, the notion of playing with the rules offers consolation, even as immediate failures to complete specific tasks in a 'finite' game can become a burden. XB may have features enabling it to be classified via systems like the materials used (paper and pens), or its objectives (including *to stimulate thought—intellectual activities to increase reasoning ability*) but for my learning purposes and based on core features of its behavioural orientation it is best classified as 'open' and 'infinite'.

XB was not intentionally designed as a simulation, a surprising fact given its robust structure representing aspects of human organizations and relationships. It has great potential to create chaos and on-going dis-order as participants struggle to unravel what can appear to be a Gordian knot of communication problems and difficult relationships. It is however both an 'open' simulation in the manner in which it creates an environment that possesses many of the features described by Christopher and Smith, and 'infinite' in its invitation to participants to 'play with' its rules and structure.

Summary

This chapter began with a selection of real requests for help in choosing an 'appropriate' game or simulation for particular contexts, and a hypothetical conversation indicating how any one of these requests might proceed to a satisfactory conclusion. It explored a number of different classification systems, concluding that it is not practical or useful to focus on developing a single system to encompass all possible varieties of simulations and games used for learning.

Drawing on the observation that simulations possess two integral components—'Gameware' and 'People', the chapter explored how classification systems address

one or the other, but not both, of these two components. Systems using the 'People' component were in the minority while being of greater interest and relevance to my practice. Along the way I reviewed experiences of learning about—and learning how to use—classification systems for building a working knowledge of the activities I employ.

Furthermore, the purposes and needs of both designers and potential users of such schemes are noted as being so diverse as to ultimately render futile the search for a comprehensive unified system. Other systems, not yet encountered or even designed, are likely to emerge for inclusion in future discussions, but I am confident that the position set out here will continue as a valid and practical approach to thinking about the nature of simulations and games. That is, it is of more benefit to develop and/or work with systems designed for specific purposes than to attempt to create an all inclusive edifice from which many activities will inevitably escape, usually because the purposes of system designers and users of the activities can never be totally aligned. Accepting this also enables a better understanding of the multiple ways in which simulations and games can be perceived and used.

This is of particular importance to the field of simulations and games as a whole, where energy and time is devoted to claims of universal applicability for a particular system, diverting attention from the diversity and malleability of simulations and games. Facilitators choosing to use simulations and games benefit from familiarising themselves with a range of available classification systems, as well as understanding (as much as possible) the purpose/s which brought each system into existence.

Finally I considered the nature of XB and indicated it is difficult to locate it within any one system - even the 'People' oriented systems that are useful in helping understand simulations and games as learning strategies. As I cannot 'fit' it to any one system I have consequently classified it, at this point, as *'open and infinite'*.

One further perspective can be used to distinguish the kind of activity that XB is. The work of 'chaos theory' researchers in the fields of mathematics and physics offers a perspective that especially suits the nature of XB, and is the subject of chapter 4.

NB – this page is referred to in footnote 46 (p 105)

The Rules for XB are:

1) No major outside or hypothetical cases may be used. No outside projects may be undertaken. No outside speakers may be invited in. We, here, are the subject.

This rule does not prohibit - and XB encourages - relating experiences in XB to personal experiences, particularly in weekly memos.

2) After the third week no discussion of grades during class meetings. This rule does not prohibit - and XB encourages - discussion of control theory, design of the grading system, and the ethics of grading practice.

3) No voting. Try to make decisions rationally after thorough discussion.

4) No decision making in groups larger than twelve. Fishbowls (groups within groups) do not count.

5) No physical damage may be done to the building or to organization members.

6) The word ‘problem’ and the phrase ‘lack of communication’ may not be used. See p. 25 for an explanation.

7) No material from textbooks or this manual may be copied and distributed. Presentations may not simply repeat material from this manual. Thou shalt be original!

8) Members must obey local laws and the sponsoring institution’s rules (e.g., about drinking).

Chapter 4

Using both order and chaos to create learning

Introduction

At the end of the 1980's I entered a full time academic role, working in a Faculty with two work units—called 'Schools'[49]—having strongly contrasting approaches to the education of adults. One was oriented toward a belief system that Boud (Boud and Griffin 1987) has characterised as 'training and efficiency in learning', where the focus is on achieving 'freedom *from distraction in* learning'. Teaching is done from a base of '*authority'* with a hierarchy of values concerning possession of knowledge where testing is the final judgment of learning. The other was closely aligned with concepts of self-directed learning or 'andragogy', after the work of writers like Malcolm Knowles (Knowles 1975) where the focus is on adults having 'freedom *as* learners', with their own goals as central, and there are personal judgements about 'success'[50].

I received no formal orientation or initiation into this workplace, and assumed that my employers judged my extensive workplace experience to be relevant to the needs of the student body. This seemed a logical assumption, given that the initial invitation was for me to design and run workshops on simulations and games for workplace trainers. Because I thought of it as a temporary assignment, I did not pay much attention to the philosophical differences influencing relationships and practices in the wider context of the faculty.

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[49] These were respectively the Schools of Adult Vocational Education (AVE) and Adult and Language Education (ALE).

[50] While this characterisation does provide a useful generalised description of the stances adopted by the entirity of each 'School', it is incomplete insofar as it oversimplifies the diversity of individual

Towards the end of the assignment I won appointment to a tenured position. By this time I was developing a teaching style with which I was comfortable and which was proving successful. Perhaps for these reasons I did not question its 'different' nature. It did not include much 'teaching' in the usual 'academic' manner and, although it could create an unsettling classroom environment, most students responded positively—therefore I saw no need to alter it. I did of course continue to develop and extend my practice, only gradually becoming aware that 'I' did not 'fit' with this academic context as much as I had earlier thought. In choosing to 'teach' via games and simulations I was abandoning a traditional 'teaching' stance, and adopting one nearer to the approach identified by Scharmer as having a 'primacy of praxis' which, he proposes:

> *focuses on creating practice fields or environments that allow learning to follow the flow of innovation and change, rather than organizing for learning around a fixed set of workshops, exercises, and infrastructures (p 17 Scharmer, 2000)*

As usual I did not yet have such a frame of reference to describe my stance, gradually becoming aware that I would need to find a means of justifying the process and validating its outcomes. Initially I resisted the pressure. Student results and feedback made it abundantly evident that my approach was producing the 'right' kinds of knowledge outcomes. For a pragmatist that seemed evidence enough.

However as each experience of a simulation or game added to my repertoire of insights into how they support, extend and challenge learners, I was also becoming aware that I could not explain theoretically the benefits of the learning process. My adoption of concepts from the fields of scientific research dealing with *chaos* and *complexity*[51] stems from this awareness, along with a growing acceptance that all my previous formal education was no longer adequate for explaining the learning results achieved in simulations and games.

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staff members' actual educational philosophies.

Chaos and Complexity

The terms chaos and complexity refer to:

processes that are non-repetitive and unpredictable—apparently irrational—when mapped in two dimensions, but which reveal astonishing shape, order and singularity when mapped in three dimensions. Instead of learning the truth by dividing the phenomenon into parts, the chaos theory approach is to look at the phenomenon as a whole from a higher dimension. (p 17 Fisher and Torbert 1995)

As with other influences on my practice, my use of these concepts did not arrive as the result of a deliberate research effort. My first direct exposure to them was at a public lecture in Sydney, where Benoit Mandelbrot described his explorations of the fascinating mathematically based computer-generated images called *fractals*[52]. I had not studied maths since third year high school and regarded myself as a 'maths failure', so I cannot explain why[53], sometime early in the 1990's, I dragged my two teenage sons and some of their friends to his lecture.

In line with Pasteur's dictum that *'chance favours the prepared mind'* (Pasteur, 2003) I quickly became aware that Mandelbrot's concepts were highly relevant to my own needs, because of the manner in which they could explain my thinking about simulations, in terms of 'seeing patterns' and 'making connections' among apparently disparate and unrelated forms and events. As such, they offered a

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[51] The terms 'Chaos', 'chaos theory' and 'complexity' are among a number used to describe the work in this field. In this chapter I have chosen to use the single word 'chaos' as an all-embracing label for the sake of brevity.

[52] "Although the mathematical ingredients of fractal geometry have been evolving for a century or so, we owe [their] development…to the genius and courage of one person, Benoit Mandelbrot. . . beginning with *Les Objets Fractals: Forme, Hasard et Dimension* in 1975, he has not only given the subject its definitive mathematical form, but also pioneered many of its most important applications.
[A] confusing factor in understanding the mathematical nature of fractals…is the mistaken identification of fractal geometry with chaos theory, another exciting and important new chapter in the history of mathematics. Although fractal objects do sometimes display an aspect of spatial chaos, this is very secondary to their fractal nature. The coast of Britain is fractal, but not spatially chaotic. On the other hand, the main objects of chaos theory (attractors, separatrices, and bifurcations) are fractal, but this is secondary to their chaotic nature." (Abraham, R. H. Human Fractals: the Arabesque in our Mind. **2003**.

[53] And I cannot find a journal entry noting the event—despite its subsequent importance in my work.

framework for explaining how and why my approach to 'teaching', while unconventional, was rated as effective and appropriate by students.

However difficult the task, learning about these concepts was sheer delight as I began developing an explanation of my approach to education using what I first thought of as 'Chaos theory', but which is more accurately described as a broad collection of concepts and theories from the fields of mathematics, physics, chaos and complexity theories. I thought of them as having an 'absolute tentativeness', which appealed to me[54] and encouraged my exploration of them as a means of illuminating what I was learning about simulations as teaching methods.

In typical PractitionerResearcher style, my first attempt to apply Mandelbrot's concepts was practice-oriented. Still with a very rudimentary understanding of non-linear equations, I designed an activity I called the 'Chaos Equation Game' and presented it at an AITD conference in Sydney soon after his lecture. The activity required participants to identify preferred arrangements of relationships among components of the design phase of training programs. It was well received by participants, who commented on its relevance to the difficulty of applying a single design model to their changing circumstances. It has since been refined extended and published[55], becoming a standard part of my repertoire of games and simulations.

In notes written shortly after that AITD session I mused:

1. *Now I've got it—what do I do with it?*
   ie: how does an understanding of chaos theory help me
   - *in work*
   - *in thinking*
   - *elsewhere?*

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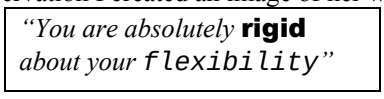
[54] They seemed to fit perfectly with a friend's exasperated comment about my style. Delighted with her observation I created an image of her words, as a poster for my wall!



[55] Leigh, E. (2001). Almost Infinite Equations. Fun and Games for Workplace Learning. E. Leigh and J. Kinder. Sydney, McGraw Hill.

2. "*What we observe is not nature itself, but nature exposed to our method of analysis." Heisenberg quoted in Capra, p152 (Capra 1989)*

[Which I had edited to read—"What we observe is not 'learning' itself, but 'learning' exposed to our methods of analysis."]

3. *My <u>method</u> of teaching is as much under observation—and likely to impact on the learning—as my <u>content</u>.*

Together these three comments set the scene for my exploration of chaos and complexity in relation to simulations and games. Although I really did not know 'what to do with it', I was certain that chaos could help explain the behaviours and processes I was observing in open infinite simulations. I was quick to recognise its validity and usefulness as a metaphor for what I was observing, particularly in the production of open and infinite simulations.

'Chaos'—a definition and an application

So what is 'chaos', and how might aspects of its conceptual frameworks be applied to what Duke (Duke 1974) refers to as the *gestalt*[56] of 'open' simulations?

In a philosophically-oriented *'Exploration of the issues arising from the scientific study of chaos',* Kellert defines chaos as:

> *the qualitative study of unstable aperiodic behaviour in deterministic nonlinear dynamical systems. (p 2 Kellert 1993)*

In other words, 'chaos' studies those *systems* which operate by means of containing both a **recipe** for their current state and a **rule** for transforming this state into some future (or past) state. These systems simultaneously possess both a description of what they are, and include indications for processes by which they may be altered. Human history is one such 'system'. We know what it 'is' from reading our history books and visiting historic sites etc. and also have some understanding of how it is being (and can be) changed in specific ways. Similarly a simulation or game exists

[56] 'Gestalt' refers to the concept of an organised *whole* perceived as more than the sum of its parts.

both as words on the page and *also* in participants' actions which turn static instructions into dynamic enactment.

Nonlinear, as a defining feature means that these systems do not have a 'closed form' or 'single right answer' solutions[57], and therefore require a *qualitative* rather than a *quantitative* account of their behaviour. Such a qualitative account focuses on evolving an understanding of the 'behaviours' of the equation as it operates through time, while a quantitative account will claim to provide exact predictions about the 'state of being' at any specified time. In nonlinear equations behaviours are considered to be *aperiodic,* in that they do not regularly (predictably) repeat the values describing them. This absence of predictable repetition causes them to appear random, and *unstable*—having a form that is easily affected by even small disturbances. Such 'dynamical systems' are *deterministic '…because they are composed of only a few (typically less than five) differential or difference equations.'* (p 5 Kellert 1993).

All of this means that, as *'a qualitative study, chaos theory investigates a system by asking about the general character of its long term behaviour, rather than seeking to arrive at numerical predictions about its exact future state'* (p 3 Kellert 1993).

Applying this to simulations and games enables the use of 'chaos' concepts to *describe* qualitatively the organic, evolving experience of a simulation as it is emerging from participants' behaviours. Descriptions and analysis are no longer limited to quantitative *measurement* of the results of an experience. This supports thinking about a simulation as a *dynamical system* designed (by someone) and enacted (by participants who are not the designer), with a random (or no) repetition of elements (*aperiodic*), thus creating a potential for outcomes that may be equally valid but widely different on each occasion.

While there is a high degree of *probability* that certain features will re-occur in a well-designed simulation or game there is no *certainty* that they will. Thus

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[57] The array of board game representations of historical events (especially military ones!) are examples of the continuing perception that 'history' can be replayed to achieve different results.

suggestions about what participants may do and learn during the course of an open infinite simulation can be proposed in general terms, but cannot be stated beforehand with any certainty. In such conditions there is no guarantee what 'will' happen or 'who' will, on this occasion, do 'what' during the course of the simulation[58].

The implications and consequences of seeing the world in this way are explored by Prigogine and Stengers, in their work on 'Order out of Chaos'. They demonstrate that the *'…universe* [has] *a pluralistic, complex character…* [where] *Some processes are, as far as we know, well described by deterministic equations, but others involve probabilistic processes.'* (p vii, Alvin Toffler in Prigogine, 1985)

Their work is significant for thinking about open, infinite simulations because it enables conceptualisation of them as environments that are, in effect, 'probabilistic processes'. There are no certainties in such learning environments, and both participants and facilitator may be surprised by actions taken and learning outcomes achieved. Nothing can be 'determined' with certainty beforehand, and yet the learning that emerges has the potential for greater impact than almost any other kind of formally structured learning. For instance Deana[59], a deaf student who found the experience of being in XB too much to bear, undertook an alternative assessment task in which she wrote:

> *I did not feel secure or safe [in XB]…I sat and watched the interpreter while everyone talked…I was only able to express my feelings to the interpreter outside the room. [This] affected my self-esteem and I felt very upset and depressed.*
>
> *…by reflecting on my experiences [in XB] and by reading and applying the theories of Bion, Hofstead* [sic], *Schein, House and Michell and Maslow, I have been able to understand… the purpose of the XB group—to train managers to think and act. The aim is to learn about management and*

[58] Chapter 6 includes several examples of participant behaviour in XB for which a 'chaos' framework was helpful in gaining an understanding of how quite different outcomes emerged from what were initiated as (almost) identical iterations of the simulation.
[59] A pseudonym.

> *organisational behaviour—by doing it. The theories also made it clearer to me what occurs…in [my] workplace with Deaf and hearing colleagues and management*. (White 2001)

When her paper arrived I was unsure what to expect. Being profoundly deaf her first language is Auslan[60], with English as her second language. The XB experience had been highly unsatisfactory for her, and she had wanted to 'blame' her peers rather than acknowledging the real limitations of their shared situation. Her final sentence is particularly compelling, indicating, as it does, a major reassessment of her perceptions about relationships in her workplace.

For Deana the actual experience of XB was not good—but the learning that emerged from it, as reported in detail in her paper, was quite spectacular! Would she have achieved such insight without the difficulties created by her experience of XB? I cannot say for certain, but the unsettling environment pushed her far outside what she was used to, which as (Mezirow 1990) demonstrated is often where significant learning takes place. Her experience demonstrates that, in simulations, nothing can be 'pre-determined' and that, while the potential for learning has a high 'probability' of success, the final outcome remains unpredictable until actually achieved.

Orderliness and Chaos—some antecedents

Deana's experience is now a familiar one for me, and her writing contributes to a body of evidence about the manner in which initially unsettling experiences can, with time, become important markers of alterations to beliefs and perceptions. It is similar to other changes being recorded in human experience. For example, writing about ways in which humanity has been 'coming to terms with' science in the twentieth century, Watson suggests that:

> *the various…disciplines,…modes of thought or ways of doing things, adjusted and responded but could not ignore science… In jurisprudence, architecture, religion, education, in economics and the organisation of work,*

> *the findings and the methodology of science have proved indispensable. (p 3 Watson 2000)*

While this might also be said of developments in preceding centuries, the beliefs informing the science of each era differ widely. In earlier times the French scientist the Marquis de Laplace argued for a deterministic view of the nature of the universe. According to Stephen Hawking, Laplace had concluded that it was possible to determine how to find a set of laws or rules that could enable the prediction of everything likely to happen to the universe. All we needed was knowledge of the actual and complete state of the universe as one time. (Hawking 1988)

This became a standard assumption underlying all scientific work until the early years of the twentieth century. However, writing at the beginning of the twenty-first century, as an architect of the science that is demolishing Laplace's belief in the predicability of the universe, Hawking now believes that while we may know all (or most) of the rules that Laplace sought, we are ever more aware of the unlikelihood of achieving stability in our use of such laws or predict the kinds of complex systems that can be produced with them.

That is, in the 200 years between Laplace and Hawking, humanity has begun to grasp that there is much that it does not—and probably never will—understand sufficiently to be able to predict and control in the manner that many might wish. This may be highly problematic to those who prefer orderliness and structure, however it will not surprise those who use simulations to create uncertainty and indeterminacy as aspects of valid models of the 'real world'.

While the twenty-first century is coming to terms with life as inevitably and inherently unstable, older notions of the possibility of achieving stability and order are still widespread, especially in regard to teaching practices and images of 'learning contexts'. Some religiously-minded communities hold that *'God is not the author of confusion, but of peace'* (Gems 2002) and wish to live always in the kind of environment described in *I Cor. 14:40* which says: *'Let all things be done*

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[60] Australian language for the deaf/hearing impaired.

decently and in order' (ibid) And at least one large body—representing schoolteachers—felt it was appropriate, in 2002, to call on:

> *Local Education Authorities to ensure that any proposals devised by them for the management of secondary schools must be able to demonstrate the capacity to deliver challenging learning experiences, an* ***orderly*** *teaching environment, effective pastoral care and a management structure for Scottish education in the 21st century.* (ScottishTeachersAssociation 2002)

While these schoolteachers may regard orderliness as a desirable quality, it is seldom the usual state of human affairs. Nor is it the beginning point of progress, as science is demonstrating ever more clearly in the natural world. Teachers who prefer stable and orderly learning environments expend great effort designing orderly learning processes. A simulation based on use of a chaos framework requires similar effort to design and can produce equally valid learning conditions that will be anything but orderly and predictable, yet closer to the nature of the 'real' world being uncovered by contemporary science.

Uncertainty as inescapable—the certainty of uncertainty

Although a number of scientific discoveries preceded it, the formulation of Heisenberg's *'uncertainty principle'* in 1928, marks the departure point for much of the research that has become central to 'chaos'(Gribbin 1990). Working at a time when it was still thought that phenomena like 'light' could be identified as having a single 'form'. Heisenberg showed that experiments designed to detect light as a 'particle' (in terms of its size) succeeded, *as also* did experiments designed to show it is a 'wave' (in terms of its movement). However he realised that it is not possible to *simultaneously* demonstrate the properties of light as *both* 'wave' *and* 'particle'. With this observation he re-located the 'researcher/observer' as a crucial variable in scientific research. Not only might the object of the research have more than one set of properties, but the researcher's choice of hypothesis and methodology will also influence how the properties are perceived and examined. Research was no longer 'value free'. While a limited set of possible 'variables' might be measured at any one

time, the researcher is pre-determining the 'nature' of the phenomenon s/he is researching, and therefore shaping from the beginning the nature of the results.

In developing his principle, Heisenberg effectively argued that there is no possibility of absolute truth at the quantum level[61], and hence the search for proof of Laplace's proposition of 'predicability' could never succeed.

> *"Even in principle," Heisenberg said, "we cannot know the present in all detail. For that reason everything observed is a selection from a plenitude of possibilities and a limitation on what is possible in future." (p 261 Watson 2000)*

Since the late 1920's scientists, committed to new ways of thinking about the implications of Heisenberg's principle, have taken up the study of things that have every appearance of being untidy, inexplicable and better ignored. Up until this time, the kind of linear, reductionist thinking—dominant in science research after the time of Newton—had been studiously ignoring this messiness (Waldrop 1992).

In regard to gaining insight into my own practice, a key implication of Heisenberg's uncertainty principle was that it supported my intuitive awareness of the impossibility of considering myself an 'objective' observer separate from my perceptions of the 'objects' (participants and their actions) being observed. Each influences the other by the simple fact of their co-existence.

Working at the same time as Heisenberg, the physicists Nils Bohr and Max Born stressed the continuing importance of scientifically based experiments for improving our understanding, but when talking about his work Born noted that all that is really possible is to calculate the probability that an experiment will actually produce a particular result as intended (Gribbin 1990). Similarly all I can do is calculate the *probability* of a particular simulation or game achieving desired learning outcomes.

Heisenberg's uncertainty principle reinforces conclusions arrived at in the previous chapter, where I examined the efficacy of classification systems for identifying the

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[61] This was controversial at the time he announced it, and is still not accepted by all scientists.

nature of particular activities. I proposed that no single classification system can claim hegemony over the entire field and Heisenberg's principle emphasises that each human being understands such concepts as 'simulations' and 'games' quite differently, and will have quite different notions of 'appropriate' research goals and teaching/learning methods. This is true whether the 'learning' is delivered via a simulation or in a more conventional manner, such as a lecture. However it has especial significance for simulations, which are intentionally designed to surface issues of uncertainty and engage participants directly in the process of their own learning rather than providing a 'distanced' and 'objective' position from which to 'view' it.

Once I understood the concept of focusing on the 'probability' of learning outcomes rather than 'absolutes' it assumed great importance for me. I had already learned that the messy reality of human existence cannot be *fully* replicated in miniature nor can every factor be 'controlled for' as desired by educators who continue to prefer a reductionist view of a controllable world as a desirable environment.

Rather than thinking of simulations as 'absolute replicants' designed to produce the same results each time, my perspective began to shift towards regarding simulations as 'open and infinite', representing selected facets of a larger whole. As approximations of larger contexts, open infinite simulations have the potential to reproduce the kinds of uncertainties existing in that larger entity—with the potential to trigger the same kind of learning that occurs there. This 'mini world within a world' can powerfully reflect the whole—just as a hologram is a faithful *representation* of a whole.

Participants who accept that they are not being asked to reproduce absolute parallels of 'life' feel free to behave in accord with immediate needs and perceptions and enter into a dialogue with the process, creating opportunities such as that identified by Deana. Similarly designers feel no need to make prior and absolute claims about the certainty of outcomes, accepting the probability that participants will not fully recreate the reality of the whole, just as today will only approximate the nature of previous, and future, days with the same calendar date.

Clearly, however, there are risks in drawing on 'chaos' for help in understanding phenomena about which it itself is, as yet, silent[62]. Kellert identifies a widespread tendency to take this risk, when he writes:

> *Contemporary science has become the place to turn for the legitimation of unconventional and, occasionally outlandish claims. The past few years have seen chaos theory used to the hilt for both worthwhile interdisciplinary cross-fertilisation and fashionable rhetorical co-optation. In Chicago Jean Baudrillard proposes a fractal model of the postmodern self, while in New York a talk is advertised called "Tantra, Sufism, and Chaos Theory." Chaos theory is portrayed as paralleling and confirming the insights of literary theory (Hayles 1990) as well as Taoism (Briggs and Peat 1989).*
>
> *In addition to the cognitive authority of mainstream science, chaos theory has much to offer. It has a neat name. It generates pretty pictures. It represents the very latest thing in science. It is relatively accessible. But besides many of these trappings, it must be admitted* ***that chaos theory challenges many of our presuppositions and makes us think differently about the world****.* (my emphasis) (p 77 Kellert 1993)

The capacity to challenge presuppositions about conventional educational methods was a key attraction of 'chaos'[63]. I read widely, finding themes recurring across disciplines, and began to apply their insights to my activities (as in the design of the simulation referred to earlier)— extending my analysis of open infinite simulations. Using 'chaos' to think about principles underlying my practice led to the development of Figure 13, as an attempt to show how chaos concepts apply to teaching contexts where open infinite simulations are used.

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[62] In drawing on concepts from a field of science in which I can never be 'expert' I have had to rely on the writing of others who are also not expert scientists however good they may be at summarising and writing about science. While being aware of this as a difficulty, PractitionerResearcher will accept the risk, consider the benefits, and decide on a course of action shaped primarily by the needs of practice. In taking this path I have read as widely as I can to understand the science involved and used this understanding to 'make sense' of experiences in which I am engaged. In seeking to understand the fields of chaos and complexity theory I have drawn from a variety of sources {Wheatley, 1993 #168}

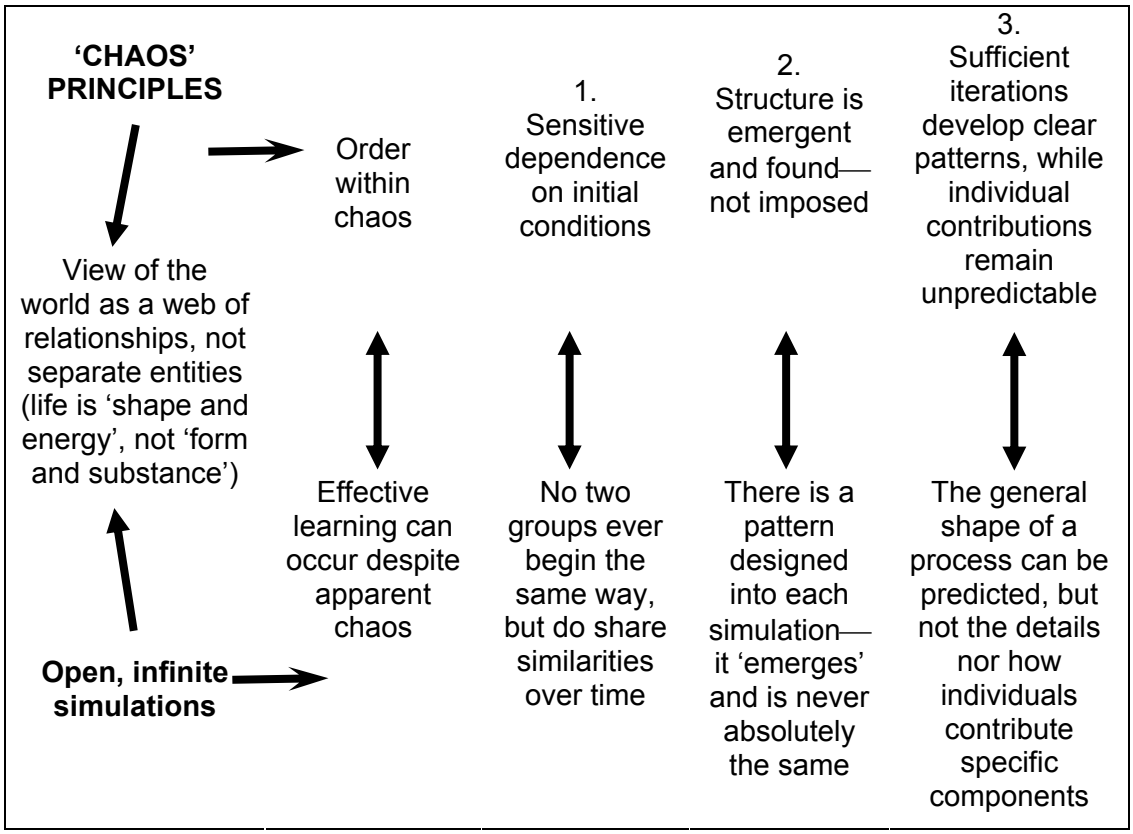

Figure 13 An image of relationships between 'chaos' concepts and open infinite simulations

As a result of all this I found myself thinking more deeply about simulations in the light of 'chaos' while re-analysing my practice. One outcome was research undertaken to develop a paper for presentation at the 1997 ISAGA conference (Leigh and Spindler 1998) which has been extended and is awaiting publication as *Simulations and Games as Chaordic Learning Context*s (Leigh and Spindler in press).

The items across the top of Figure 13 are chaos concepts I now use to explain how open infinite simulations produce an inevitable tension between 'order' and 'chaos' during the process of a simulation. The items across the bottom of Figure 13 indicate insights emerging from an application of these concepts to simulations and games.

{Eiser, 1994 #723} {Prigogine, 1985 #110} {Gleick, 1990 #182} {Gribbin, 1990 #841} to explore and understand how these concepts apply to my own field of endeavour.

[63] As it may also be, for those cited by Kellert!

Chaord: 'chaos' and 'order' con-joined

These concepts are examined in more detail shortly, however, if I was to make effective use of these concepts for explaining tensions within open infinite simulations I needed a way of thinking about how the combination of chaos and orderliness could produce memorable learning experiences. The work of Dee Hock, based on his experiences as a manager, offered an answer.

> *"Chaos and order are not (as we have been led to believe) opposites from which to choose[64], but two aspects of the very same being (reality). Order is not 'in' chaos, and neither is chaos 'in' order. That's why the word 'chaord', coined by the founder and former CEO of Visa Card International Dee Hock, is considered accurate and the distinct terms chaos and order are not." (Dr. L. Fitzgerald; personal correspondence)[65]*

As a senior executive, Dee Hock faced the monumental task of establishing a coherent credit card system after a period of unplanned development in the USA banking sector had created dozens of credit access systems many of which were in imminent danger of collapse. Rather than seeking a positivistic solution he turned elsewhere finding that he needed an understanding of the indivisibility of chaos and order. As he worked to unravel the disorderly mess that was the complex real-life use of credit cards in the 1970's, his solution was to invent the concept of 'chaord' noting years later that:

> *I find it cumbersome to either think or write about fundamental principles underlying both physical systems and human institutions in the terms unique to either business or science.*
>
> *So after grubbing in various lexicons for a suitable word… it seemed simpler to construct one. Since the knowledge pursued is believed by scientists to lie*

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[64] One choice usually being regarded as good or 'desirable' while the other as bad or 'undesirable'.
[65] Although this extract contains the term 'reality', the meaning of which is often contested, the thrust of the quote—that 'order' is *in* 'chaos' and vice versa—expresses very well the notion that is central to this chapter.

> *on the knife's edge between chaos and order, the first syllable of each was borrowed and Cha-ord (kay-ord) emerged.(Hock 1996)*

His conceptualisation of modern work conditions as 'chaordic' is an eminently suitable model for describing the operation of open infinite simulations that are, effectively, miniaturisations of specific examples of such conditions. Hock proposed that:

> *By chaord, I mean (1) any autocatalytic, self-regulating, adaptive, nonlinear, complex organism, organization or system, whether physical, biological or social, the behavior of which harmoniously exhibits characteristics of both order and chaos; (2) an entity whose behavior exhibits observable patterns and probabilities not governed or explained by the behavior of its parts. By chaordic, I mean essentially the same, the fundamental organizing principle of nature and evolution. (ibid)*

As Hock suggests elsewhere:

> *Loosely translated to business, [a chaordic workplace] can be thought of as an organization that harmoniously blends characteristics of competition and cooperation; or from the perspective of education, an organization that seamlessly blends theoretical and experiential learning. As I learned from the formation and operation of Visa, an early archetype of such organizations, they require a much different consciousness about the leader/follower dichotomy. (Hock 2000)*

In other words, the term 'chaordic' fuses the concepts of 'chaos' and 'order' to describe human contexts where the enduring preference is for 'order', even while 'chaos' is the daily experience Given these observations it is appropriate to label simulations that '*seamlessly blend theoretical and experiential learning'*, as 'chaordic' to indicate their capacity to replicate the messiness of real life as described by Hock.

Producing *order* through creating *chaos*

Open, infinite chaordic simulations usually begin in an orderly manner with well defined structures elaborated through rules and roles but also containing specific requirements virtually guaranteeing the emergence of discomfort and increasing uncertainty and unpredictable outcomes. Their goal is to create a (relatively) 'safe setting' within which participants reproduce and then examine aspects of a real world context for the purpose of learning how best to operate within it, or change it if that is a learning goal.

Thus a decision to use an open, infinite and chaordic simulation begins with an intention to take participants into a difficult, complex, challenging and compelling process through which learning outcomes emerge rather than being pre-ordained. The facilitator's task first is to remain neutral as they observe the untidy appearance of this process producing order through creating chaos. The second task is to help draw out the learning in a manner that sustains and develops awareness and comprehension of consequences.

Conventional teaching strategies focus on reducing the impact of chaos with a view to achieving an orderly setting in which to control learning. Such an approach, while appropriate for particular learning goals, conceals from learners the influence of chaos and uncertainty and the potential for effectively working with *both* order *and* chaos. Bernstein's observation about the importance of learners coming to understand that "*knowledge is permeable, that its orderings are provisional, that the dialectic of knowledge is closure and openness*" (Miller 1989) is relevant here. As long as teaching environments emphasise order and certainty as the appropriate basis for acquiring knowledge, learners considering them to be the norm will become unsettled by any processes that do not conform to their expectations.

Classroom-based images of knowledge as relatively impermeable render learners less able to directly connect information acquired in such settings with the permeable nature of working knowledge. Conversely designs utilising open infinite chaordic concepts are based, in part, on the assumption that moving *from* order *into* disorder and chaos creates an environment where learning is *emergent* rather than imposed.

Appropriate debriefing returns participants to a state where altered awareness incorporates a perspective of 'chaos' as being part of the natural state of things.

Three Chaos concepts

The following section of this chapter briefly explores three chaos concepts introduced in Figure 13, which I had seized upon early in the development of my understanding of 'chaos' as a tool for exploring the learning in open, infinite chaordic simulations. These three concepts are respectively:

- Sensitive dependence on initial conditions
- Structures are emergent and found - not imposed
- Patterns of behaviour become evident after sufficient iterations, while individual contributions to the patterning process remain unpredictable

1. Sensitive dependence on initial conditions

Sensitive dependence on initial conditions refers to the notion that small variations in a dynamical system can, and do, increase in size and potential impact on the whole as time passes, eventually producing major differences in eventual outcomes. The beginning shapes all the rest of the activity, and tiny changes lead to major alterations in succeeding events.

Meteorologist Edward Lorenz was among the first to understand that Newton's laws of motion and the 'clockwork' universe they propose are inadequate images of the uncertainty, complexity and apparent unpredictability of the world in which we live. His work on weather patterns began creating this concept as a core principle of chaos research. In 1961, he observed that an alteration of just one part in a thousand in a computer program simulating hypothetical weather patterns produced profound divergences in resulting patterns.

Since the time of his discovery perceptions about the principles of 'deterministic' science have been slowly but inexorably altering. However at the beginning an intuitive grasp that something significant had happened was all he had. As he said to James Gleick:

> *The average person seeing that we can predict tides pretty well a few months ahead would say 'Why can't we do the same thing with the atmosphere, it's just a different fluid system, the laws are about as complicated.' But I realised that any physical system that behaved nonperiodically would be unpredictable*. (p 18 Gleick 1990)

In his review of Lornez's discoveries, Gleick notes that they:

> *…merely led him to a place he had been all along. He was ready to explore the consequences of his discovery by working out what it must mean for the way science understood flows in all kinds of fluids. (p 22 Gleick 1990).*

So began a profound shift in scientific understanding of natural phenomena, which has its own significance for this thesis. As I came to comprehend Lorenz's realisation '*that any physical system that behaved nonperiodically would be unpredictable'* I began to see how open, infinite chaordic simulations could be viewed as similarly 'nonperiodic' and therefore likely to produce unpredictable results on each iteration. Encountering the work of Lorenz showed how science itself can question 'unquestioned' precepts of conventional scientific knowledge, and helped articulate the belief that 'approximations' are valid outcomes of emergent learning.

In regard to open, infinite chaordic simulations this can release facilitators from a need to maintain learning contexts as stable and repeatable. Since the initial conditions for any educational activity can never be exactly the same (because every group of students is different, even when the learning activity is the same), attention can shift from vain attempts to produce uniformity, to being alert to unfolding patterns as they emerge.

In reviewing 'chaos' as a scientific powerhouse of new ideas, Krippner observed:

> *Some popular enthusiasts have claimed that chaos theory will herald the third major scientific revolution of the 20th century…[This] third revolution holds that [inter alia]…no person can measure any continual variable with sufficient precision to completely characterise complex chaotic processes (Krippner 1994)*

The notion that *'no person can measure any continual variable with sufficient precision to completely characterise complex chaotic processes'* describes the learning potential of open, infinite chaordic simulations which share at least one *continual variable* that is impossible to *completely characterise*—namely the human participants. Since conditions at the beginning of each learning process will vary, a facilitator must attend to what is present rather than focusing on what 'is to be'. As a teacher I had entered my classrooms focused on how to 'give' my students designated knowledge. As a facilitator, aware of the 'sensitivity of initial conditions', I enter each classroom with a focus on who is present, what they bring and what might reveal that they need, or are fearful of.

Accepting 'approximations' and letting go of 'certainties' enables facilitators to *work with* the forces influencing participants' behaviour in open infinite chaordic simulations, while refraining from a need to impose control. The concept of 'sensitive dependence on initial conditions' provides a constant reminder that an open, infinite chaordic simulation unfolds in a manner paralleling 'real life', and can no more be externally 'controlled' than can events in real life.

2. Structure is emergent and found—not imposed

'How are rivers like trees?' is a question which reflects the startling discoveries of Benoit Mandelbrot. Driven by curiosity and intuition he has revelled in exploring phenomena often considered irrelevant or merely annoying by his colleagues. He observed all around him a symmetry implying patterns within patterns, at both macro and micro levels of detail in the natural world. These patterns and their implications for understanding the natural world so fascinated him that he has devoted his life to a study of them. Indeed once we abandon the notions' of 'water' and 'wood' it becomes possible to see how the patterns of origins/roots, streams/branches do indeed have a similarity of pattern when viewed from afar.

One outcome of his study was creation of images we now know as *fractals*. These involve the development and use of nonlinear equations having an open rather than a closed form, giving rise to complex images that are self-replicating at greater and smaller degrees of magnifications, unlike linear equations. Farrell explains it thus:

> *Dynamical systems are systems that are in constant flux. Examples include the stock market, ecosystems, the weather, the human body… Traditional mathematics based on Newtonian principles has only been able to understand and model these systems by taking them apart and looking at the individual pieces…[Using] linear equations to model the pieces…gives us an incomplete picture of [their] behavior… Eventually, we run up against the need to model these systems using non-linear equations, most of which are unsolvable. But many of the pioneers in chaos discovered that graphing these equations using feedback loops allowed them to look at pictures of these systems. (Farrell 1998)*

Open infinite chaordic simulations model the patterns of interactions observable in real life. They will never be totally accurate representations but can appropriately be considered as 'fractals' of the context they represent. The patterning is the issue, not the scale. As Gleick suggests:

> *the claim of fractal geometry is that, for some elements of nature, looking for a characteristic scale becomes a distraction. Hurricane. By definition, it is a storm of a certain size. But the definition is imposed by people on nature. In reality, atmospheric scientists are realising that tumult in the air forms a continuum, from the gusty swirling of litter on a city street corner to the vast cyclonic systems visible from space. Categories mislead. The ends of the continuum are of a piece with the middle. (p 108 Gleick 1989)*

Why would the notion of patterning be helpful to facilitators of open, infinite chaordic simulations? The concept of patterns repeating at larger and smaller degrees of scale provides facilitators with a way of thinking about the chaordic nature of unfolding events, enabling them to wait for patterns to emerge. In an open, infinite chaordic simulation modelled on a given human context, participants' actions will to a greater or lesser extent repeat the behaviours observed in the 'real life' context. For facilitators this means that patterns arising in any particular iteration of a simulation will have some similarities both with other iterations of the simulation, and the real

life context it replicates. But it is a *pattern*, not an absolute replicant, since the initial conditions will not be precisely the same among various iterations.

For example human behaviours are fractal-like in that emotions like love/hate/fear (and their effects on behaviour) occur at each level of human interaction, from one-to-one to trans-national relationships. Discomfort in one situation will have its roots in conditioned responses, and the responses will be influenced by the extent to which emotions are understood and managed. Open, infinite chaordic simulations trigger emotional responses, which may be restricted because of the smaller scale of the simulation, but may be no less powerful in their impact on an individual and others in the simulation. Relationship patterns are evident, and remain relevant and valid, at each level of human behaviour.

Researchers looking for 'causes' and 'effects' among the complexities of human behaviour have identified many specific patterns. For instance, Janus used the term 'groupthink' to indicate ways in which decreased objectivity can mar group performance, identified how groups become self-deluded about their morality and feel invulnerable to criticism (Janus 1971). Harvey's concept of 'The Abilene Paradox' reflects on the ease with which group members may silently disagree with group decisions while publicly agreeing—often with disastrous results (Harvey 1999), while Mangham analysed the common patterns that arise when individuals exercise power—either to the benefit or detriment of group goals (Mangham 1986).

Each of these researchers was interested in a 'part' of the complex whole of human behaviour. Their purpose was to find causes of the specific behaviour/s they were investigating and then propose ways of avoiding the resulting mistakes. While none uncovered knowledge that could predict, with certainty, what might occur in any particular real life situation (nor in an open simulation of such 'real life' for that matter), nonetheless their work illustrates how human beings tend to follow certain well-worn paths (i.e. patterns) that are evident to a trained eye.

The psychologist Wilfred Bion observed groups closely and developed a 'map' of the patterns of group behaviour. He identified this pattern as relating to a basic assumption which human beings hold as we enter any new group. We expect there to

be a leader and that we will be able to assume a position of 'dependency' on that person. If/when no leader arrives (or the designated leader deliberately refrains from exercising appropriate power) we begin to exhibit what Bion called 'flight/fight' or 'pairing' behaviours, both being based on assumptions about what 'should' be happening in the group. He warned those who want to impose order and comfort via 'leadership':

> *not to expect success, especially not permanent success. Individual action may not suffice to change the group's assumption, and even successful change probably won't last. Group life often leads from one mud-hole to the next. (Putzel 2001)*

Open, infinite chaordic simulations provide realistic replicas of such 'group meeting mud-holes' whose nature can be examined and learned from in a context that is 'safer'[66] than real life. This is so because of the possibility of patterning a simulation in ways that replicate 'real life' essentials—most especially the living, changing complexity of them.

3. Sufficient iterations develop clear patterns, while individual contributions remain unpredictable

The term *'strange attractors'* refers to the process by which a particular form of non-linear equation generates apparently random, unrelated outcomes until sufficient repetitions of the equation produce a surprisingly consistent image. In popular parlance this is known as the *butterfly effect*—coined by Edward Lorenz after observing the emergence of a wing-like pattern on his computer screen as he ran a series of nonlinear equations (Gleick 1990). It is not possible to predict where the result of any single calculation of such an equation will be positioned within the whole, although after a while the image being created will become familiar and all subsequent contributions simply add more detail to the density of the image. This is what happens in an open, infinite chaordic simulation. Each iteration adds more detail to the image of the process being modelled in the simulation but members of

66 That is a simulation has no 'real life' consequences and participants can experiment more freely with alternative behaviours.

each new group do not reveal, on first meeting, which of them will contribute the aspects of leadership, support, enquiry, conflict etc. that create the energy shaping the final experience of the whole.

For participants a simulation is usually a once only experience–although each week in XB may repeat the experience of previous weeks as behaviours settle into routine patterns and the same people provide the same contributions. For facilitators, patterns acquire ever more detail as they conduct further iterations of a simulation. Thus I now know that each XB will exhibit tendencies towards (or away from) group cohesion with the sum of individual degrees of emotional engagement being the 'strange attractor' determining the exact form of the cohesion (or lack of it).

Empirical positivistic science relies on rigid structures, seeking to impose these on natural phenomena. 'Chaos' on the other hand, waits until there are sufficient iterations of an equation or observed phenomena, before forming tentative conclusions about what might be being observed. The acceptance of emergent results means that 'chaos' places less reliance on certainties and absolutes and accepts the tentativeness of approximations. Fisher and Torbert express this point in this way: '*Approximate analogies for wholes, become more important than precise measures of parts.'* (p 18 Fisher and Torbert 1995). Simulations operate as approximate analogies for human behaviour, enabling examination of behaviour in conditions approximating reality but distinct from it. Objective research can only be precise about parts of the whole and is usually conducted remote from current contexts.

Patterns may become clearer and more stable, but never certain. In XB each iteration contributes to the growth of a recognisable pattern of behaviours. Diligent members take charge, 'free riders' hide! But each individual always retain the power to contribute in new and different ways. *Sufficient iterations develop clear patterns, while individual contributions remain forever unpredictable*, although as time passes they may appear to take on a predictability that belies an individual's continued possession of free will.

The structures that emerge in each open infinite chaordic simulation do differ in the details, and without thoughtful analysis each iteraton can appear to be unique and

unrepeatable. Analysis can reveal how structures emerging during the creation of an open simulation are 'similar' to earlier iterations, and likely to be approximately repeatable while never ***exactly*** the same. Similarly 'chaos' shows how individual forms, e.g. a snowflake, are unique and unrepeatable, although to all intents and purposes, the totality i.e. snow, may appear to have a single form. The key is to look at the process from different levels, different perspectives and different 'scales' of measurement.

Given the value of looking at processes in multiple ways, the next two chapters provide two different perspectives on XB. The nature of chaos as a way of viewing the world becomes evident as Chapter 5 unfolds the complex, multi-layered and dis-continuous nature of the simulation. Chapter 6 focuses in on my experiences of managing a number of class groups, and reflects on the learning I have gained in doing so.

Chapter 5

A Case Study: XB—an open, infinite chaordic simulation

Introduction[67]

XB has been the crucible for many aspects of this thesis. It has proved to be a (sometimes overheated) container in which my practice and beliefs about teaching have been tested – more than once. My engagement with its demands on both facilitator and participants, have shaped and re-formed my approach to the roles of Practitioner and Researcher in many ways, most specifically introducing the PractitionerResearcher as an alternate to either role. It has altered my understanding of learning as a process, and is continuing to teach me how to reason about my behaviour in accord with Argyris's proposal that *'the criterion that learning occurs is not simply [that] the individuals gained a new insight or a new idea. Learning occurs when [we] can produce the insight or design and can also produce new consequences from the insight.* (p 108 Argyris 1990).

Appreciating his contention that use of 'double-loop' learning (op cit p 94) involves commitment to reflection on both my reasoning and thinking I regard theories about 'chaos' as helped me understand that I need to behave differently with each new group of participants' and their efforts to resolve the dilemmas they create as they put XB and themselves, into action. Working with XB has provided more

[67] I want to stress that XB is a formal subject in a degree of Bachelor of Education in Adult Education. It uses a different teaching format, but in all other ways is a standard tertiary education subject.

opportunities for 'learning transformations'[68] (Mezirow 1990) than I had ever thought to encounter. Despite (or perhaps because of) the discomfort and doubts that I expect to beset me each time, I have become adept at reflecting on my reasoning about myself as a facilitator, and am convinced of the potential benefit of introducing, into learning environments, a degree of temporary instability as a partial representation of real life contexts and attendant uncertainties.

XB is, of course, not responsible for all that I am, but it has shaped much of how I now approach the teaching of simulations, and their use and design. In the course of my career I have come to accept that nothing is permanently certain and that apparently similar forms of activity can produce quite different results. I have also learned to enjoy challenging (however temporarily) participants' taken-for-granted assumptions about 'appropriate' learning content and processes. I have long since abandoned any preference for orderly learning. In doing so I eventually found myself adopting Mezirow's proposition that:

> *Transformative learning for emancipatory education is the business of all adult educators. We know that we must respond to initial learner interests and self-defined needs, but we do so with the intent to move the learner to an awareness of the reasons for these needs and how the learners' meaning perspective may have limited the way they customarily perceive, think, feel and act in defining and attempting to satisfy their needs.*
>
> *It should be clear, then, that every adult educator has a central responsibility for fostering critical reflection and transformative learning.* (p 357 Mezirow 1990)

XB has taught me that fostering critical reflection and transformative learning is a fine ideal, but that it can be unsettling for all involved, and difficult to enact. Understanding and accepting this has improved my ability to absorb and/or deflect

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68 Mezirow describes transformative learning as 'The process of learning through critical self-reflection' resulting in achievement of 'a more inclusive, discriminating, and integrative understanding of one's experiences.' Learning includes taking action as a result of such integration. p xvi Mezirow, J. and Associates, Eds. (1990). Fostering Critical Reflection in Adulthood. San Francisco, Jossey-Bass.

opposition arising from participant's reluctance to engage with a learning process requiring intensive critical reflection and offering the potential for transformative learning. This potential requires learners to act in ways that appear to conflict with current understanding, taking them well outside familiar comfort levels.

Ethical considerations

The following examination of XB recounts ways in which such journeys beyond the familiar provide participants with triumphs and difficulties having a personal impact beyond the usual effect of encountering new knowledge during tertiary study. This raises considerations about the potential impact of this form of learning, relevant to the general issue of experiential learning activities, but larger than the scope of this thesis. However it is important to indicate my ethical stance in regard to the use of such approaches to learning. In considering how to represent this, I find myself in agreement with Meighan and Siraj-Blatchford (Meighan, 2003) who provide a framework for considering such issues in the context of education in the United Kingdom, and note that

> *'authoritarian, autonomous and democratic forms of education can all be seen as having a role to play in producing flexible people. The answer to many questions in educational debate is transformed if there is a refusal to be simplistic and propose right/wrong positions.'* (p399 Meighan and Siraj-Blatchford 2003)

XB is clearly one form of education that is neither *simplistic* nor supportive of *right/wrong* positions, and accords well with the PractitionerResearcher stance. Despite the potential value of including such a teaching/learning mode in the broader context of the degree, some participants have difficulty making the transition from more conventional/familiar teaching practices used elsewhere in the program. To assist the transition, the briefing phase examines participants' perceptions of 'education forms' explicitly addressing the validity of 'simulation' and 'teaching' as appropriate modes for adult learning. As this is a Bachelor of Education in Adult Education participants are expected to understand such concepts as 'transformative learning' (Mezirow, see, for example footnote 68) as having the potential to create

permanent alterations in perspectives on one or more specific aspects of life experiences. In this regard Longstaff (1994) notes that

> *'although most people are attracted to fields of certainty, it is an unavoidable aspect of the human condition that we inhabit an ethical landscape that is inherently imprecise.' (p. 246 Longstaff 1994,)*

XB creates an environment suitable for the exploration of such a landscape, while offering a relatively safe context from within which to conduct such explorations. In introducing participants to XB I remind them that this is a simulation – a representation of a reality - paralleling actual or possible work/life experiences and as such is a place within which to explore alternative perspectives on their actions and choices. In offering such an opportunity I emphasise that one result may be the emergence of unsettling challenges to established beliefs.

The ethical dimension of such a stance is consistent with the concept of metaethics - described by Rohmann as

> '*inquiring into the usage and foundations of concepts such as right and wrong, good and evil. . . . [questioning] the role of ethics in life, the logical foundations of particular ethical systems and their validity.'* (p 123 Rohmann, 1999)

Resistance to enquiring into one's own ethical stance and/or beliefs and values may have many causes, including concerns about self-worth, past negative learning experiences reducing the capacity for balance in times of uncertainty, excessive certainty of the 'rightness' of one's position all inhibiting the capacity for critical reflection. Since my entire working life has taught me about the futility of attempting to anticipate all possible causes of such resistance I strive for a personal balance instead. This is based on accepting the impossibility of *knowing* beforehand the immediate causes of personal stresses, while appreciating that some aspect of the many patterns inherent in human behaviour, may emerge at any time in a simulation. I remain vigilant for signs that XB is generating possible stress for individuals and am ready, at any time, to provide alternative assessment modes for those who become unable to sustain contact with uncertainty for whatever reason.

Background

This chapter immerses the reader in the 'experience' of being in XB - insofar as this is possible on paper! Chapter 6 then reports on some of the more personal learning that has emerged from my encounters with it.

At the end of the 1980's the teaching of Organisational Behaviour was a major aspect of teaching for academics in business faculties in USA Colleges. The body of knowledge grew exponentially from the early 1960's and the demand for graduates with knowledge of the field was increasing rapidly. Faced with a growing quantity of information users of the literature were seeking new ways of communicating the ever-expanding knowledge base. The number of simulations for teaching Organisational Behaviour had been experiencing a growth, and a wide array of 'business simulations' using computer-mediated methodologies was now available. Popular texts for academic use used short simulations to demonstrate various aspects of human behaviour (Kolb, Rubin et al. 1979).

In this environment of evolving approaches to the teaching of Organisational Behaviour, Dr Roger Putzel was appointed a Professor of Management at St Michael's—a College in Winooski, Vermont, USA. As a new professor, his background included business consulting and research with colleagues including Bill Torbert[69]. Students at St Michael's are generally from the social sector known as 'middle America' and during his first year as a professor, Dr Putzel encountered a familiar range of responses to his teaching. Some studied well and consistently, while others appeared more interested in their social life and campus activities[70].

His concerns about poor performance and loss of learning opportunities were similar to that experienced by Harvey (Harvey 1999), who created the term *not*Teaching* to reflect his commitment to focusing attention on the students' capabilities for 'learning' rather than merely 'being taught'. The resistances he encountered generated a different response from that of many in a similar position. Like other

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[69] See for example Torbert, W. R. (1991). The Power Of Balance. Newbury Park, USA, Sage, Fisher, D. and W. Torbert (1995). Personal and Organisational Transformations. London UK, McGraw Hill.
[70] Comment based on personal discussions.

teachers he found himself considering how to 'force' the students to read the literature, however his prior work experiences, doctoral research and awareness of T-Group processes (Leland P Bradford 1964), caused him to focus on a collaborative approach to working on solving the problem together, rather than seeking to make the topic 'more interesting' for reluctant students. This brought into existence a skeletal structure for collaborative learning which has evolved, in the years since, into a learning process now called 'XB-Manual for a Learning Organization'—where the letters XB stand for 'e**X**perience **B**ased'(Putzel 1996). His goal was to create a memorable and relevant learning event. Persistence, research and experimentation led to the gradual expansion of XB into a full-scale simulation, which is now an established part of St Michael's Business Studies programs. Since 1996 I have been using XB in Australia and other academics have also adopted it elsewhere.

What is XB?

XB is an open, infinite chaordic simulation designed as an interactive, if over-simplified, experiential introduction to theories of organisational behaviour. In fact describing XB as if it was simply and always the 'same thing' is quite impossible, since each iteration is unique, even though all iterations share 'patterns' of behaviours and responses. As each new class moves into action, the behaviours of individual participants tend to approximate similar routines in accord with the directions in the XB Manual. However, these behaviours are never exactly alike, and while XB is 'life like' in its capacity to create 'real' experiences in a 'safe' environment, it is distinctly different from both 'real life' and more familiar classroom settings.

Participants find that they must 'invent' knowledge for themselves, rather than being passive recipients of someone else's. They have to establish their own parameters for the process in order to develop capabilities for arguing a case with their peers, in a manner that is surreally unlike—yet strangely reminiscent of real work, while totally alien to much of their prior education experience. On this point, the manual (containing XB's 'inert' form) says:

> *Our structure, for instance, is a tool you will find nowhere else. It doesn't replicate the structure of a typical business. It shuns the structure of a typical classroom with the requirement that participants reflect on and analyse what they see and do, and actively consider how to apply new understanding to existing contexts. (Putzel 2001)*

In brief, as shown in Figure 14[71], the structure comprises four *Departments*, each with three *Groups,* and is headed by a *Senior Manager*—the role occupied by the lecturer/facilitator.

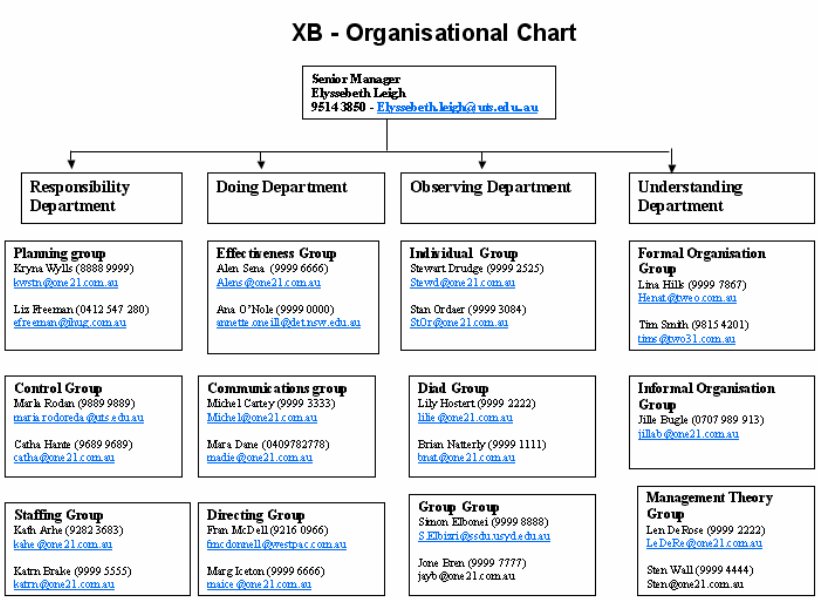


Figure 14 A typical XB organisation chart

For the *Senior Manager,* facilitating XB has similarities with themes explored in the film "Groundhog Day" where one individual finds himself endlessly repeating the same day—while all those around him are endlessly entering it for the first time. In effect, the role of the lecturer/facilitator in XB—and indeed of the facilitator of any truly open, infinite chaordic—simulation involves close observation of human behaviour. Their task is to use reflective practice to develop insights into their own, and participants' reactions, responses and behaviours, to form the basis of feedback

[71] Names and details in this chart are disguised

to participants as appropriate. It also contributes knowledge to the process of continuous improvement as a facilitator.

Meanwhile participants are entering XB 'once only' and the facilitator has the task of making balanced choices between 'telling' about potential learning opportunities and allowing them to 'emerge'—all the while facing the tension of individuals wanting to be told. As one student wrote:

> I think that I personally would have learnt more from this course than what [sic] I did if there was a small amount of direction.

Memo extract—2000

And another commented about their first XB class:

> I felt a lot of fear and resentment, [after the first session] even though I felt confident that it would be good for me in the end. Talking at break released the idea that a lot of students would have much preferred the 'teacher talk - me listen' approach. I'm afraid that although I am keen I felt like this too.

Memo extract—2000

Knowing that many participants are likely to share this participant's reluctance to become engaged, the Senior Manager has the on-going task of deciding moment-to-moment how to move, what to say (and not say) and most of all how to sustain the 'certain instability' that is the core of any open, infinite chaordic simulation.

The Manual

A key factor in XB's status as an open, infinite chaordic simulation, is that it replicates human behaviour as it is experienced in human organisations. To achieve this it relies on a detailed manual of job descriptions, which create 'concept' and 'administrative' responsibilities for individual members of the 'organisation'. Unlike

'business simulations'—which use computer-mediated methodologies to represent financial cycles and production activities—all of the attention in XB is focused on human behaviour. The manual introduces the process this way:

> *What will happen in this organization? No one can say exactly. You will take on a job. You will take responsibility for others' learning a certain set of concepts. You will watch others in action and will be watched. You will evaluate others and be evaluated. You will help manage this organization.*
>
> *Whatever does happen, however, will become part of your learning as a manager. You will want to make something happen or understand what is happening. This manual will help you. It contains (1) simple, practical tools for managing this organization and (2) basic set of concepts for understanding what happens (organizational behavior).*
>
> *We select and design tools for our own use. You will find them useful in other organizations, too. You may have to change some of them to use them elsewhere, but after this experience you will have the confidence to change them. So don't worry about their relevance. (Putzel 2001)*

There are 284 A4 pages in the current manual providing all necessary information about the structure and the process. It identifies all the tasks and relationships, but not in an easy-to-read formula. It is truly a manual for a 'learning organization' (Senge, Kleiner et al. 1997), and as such has a manual-type structure. Information for 'Departments', and their 'Groups' is provided—accompanied by relevant theories and instructions about tasks.

This logical arrangement serves to obscure cross-functional relationships and—as in the 'real world' of organisational divisions—can interfere with efforts to focus on the 'big picture' of XB as a whole. Even Departmental goals may be neglected as the urge to be task-focused causes attention to be drawn to immediate, and apparently urgent, Group tasks and needs. As all the Departmental and Group activity is occurring simultaneously, there is plenty of opportunity for confusion!

Underpinning Theoretical Frameworks

Since XB is a simulation, the underlying structure is inevitably influenced by the designer's perception of reality. In XB the selection of organisational behaviour frameworks is influenced by Dr. Putzel's knowledge of the field. It is important to note that the XB Manual contains many, equally important theoretical frameworks, which students must engage with. For instance one group of participants has the 'concept responsibility' for teaching the whole class how to plan '*backwards from the goal to the present state. Advocate participation in planning by those who will execute the plan.' (Putzel 2001).* While another group is directed to:

1. *Get members to describe specific behavior without judging or interpreting it.*
2. *Get members to point out to each other* ***unnecessary value judgments*** *[abbreviated to UVJ's] that they make.*
3. *Get members to make inferences from specific behavior to* ***Maslow's need hierarchy***. (Putzel 2001)

With regard to the selection of theories included in the manual, it has been said of Organisation Behaviour researchers that:

> *Within the organization sphere it is difficult for theorists as well as practitioners to rely* [only] *on the scientific method of explanation … the great number of explanations and their lack of reliability often confuses… [We] can escape from this dilemma by using a description which is favourable to [us], and with the aid of which [we] can explain the phenomenon. (Westerlund and Sjostrand 1979)*

In the case of XB selected 'favourable explanations' include

1) Learning—as a cyclical process
2) Personality—as indicated via the Myers Briggs Type Indicator (MBTI)
3) Human behaviour in groups as
   a) *following* a discernible sequence of conditions (such as the stages in group development proposed by Tuckman (Tuckman 1990), while

b) simultaneously *experiencing* a succession of 'states' described via reference to Wilfred Bion's concept of 'basic assumptions' (Grinberg, Sor et al. 1993)—which have the capacity to enhance, or debilitate, group performance

And because these three structurally-oriented frameworks *can explain the (*XB*) phenomenon* particularly well, I have chosen them to introduce XB's learning processes in this chapter. They have particular relevance in the way they inform and influence the behaviour of both participants and facilitator. Each is introduced briefly and then used as a lens through which the action of XB is described and explored.

Learning as a cyclical process—XB's Departments

David Kolb (Kolb, Rubin et al. 1979) developed the concept of learning as occurring in a cycle of four modes. While we generally need to use all four modes before learning is fully integrated into our awareness and capabilities, we tend to prefer one mode—and may have difficulty in engaging in learning that does not, at some point, address this.

In developing his approach to describing learning, Kolb suggested it is possible to assess individual preferences and identify preferred modes in such a way as to enable everyone to understand more about their own approach to learning. This, in turn, can alert individuals to the manner in which such preferences may shape their approach to activities that involve learning. Kolb's four learning style preferences are shown in Figure 15.

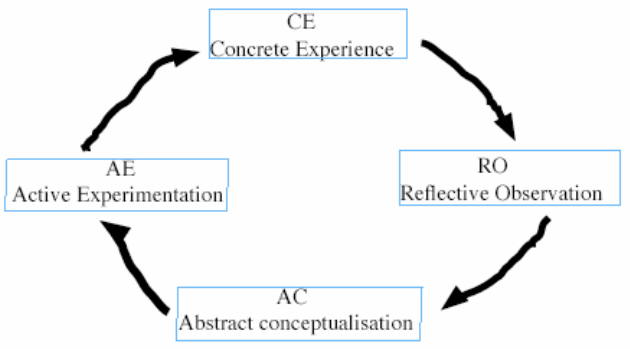


Figure 15. Kolb's four learning style preferences

Honey and Mumford modified this approach to develop a representation of learning

preferences that both identifies an individual's strongest preference and then maps out their total approach in the form of a 'kite' within the overall grid (Honey and Mumford 1986). Figure 16 shows this approach, with my own 'kite' superimposed on the gird as an example. They suggest that a learner will prefer to enter any new learning experience via the mode in which they have their highest score then moving in sequence through the remaining three modes in turn.

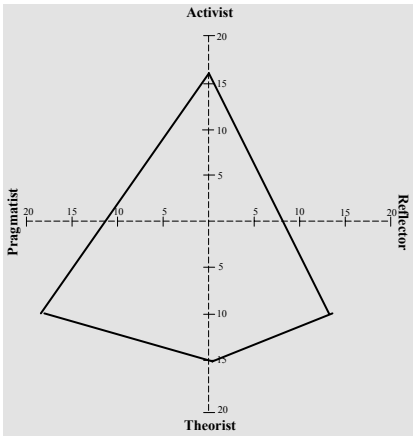


Figure 16 Honey and Mumford's representation of the learning styles concept

Their framework suggests the following basic characteristics of each of the four points of the cycle:

- *Activists* involve themselves fully and without bias in new experiences
- *Reflectors* ponder experiences, observing them from different perspectives
- *Theorists* adapt and integrate observations into complex logical theories
- *Pragmatists* like to trial theories and techniques to assess their practicality

A 'learning cycle' is played out in XB via the four *Departments* each of which represents one aspect of the cycle. Students are invited to self-select into membership of a *Department*, then into one of its three *Groups*. Each Department is tasked with work approximating one of the Learning Preferences. Figure 17 shows these correspondences.

Department	Learning Preference	
	Kolb	Honey and Mumford
Responsibility	*Active Experimentation*	*Pragmatist*

Doing	*Concrete Experience*	*Activist*
Observing	*Reflective Observation*	*Reflector*
Understanding	*Abstract Conceptualisation*	*Theorist*

Figure 17 The tasks of each XB Department, described as a Learning Preference

Not only does each Department have tasks representing the various components of the learning cycle, but their 'roster' of activities is arranged in a manner that reflects Kolb's observation of the cyclical nature of adult learning. The Responsibility Department is invited to begin the action, while the Doing Department is required to keep it moving, and the Observing and Understanding Departments must respectively describe, and use relevant theories to explain, what the Department members are observing around them.

Personality—The MyersBriggs Type Indicator (MBTI)

The Myers Briggs Type Indicator (MBTI)[72] is based on Carl Jung's (Jung 1974) concept of 'personality' as a composite of factors which combine in particular ways to create the make-up of each individual. His work enabled Isabel Myers and her daughter Katharine Briggs to develop a way of mapping these factors into a set of comprehensive verbal images of 'personality', as revealed through behaviour and preferences for ways of 'being in' the world (Thuesen 1992). In XB participants are introduced to the MBTI as a tool for developing an understanding of how individual differences respond to, and are affect by, contextual issues:

> *The MBTI is a self report questionnaire designed to make Jung's theory of psychological types understandable and useful in everyday life*. (p 5 Myers-Briggs, 2003)

While the emphasis is on better understanding of individual differences, some XB classes are able to develop their MBTI data to the point where the Staffing Group in

[72] For a personal assessment using this tool, participants in XB are referred to: http://www.advisorteam.com/user/ktsintro.asp

the Responsibility Department can provide members with a detailed analysis of how the collective of their individual profiles is likely to influence the behaviour of the whole. Armed with this perspective they are able to move towards an understanding of Lewin's insight that:

> *Groups are sociological wholes; the unity of these sociological wholes can be defined operationally in the same way as a unity of any other dynamic whole, namely, by the interdependence of its parts (Smith 2001)*

That is, the MBTI framework provides a lens for analysis of the interdependence of the particular 'parts' of the whole class, allowing them to arrive at an understanding of themselves in the context of the larger 'whole' of XB as well as in the wider world.

Stages in group development

Tuckman's model (Tuckman 1990) identified four stages of group development using the memorable terms '*forming'*, *'norming', 'storming'* and '*performing'* to define the stages. In XB, his concept is extended to seven stages with the addition of *'swarming'* and '*deforming'* and *'reforming'* (Homans, Jewell and Reitz, in (Putzel 2001). These seven terms define 'stage's through which groups move overtime. They provide a framework to help participants understand how emotional forces are working in (and on) any group of human beings as its members make their way through a period of time or a set of tasks.

Stages in Group Development
1. Forming—initial concerns about inclusion, uncertainty
2. Swarming—forming sub-groups, safety in numbers, uncertainty reduces
3. Storming—there are tests of 'strength', power plays, differing levels of commitment
4. Norming—informal (often untested) rules establish behavioural norms
5. Deforming—smugness, 'groupthink', unthinking conformity
6. Reforming—energy loss, blame, and concern about 'defeat'

7. Performing—maturity, valuing difference, honesty, openness

Figure 18 The seven Stages in Group Development, as used in XB

Figure 18 lists these seven stages of group development, with a brief note about the kind of experiences participants can expect to encounter. The XB manual applies the stages of group development concept to two 'cycles' of activity. Participants are expected to attempt[73] to complete their various assigned teaching and learning tasks in this time frame. The two cycles are designed to last thirteen or fourteen weeks of class time—the normal length of an academic semester.

Figure 19 and Figure 20 outline a suggested sequence for addressing the theoretical content of XB during the course of the two cycles.

Cycle 1	
Responsibility Department *Theories* about/practice of: Planning Controlling Staffing *Questions* : We are in a simulation—who are we? How do we plan the way ahead? How do we stay in/achieve control?	**Observing Department** *Theories* about/practice of: Unnecessary Value Judgments Paraphrasing Process observing *Questions:* How do we: 1. Observe ourselves in action? 2. Paraphrase to ensure understanding? 3. Recognise/avoid 'ladders of inference'?
Doing Department *Theories* about/practice of: Deciding Communicating Effective/efficient delegation *Questions:* How do we: 1. make good decisions? 2. communicate them? 3. know we are effective and efficient?	**Understanding Department** *Theories* about: Structuring organisations Developing group norms Building trust *Questions:* 1. What is our current level of trust? 2. How are we all exercising authority? 3. What group norms are we building?

Figure 19 The First Learning Cycle in XB

[73] The emphasis is on 'making the attempt'. The process is highly complex, and the constantly emphasised purpose is to learn from what is happening rather than simply 'completing tasks'.

Cycle 2	
Responsibility Department *Theories* about/practice of: Strategy Environment Competence *Questions:* 1. Are we strategic in this simulation? 2. How do we know? 3. Do our skills fit the jobs we are in?	**Observing Department** *Theories* about/practice of: Motives Perceptions Leading *Questions*: 1. Who's 'in charge of' this bun fight? 2. Why do we act this way? 3. How much do we know about us?
Doing Department *Theories* of/practice of: Dependence Modifying behaviour Assertiveness *Questions:* 1. Are we reliant or dependent? 2. Can we change? 3. What are appropriate changes?	**Understanding Department** *Theories* of: Systems Culture Trends *Questions:* 1. What theories explain our organisation? 3. Formally? 3. Informally? And in this context?

Figure 20 The Second Learning Cycle in XB

The stages are so arranged as to generate cross-fertilisation of ideas and tasks among the Departments. Sometimes this will be cooperative and positive, while sometimes it becomes competitive and acrimonious. It depends on personalities and interactions among participants. Regular class meetings are interspersed with small group activity and bounded by the normal routines of participants' weekly schedules. These contribute to highly visible group dynamics, and provide experiences in, and therefore potential for, gaining understanding of ways that groups alter their internal workings over time in response to changing circumstances.

Bion's Theory – Work Group/Basic Assumption Group

The fourth over-arching theoretical framework also concerns the nature of group dynamics, and draws on the work of Wilfred Bion:

> *Because groups do not develop predictably or even in one direction, it is useful to consider a tragic theory, i.e. one which says, "there is no possibility of progress; it's still the same, old story." The British psychologist Wilfrid Bion developed such a theory, building on the work of Karen Horney, a student of Sigmund Freud.*
>
> *A group (or organization) consists of two or more people with a goal. Groups beginning XB expect to accomplish their tasks smoothly but almost never do. They go through storming once or twice and then expect smooth sailing.*

> *When they don't accomplish their tasks or when members fight repeatedly, people get frustrated and discouraged, especially if they don't understand what is going on (avoiding understanding with a negative value judgment). Instead of trying to make a group function smoothly, this theory assumes we are in a mud hole and helps us get out of it—but warns us of more mud ahead. (Putzel 2001)*

Transmission of this concept occasionally earns XB an undeserved, but inevitable, accusation of 'negativity'. Since Bion's theory provides an honest, but apparently pessimistic, view of human relations, it requires the passage of time for participants to realise it is a more accurate representation of their experiences than is usually acknowledged. As this realisation develops participants either become more reflective and become less prone to criticise first and check afterwards, and simply likely to reject others' ideas outright. They also begin to realise that success can lead to disaster as readily as to further success.

Before the game begins

Before turning to a description of how these four theoretical frameworks combine to create the underlying structure of XB it is necessary to set the scene with a little more depth. The official subject outline for this course states:

> *This subject is the 'capstone' subject for the HRD strand of the Bachelor of Education. As such, it provides an interactive learning environment, using a structured simulation to represent a hypothetical organisational setting within which students work together to develop an understanding of the forces at work within groups and organisations. It provides resources for learning about professional development and organisational learning interventions to support and sustain continuous improvement and lifelong learning. (Faculty of Education 2003)*

It is as difficult to describe XB as it is to participate in it. The holistic nature of the process, evolving quality of individual and group relationships, and emergent understandings being achieved by individuals do not easily lend themselves to the

linear form of description usually reserved for academic courses. In XB everything happens at once as theories and practice overlap almost continuously. Developing skills in observation of group processes ensures that what is happening 'right now' becomes the basis for applying theories and developing an understanding of their limitations as explanations for what is being observed. Each class has its own peculiarities emerging from the composition of the class, the personalities, and desires, needs and goals of its individual members. The chaos that ensues as a result of this diversity may mean that patterns of behaviour and the implications for specific decisions and actions are more easily identified in hindsight than in the midst of the action.

The source document—the XB Manual—has expanded as XB has developed. As noted above, it is arranged into sections for the four Departments and their three Groups—each of which has carriage of relevant Departmental concept and administration responsibilities. Participants receive the manual and are 'inducted' into XB via a series of group activities with time for reading. They are invited to self-select into a Department after reading and considering the variety of tasks to be undertaken. For the first two weeks of semester there is general chaos as the usual understandings about how 'classrooms' operate are turned upside down.

In contrast with the more usual academic exploration of 'there and then' case studies of human behaviour, XB focuses on the 'here and now' experiences of the participants themselves, following the principles of the T-Group approach to learning about human behaviour in groups. As a learning-oriented study program XB incorporates:

1. Weekly face to face meetings, which are likely to include:
    - Student-facilitation of a whole group meeting
    - Student-led action to schedule future session content
    - Teamwork-focused small (Group) and large (Department) meetings both within and outside class

2. Weekly reflective/reflexive 'memos' to record personal goals, outcomes and learning

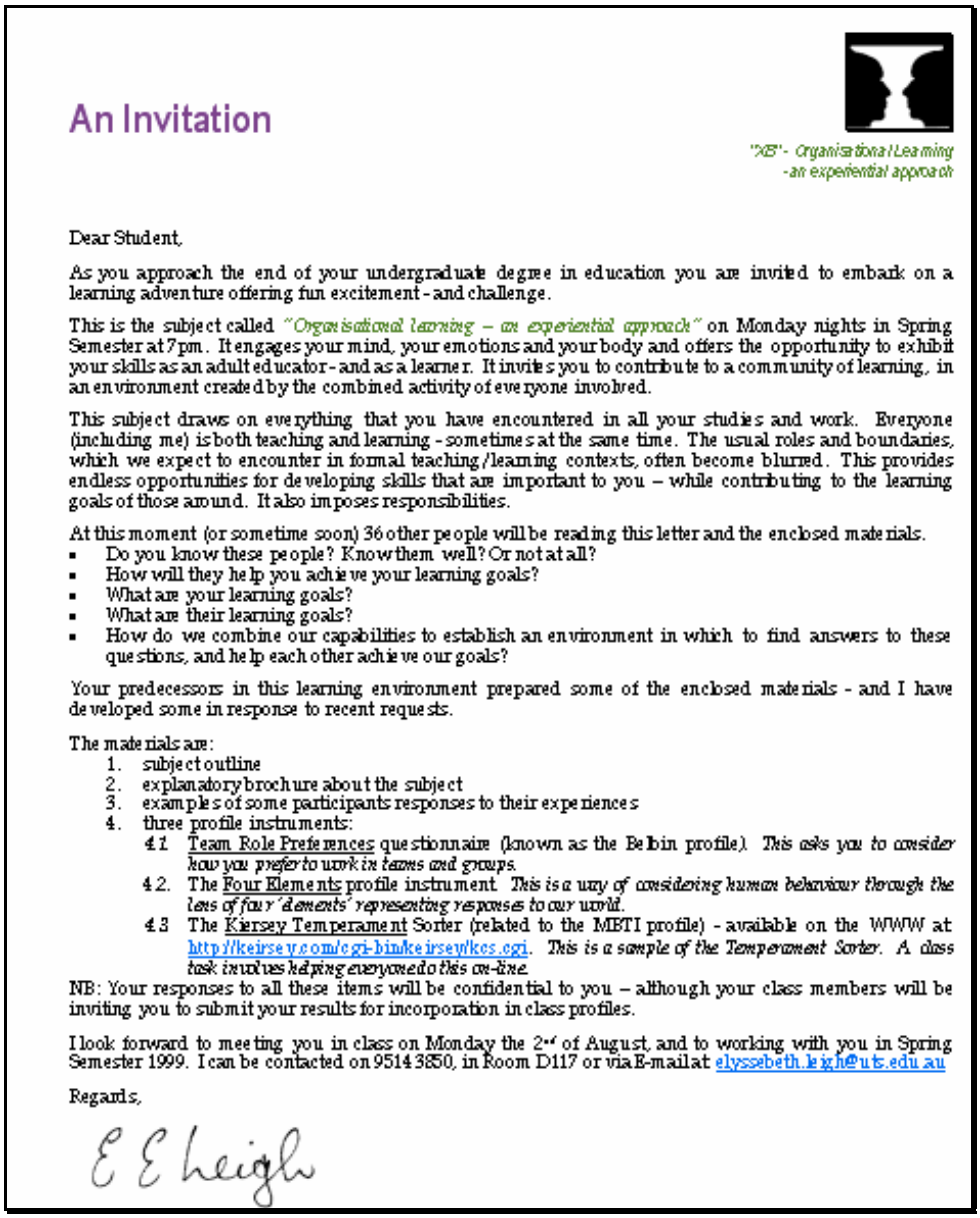
3. Acquiring an understanding of specific theoretical concepts in order to be able to teach them to other members of XB

4. 'On-line' (electronically supported/mediated) activity to build awareness and apply skills in regard to Internet-based learning

The XB manual opens with these words:

> *Please consider joining XB, an organisation. Our product, learning about management and organisational behaviour, is what we do: we learn to manage and to observe organisational behaviour.*
>
> *Confused? Get used to it. If you join you may not know what to do next for several weeks—until you start initiating projects and articulating what you see going on. If you are used to being a student, you will miss having a teacher telling you what to learn. If you are used to working, you may find this strange having to talk so much and so theoretically about what you are doing. We train managers to act **and** think. ((Putzel 2001)*

"What will happen?" the manual asks, and replies: *"No one knows – it hasn't happened yet!"* Prior experiences predispose students to expectations of being passive recipients of information, with occasional engagement in interactive episodes not requiring them to commit to actions *causing* things to happen. An introduction sent to participants a week before class begins, says:



An Invitation

"XB" - Organisational Learning
- an experiential approach

Dear Student,

As you approach the end of your undergraduate degree in education you are invited to embark on a learning adventure offering fun excitement - and challenge.

This is the subject called *"Organisational learning – an experiential approach"* on Monday nights in Spring Semester at 7pm. It engages your mind, your emotions and your body and offers the opportunity to exhibit your skills as an adult educator - and as a learner. It invites you to contribute to a community of learning, in an environment created by the combined activity of everyone involved.

This subject draws on everything that you have encountered in all your studies and work. Everyone (including me) is both teaching and learning - sometimes at the same time. The usual roles and boundaries, which we expect to encounter in formal teaching/learning contexts, often become blurred. This provides endless opportunities for developing skills that are important to you – while contributing to the learning goals of those around. It also imposes responsibilities.

At this moment (or sometime soon) 36 other people will be reading this letter and the enclosed materials.

- Do you know these people? Know them well? Or not at all?
- How will they help you achieve your learning goals?
- What are your learning goals?
- What are their learning goals?
- How do we combine our capabilities to establish an environment in which to find answers to these questions, and help each other achieve our goals?

Your predecessors in this learning environment prepared some of the enclosed materials - and I have developed some in response to recent requests.

The materials are:

1. subject outline
2. explanatory brochure about the subject
3. examples of some participants responses to their experiences
4. three profile instruments:
   - 4.1 Team Role Preferences questionnaire (known as the Belbin profile). *This asks you to consider how you prefer to work in teams and groups.*
   - 4.2. The Four Elements profile instrument. *This is a way of considering human behaviour through the lens of four 'elements' representing responses to our world.*
   - 4.3 The Kiersey Temperament Sorter (related to the MBTI profile) - available on the WWW at http://keirsey.com/cgi-bin/keirsey/kcs.cgi. *This is a sample of the Temperament Sorter. A class task involves helping everyone do this on-line.*

NB: Your responses to all these items will be confidential to you – although your class members will be inviting you to submit your results for incorporation in class profiles.

I look forward to meeting you in class on Monday the 2nd of August, and to working with you in Spring Semester 1999. I can be contacted on 9514 3850, in Room D117 or via E-mail at elyssebeth.leigh@uts.edu.au

Regards,

E E Leigh

Figure 21 Invitation to participate in XB

If participants check through the pages of the manual on the table in front of them, as they settle into the first class meeting, they might find the following paragraph:

> *People often describe this organization as a new experience, more personal and less programmed than classes or jobs they have known. They don't know exactly what to do at a given moment but realise that whatever they do will elicit a reaction from others around them. The organization creates this impression by design. Any group we work in takes on a life of its own, a life which affects the quality and efficiency of the work. (Putzel 2001)*

They may begin to wonder what lies ahead. The paragraph hints at a lack of certainty, suggests there may be a lot of action ahead that previous experiences of tertiary study may not have prepared them for this experience. And it is not long before this is proving to be the case.

Stages in the development of a 'typical' XB

The next section of this chapter uses the model of seven stages of group development and combines elements from a number of classes I have facilitated (and/or observed) to produce a composite picture of a complete iteration of XB, much as any participant might experience it.

1. Forming

The first few class meetings are usually volatile, and charged with concern and anxiety. Whether students have learned of the simulation's reputation, or are ignorant of it, entry into the classroom 'space' quickly makes it obvious that this is no 'normal' classroom situation. The lecturer announces that will not be 'teaching'. Her responsibility is overseeing the group's activity within the somewhat peculiar notion of the 'classroom as organisation'—where participants will be teaching each other and learning from the process.

> *The **forming** stage occurs when a group first meets—before it really feels itself to be a group. In this stage people do not feel safe. They don't know if they belong in the group or not. They are uncertain about the group's purpose, structure, and leadership. So they hide and watch. (Putzel 2001)*

Students entering class for the first session of an XB experience are somewhat bemused to see an array of hand-made posters on the walls. These describe a 'Decisionometer', a 'Bionmeter', a 'Johari window', and an anonymous set of initials arranged in the form of something labelled a 'Sociogram'. On their desks are text books, blank paper and coloured pens. Along one wall are a number of toy-like items that seem to bear no relation to the content of the subject they believe they have enrolled in.

The lecturer seems pleasant enough, and yet the atmosphere is not that of a conventional lecture, and the sense of 'something different' causes some feelings of discomfort and uncertainty as well as interest and curiosity. This first class is introduced as the start of a semester-long simulation. Some key aspects of simulations, specifically those that apply to XB, are mentioned. These include:

- This process has a 'life' limited to the term of the semester
- The lecturer will not control the action but will advise and support in the role of 'Senior Manager'
- This learning process will replicate aspects of the reality of organisational behaviour as seen through the lens of theories applied to their own actions in the classroom

They are told that because it is a simulation, there will be the normal three stages viz—a *briefing* to set the scene, the *action* phase which constitutes the bulk of the learning time available, and a *debriefing* to conclude the experience. The first two classes constitute a *briefing* phase to introduce the game, establish possible learning goals, identify expectations, allow time for reading, and let students self-select into Departments and Groups. These two weeks lead into the *action* phase of about ten weeks during which the focus is on Department and Group activity. The class in the final week is a *de-briefing* which brings together all their insights for a final review of the process and discussion of future applications of what has been learned.

In the *forming* stage the group exhibits typical behaviours that will later be recalled as indicative of the emotional states of hesitation and fearfulness, and will be contrasted with subsequent behaviours that emerge as the learning process unfolds. The students settle lower into their seats, fiddle with the textbooks and papers, glance curiously at the 'toys', and listen to the introduction. There is an air of implied passivity. They will wait to 'be told' how to act. While there are 'asides' and even sotto voce conversations, there is no overt effort to take charge of anything. For most, the notion of being 'in charge' of their own learning, of being held accountable for identifying what and how they are learning, and for assisting peers to learn, is decidedly unsettling.

They are more familiar with the routine of having the lecturer set out the learning objectives, distribute a set of readings, state the assessment tasks, and describe how the class will be run. Absorbing the idea that they are to be 'in charge' of both the process and their learning, and that their learning will depend on their own activity, takes quite a while, so the first session passes all too quickly.

They are randomly assigned to teams with the task of developing hypothetical descriptions of 'ideal organisations', and known and possible barriers to achievement of such a status. There is a guided tour of the manual and the learning cycle and stages in group development as the way events will unfold in this strange new organisation. Many participants are familiar with both concepts, since they are adult educators for whom 'learning about learning' is a key study focus. In this class however, the 'cycle' seems to have been transformed into a multi-layered tool to be used simultaneously for defining action and shaping learning.

Some students are already 'getting' the idea that they are expected to act while learning to observe, and that they will eventually be required to analyse behaviours and apply theories about them in the same moment. Concepts of reflection-in-action (Boud and Miller 1996) and reflection-on-action (Schon 1983)—previously encountered as theoretical constructs elsewhere in their study program—are about to be tested to the limits of students' capabilities.

Finally they are introduced to the peculiar 'toys', which turn out to be past participants' responses to the assessment task of producing a 'three-dimensional representation' of their learning. These include a lighthouse, a kaleidoscope and a mirror which, as you look into it reveals that "*XB—it is what you see"*. By the time they leave the class, participants are thoughtful, expressing a mixture of reactions—from great concern at the unusual nature of what lies ahead, to enthusiasm for 'something so different'.

One student's insightful comment provides a perceptive description of this experience of introducing XB to new participants:

> We went *through* the forming stage with cautious behaviour, avoidance of conflict was noted. This showed members' concerns about inclusion and acceptance. Another sign of the forming stage was a focus on the task; the effort to establish what we had to do as a Department.

Memo extract—1999

This stage may last for one to three weeks; however, if at the end of three weeks a student's memos are still indicating…

> It is still a little vague as to what the whole class is about.

Memo extract—2002

…it is time for the Senior Manager to intervene specifically to address the writer's apparent lack of focus. Usually, however, participants are beginning to 'get the hang of this memo writing', and the class/organisation is beginning to move on.

2. Swarming

> *…people in this swarming stage gravitate to informal subgroups, groups within the larger group. They find other people like themselves, people who have the same values or act the same. Usually these groups form unconsciously. (Putzel 2001)*

During the next week or two participants settle into a pattern of activity, attempting to create a 'high-performing organisation' in a classroom where, according to the XB Manual:

> *As organisation members act more like managers trying to achieve objectives and less like students following a programmed course or administrators following regulations, other members will get inspiration and knowledge*

> *from them. But much effort and some conflict may precede such high performance. (Putzel 2001)*

By choice (and occasionally default) participants have arranged themselves into one of the four Departments, and further sub-divided into Groups, as they make choices about who to align with, and who to distance themselves from. These decisions are made on an array of mysterious factors not always obvious, even to the decision-makers themselves.

Decisions are also faced about whether or not to 'name' the basis of the decisions and the resulting groupings. Normal human responses to each other have subtly influenced the emerging alignments—and may now begin to contribute to friction and/or cooperation within and across groupings.

> Already I can see the danger: of "compartmentalisation" (p.11 of the manual) occurring within XB. Of course I recognise that this is early days yet and I'm sure that some of the strategic, "bigger picture" concerns will be considered and addressed in the future. However this has highlighted my own workplace experience where different units and departments are all working busily away, often oblivious to one another.

Memo extract— 1999

One class session during this period included a tense meeting of a small group of students, where one person articulated her fear that she was being excluded from her Group's activity. She found the courage to express her feelings directly to those she felt were involved. The results, like many episodes in real life, were not really conclusive, yet those involved wrote about the experience and what they were learning about the effect of their personal actions on the emotions of others.

Such meetings are typical of this period—sometimes they are successful, sometimes they merely contribute to further tension. Individual capabilities for entering and working through potentially transformative experiences vary widely. Consequently

the progress through the *swarming* and into the *storming* stages of the action typically involves a mix of boredom and confusion. The whole class attempts to make progress towards some kind of clarity about *"what the heck is going on"*. One participant put it very succinctly:

> We *swarmed* in a conscious way when members made known their preference for the group they wanted to be in. Members with similar interests or values were able to form a cluster openly. Our newly formed Informal Organisation group was then forced back to the *forming* stage. Once again cautious, polite behaviour was noticed as well as a sense of frustration by all members whilst we established our goals. We then moved quite quickly into an early *storming* stage where we challenged ideas and questioned decisions already made.

Memo extract—1999

3. Storming

> *Conflict occurs in the third stage,* ***storming****. Individuals who feel secure in their group membership and sense the support or affection of others like them need to test their strength. Can they control the group? They do battle to find out. What people fight about depends on the values in conflict. Often in student groups, people differ in how seriously they take the work of the group. (Putzel 2001)*

Power! Who has it, who exercises it, who wants it, and who wants to avoid having it—is the single strongest focal point in this stage of group development. The conflict that typifies this stage is certainly close to the surface of many exchanges. In more than one XB class some members have begun to exercise their interest in power and control. They see an urgent need for direction and it slowly dawns on them that they really are in the driver's seat—if they choose to act.

A typical example of such awareness emerged with a participant who was nervous about the idea of taking control and sought advice from the Senior Manager. With confirmation that she had the power to act as she chose—she did. And as a fellow participant observed, she got all—and more—than she could have anticipated:

> It seems that there is a consensus within XB that the time has come for us to slow down and take a good hard look at ourselves and at what we've become. And what have we become? A bunch of task focussed workaholics who have no time to smell the roses? A collection of small groups obsessed with their own agendas with little regard for the learning of others? A seething, writhing mass of confused humanity screaming all at once "STRUCTURE, PLANS, CONTROL!" "FREEDOM, INTUITION, SELF DIRECTION!" Quiet types seem to be uninvolved, just trying to float through the whole experience, patiently waiting for it all to make sense to them, or for someone to explain it in terms they can understand.
>
> Please do not adjust your sets, normal transmissions will resume shortly.

Memo extract— 1999

The time that a group spends in the *storming* stage can vary widely. On at least two occasions individuals have fought tenaciously to reject XB and won—at least to the point of causing premature closure (Leigh and Spindler 1998). Individuals have experienced extreme reactions to the central process of XB. While some are accepting responsibility for directing their own learning, assessing, and being assessed by their peers, others are desperately trying to get the Senior Manager (or anyone) to 'take charge', or failing that, are seeking ways to escape from the trauma of such 'freedom' of action.

The *storming* stage creates many of the defining moments in each iteration of XB. Those classes that weather the "storm" (the vast majority) and gain insight into, and understanding of, the forces acting on their behaviour and responses, establish high standards for open communication, move away from the more turbulent elements

of storming, and begin to generate 'norms' that contribute to a growing sense of camaraderie.

> XB is about the experience of learning, this can be frightening, confusing, frustrating, exposing and even hurt a little. With XB you can choose to sit back and just do the minimal amount or you can get involved. This is when you really start to understand who you are, how you operate in certain situations, how others are effected [sic] by your decisions and reactions and what values and belief you have within the context of an organisation.

Memo extract— 1999

> I believe that sharing the information in the memos will contribute to the development of new ideas on better managing the department and the organisation as a whole.

Memo extract— 1999

> I realise that I need to ask questions to gain a better understanding of the materials and—like in business—there is no glossary of terms or definitions. You have to look at the material at hand and make up the rules and the 'between the lines' yourself.

Memo extract— 1999

4. Norming

*In the fourth stage, **norming**, the group decides (perhaps unconsciously) what members may and may not do, they develop informal rules about behavior (norms). Reacting to the battle over differences, the group exerts strong pressure on people to conform to the standard—this group's*

> *standards—and not to fight. The group gets down to work, keeping people in line with a watchful eye* (Putzel 2001).

Higher levels of energy accompany the development of group norms. At last there is some direction and focus! Even though the Senior Manager is maintaining an 'assisting not directing' focus, there is now enough activity to feel comfortable that something is being achieved. During this phase Groups, and Departments are implementing their tasks and responsibilities via surveys, meetings with each other, moderating class action, collecting agenda items for future sessions, making presentations to the whole class (or small groups) and generally learning to take control of their own learning. Departments are becoming cohesive and, while there may be not much clarity about the 'whole' of XB, the parts are working more smoothly. Energy is focusing on emerging goals.

> I am learning that change within an organisation *normally* creates a sense of loss of control, a fear of the unknown and uncertainty about the future.

Memo extract—1999

> I would like to thank the XB members who made last week's session [so] productive and enjoyable… In my reading this week, I went back to the beginning and read a timely reminder. Page 6 of the manual, reminds us to use the word "**through**". We are working our way ***through*** an experience which is finite in time (the XB semester). I believe our greatest learning as individuals will occur as we continue ***through*** our own organisational lives and reflect on the process of XB.

Memo extract—2000

5. Deforming

But the very rules and procedures that make the group productive may then begin undermining it. The Manual refers to this fifth stage as **deforming.** The group feels smug about itself. They think they have found a formula for success. No significant differences divide them, the condition Irving Janis (1982) dubbed groupthink:

> *People write memos, make presentations, and hold meetings as usual. But the memos are the same, old stuff, the presentations rehash the reading, and people joke around in the meetings. Nobody is learning anything new. And many individuals and groups say to themselves, "Well, this isn't the best work, but I'll depend on someone else to shine." (Putzel 2001)*

In a paradoxical manner, the onset of uniformity may increase the tension for some individuals not among those experiencing the power of taking charge. At times individuals have felt disaffected enough to attempt sabotage, lodging formal complaints to Faculty authorities in an effort to impede progress towards further self-control or specific tasks such as peer assessment.

Individuals lead whispering campaigns—with the apparent goal of denigrating others who are engaging with the process, taking charge and enjoying the learning.

[My] next mistake was to try to make sense of the disorder, by taking control by using the Path-goal theory of leadership (p186). This was effective in the terms of guidance for the class in general but then it alienated me from different members of the organisation and offended others. My behaviour was not part of the norm; the unspoken rule of [not] over-achieving was broken (p181) From this mistake I then created a pattern of norm as being a passive learner again, expecting others to take control of the learning. This could be reflected in my lack of contribution to the class from this point on (p154) I strongly believe that you control what is happening in your life.

Reflections - 2001

At the very time that XB is experiencing increased stability and apparently achieving uniformity of intent, there may be a decrease in energy—the achievement of some level of 'normality' may itself begin to rob the class of the energy derived from the positive tension of creative conflict.

> Everyone seemed to be looking for that one person to take the lead—it was certainly not going to be me. Being slightly out of my comfort zone, whilst uncomfortable is manageable. This was a nightmare. Finally L. took control (whew) and started the ball rolling.

Memo extract—1999

Some classes experience a form of contentment at having addressed the conflict and feel disinclined to venture into more stressful exchanges. Thus the learning stabilises at a reasonable level of understanding, but falls short of the potential for true transformative learning. In the spirit of the well-known children's story of 'The Emperor's New Clothes' (we'll all pretend together that we can't see what's really going on), some participants may recognise that better quality could be achieved with renewed effort—and they face the choice of speaking their truth or being silent.

> The shadow side of the XB experience (in my 3D image) includes the hostility, resentment and confusion generated as people struggle to come to terms with the XB learning concepts.
>
> The golden side (of the image) represents passion, positive growth and learning developed from sharing the XB experience. The experience that teaches us when it is appropriate to observe, to understand, to take responsibility or to…just do it.

Memo extract—2002

6. Reforming

> *Then the bubble bursts, and the unpleasant stage of **reforming** begins, if time permits. The group loses its energy. The members who show up—fewer than before—blame each other for the defeat they have suffered. Old differences surface, unresolved. It seems like the storming stage but more discouraging, for members now know that they cannot simply bury their differences. (Putzel 2001)*

> Quite a few members were absent tonight and although I am sure there are valid reasons for this there was certainly a sense if [sic] unease and less enthusiasm. The 5 week break [due to our proximity to 2000 Olympic Games sites] was really too long and in terms of the organization team development I think it set us back a level. I had a sense last night that in my department we were back into the storming stage reassessing our alliances and 'fighting for control of the group' (page 221 of the manual). In the larger group each department is very polite and is 'going through the motions' but there is a sense of holding back and 'feeling' each other out.

Memo extract—2000

Where brave and observant participants choose to speak up, their groups come to recognise the value of continuing the struggle to avoid complacency and rest. These classes encounter a renewal of energy with variable responses to the demands for commitment to renewed action. This stage of transformation will include burgeoning recognition that conflict is a natural part of human endeavour, much as an intensive football game represents a battle of opposing forces who are nonetheless readily able to reconcile their differences at the end of their game-based 'battle'.

> This experience has developed my awareness… to look outside the square, to focus on the broader picture. On page 186 (manual)

> Socrates said about self-knowledge, that he only knew one thing—that he didn't know anything. A person who knows that they don't know how to do something can still get it done—but a person who doesn't know that s/he doesn't know, can't!

Memo extract— 2001

In a classroom setting there may be a sense of defeat. As the manual notes in reference to Wilfred Bion's 'basic assumption state of groups':

> *Whatever you do, remember to describe it later and try to fit it into Bion's theory. If you use the theory in this way, remember its tragic nature. Whatever you do is an attempt to become the group's savior [74]. But don't let this stop you.*
>
> *Furthermore don't expect success, especially not permanent success. Individual action may not suffice to change the group's assumption, and even successful changes probably won't last. Group-life often leads from one mud-hole to the next. Fortunately that gives us more opportunity to learn in XB. And throughout all this development of group life individuals and small groups have been developing and delivering their particular sets of theories and concepts as XB continues to develop and examine its own development. (Putzel 2001)*

This can be a difficult message to absorb. The idea that there are no certainties, that even success can lead to future failures ('mud-holes'), however evident it may be in the 'real world' around them, is an unpleasant one to come face to face with in a classroom. The focus on observing the action can be as urgent as the felt need to complete unfinished tasks. Yet there may not be time for both, so decisions may need to be made 'on the run'.

---

[74] Bion uses this specifically religious term to indicate the degree of dependence that a group may have on 'someone' becoming a 'leader' to rescue them from the fear of being without 'leadership'.

7. Performing

> *In fact, [groups] reach maturity when they begin to value their differences. In **performing**, groups use differences among members as sources for new ideas and as a defense against groupthink. Humbled by the previous stage, members take another look at themselves. They get to know and understand each other and no longer perceive difference as a threat. They discover hidden resources in the group and accommodate them. (Putzel 2001)*

The data in Figure 22 records a review conducted by an XB in 1999. It illustrates the emotions and issues recognised by participants as present in their deliberations. This group seems to have been moving between *reforming*, (a good deal of potential for conflict identified in the list) and *performing* (participants' acknowledge the presence in the classroom of a good deal of honesty and openness).

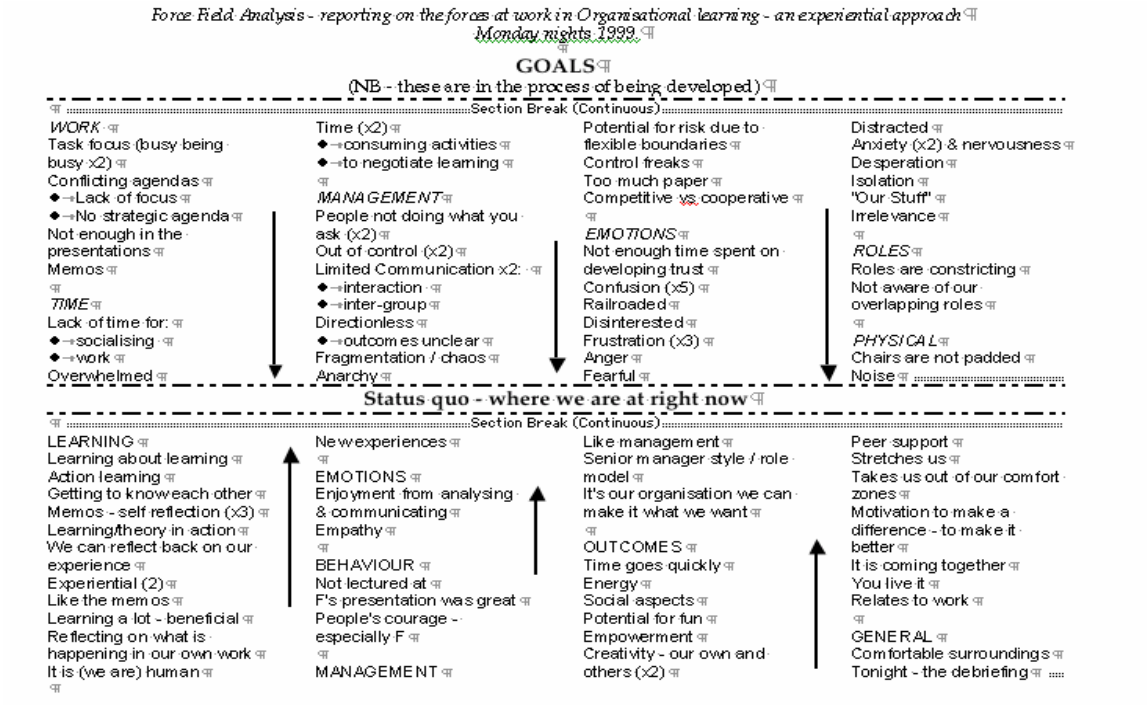


Figure 22 Results of a Force Field analysis conducted by an XB class on its own processes

Resistance, in some form, happens frequently. On each occasion the Senior Manager faces a familiar dilemma—to address the issue in private with the individual (resolving the issue but disabling the opportunity for wider understanding of relevant issues), or to take up the matter as a group concern (placing the individual participant

at the centre of perhaps unwanted attention). There is no 'perfect' answer, and the Senior Manager faces this quandary anew with each class. Participants also learn to identify the benefits for themselves, fro example:

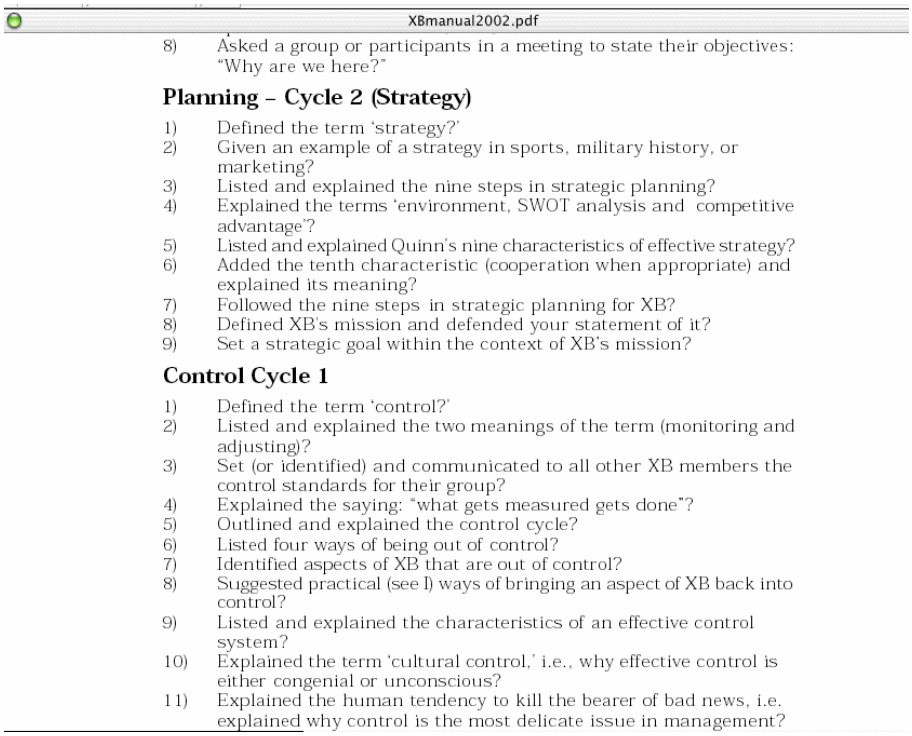
> A few weeks ago, I stated in one of my memos that "I would have resigned from the organisation" (mainly because the chaos and confusion was too much for me). I now retract that statement and say that if I had taken that option, I would have done a great disservice to myself because I would probably never have had the chance to objectively reflect (in a 'safe' environment) upon some issues that are crucial for my growth.

Memo extract— 1997

Assessing the Learning

Given the open, infinite chaordic nature of XB, it is complicated to generate, and then collect, sufficient data to be confident that participants are learning enough of what is available. A key factor incorporated into XB's structure is recognition that assessing what is being learned requires quite different strategies from those usually employed to assess 'what has been learnt'—as, for example, via assignments or end of semester examinations. It is virtually impossible to fully identify the variety of personal learning goals, which may be set and achieved by individual participants. It is similarly useless to use standardised techniques for assessing what 'has been learned'—especially when some of the most powerful learning may not occur until well beyond the direct experience of the activity. The assessment tasks for XB are therefore deliberately designed to allow participants to drive the measurement of their own learning as much as possible.

The XB manual includes a list of Behaviourally Stated Objectives (BSO's) a selection of which shown in Figure 23. Each class decides how much to attempt to achieve–and measure—from all of these items! What is important in real terms, is the quality of their work and the depth of analysis that is applied to their efforts.


XBmanual2002.pdf

8) Asked a group or participants in a meeting to state their objectives: "Why are we here?"

Planning – Cycle 2 (Strategy)

1) Defined the term 'strategy?'
2) Given an example of a strategy in sports, military history, or marketing?
3) Listed and explained the nine steps in strategic planning?
4) Explained the terms 'environment, SWOT analysis and competitive advantage'?
5) Listed and explained Quinn's nine characteristics of effective strategy?
6) Added the tenth characteristic (cooperation when appropriate) and explained its meaning?
7) Followed the nine steps in strategic planning for XB?
8) Defined XB's mission and defended your statement of it?
9) Set a strategic goal within the context of XB's mission?

Control Cycle 1

1) Defined the term 'control?'
2) Listed and explained the two meanings of the term (monitoring and adjusting)?
3) Set (or identified) and communicated to all other XB members the control standards for their group?
4) Explained the saying: "what gets measured gets done"?
5) Outlined and explained the control cycle?
6) Listed four ways of being out of control?
7) Identified aspects of XB that are out of control?
8) Suggested practical (see I) ways of bringing an aspect of XB back into control?
9) Listed and explained the characteristics of an effective control system?
10) Explained the term 'cultural control,' i.e., why effective control is either congenial or unconscious?
11) Explained the human tendency to kill the bearer of bad news, i.e. explained why control is the most delicate issue in management?

Figure 23 A sample of the Behaviourally Stated Objectives in XB

For the purposes of formal assessment in my classes two on-going assessment tasks are identified. These are:

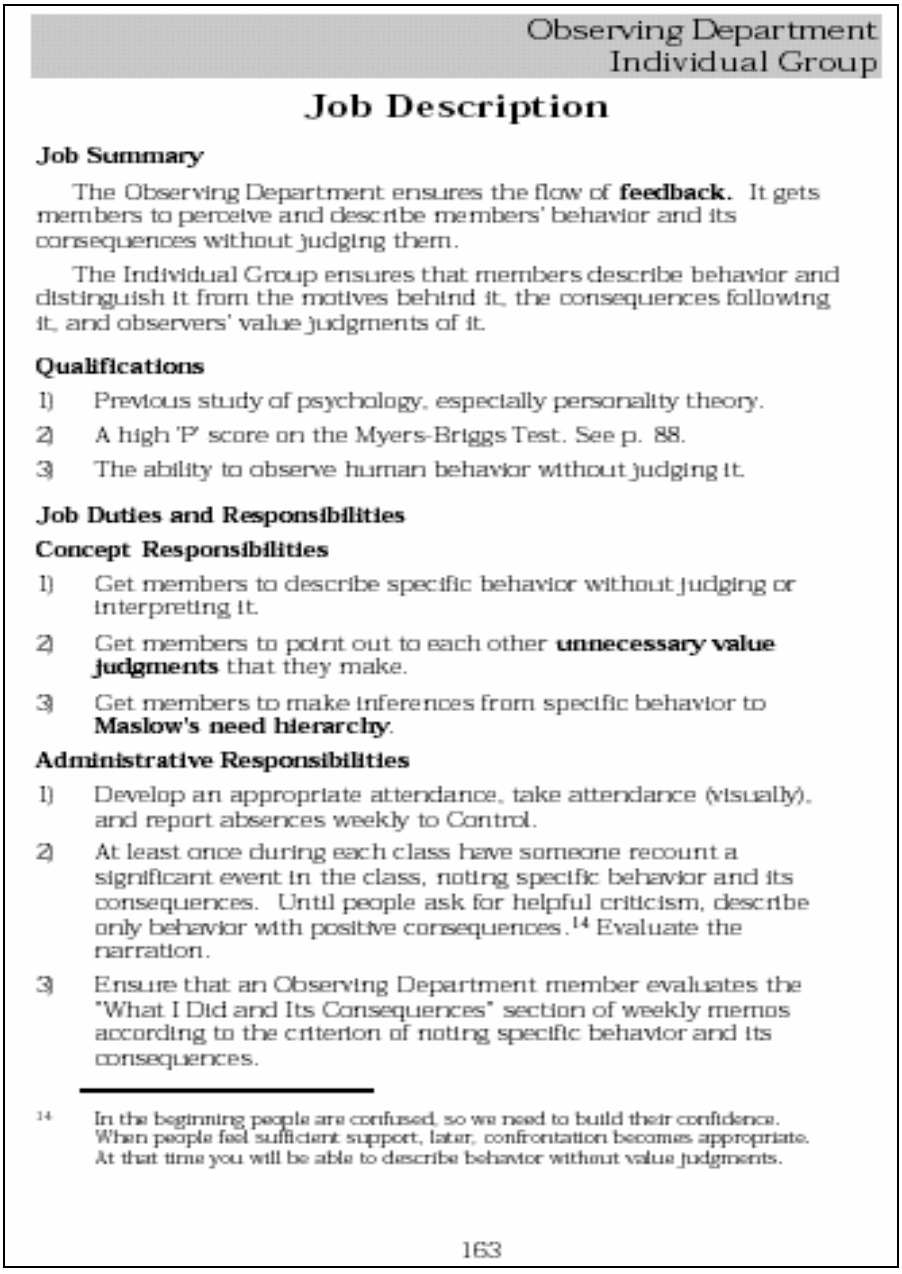
1. ***Weekly memos***

   Written and submitted for peer assessment, extracts of such memos have been used throughout this chapter. The memos grow in quality over the course of the semester, and are the focus of a good deal of the routine activity, as they are collected, collated, and distributed for peer assessment—according to assessment criteria devised by members of the Responsibility Department Control Group. These are established in accord with guidance from the manual, and must be presented to the whole class, and are often strongly debated and heavily modified before acceptance.

2. ***Contribution to on-going Department, Group and class activities***

   Students must be, and be seen to be, appropriately contributing to the learning process according to the requirements of their Department and Group. These

are assessed via the BSO's and the tasks are presented as 'job descriptions' for each Department and Group. The Job Description for the Individual Group of the Observing Department is shown in Figure 24.



Observing Department
Individual Group

Job Description

Job Summary

The Observing Department ensures the flow of **feedback.** It gets members to perceive and describe members' behavior and its consequences without judging them.

The Individual Group ensures that members describe behavior and distinguish it from the motives behind it, the consequences following it, and observers' value judgments of it.

Qualifications

1) Previous study of psychology, especially personality theory.
2) A high 'P' score on the Myers-Briggs Test. See p. 88.
3) The ability to observe human behavior without judging it.

Job Duties and Responsibilities

Concept Responsibilities

1) Get members to describe specific behavior without judging or interpreting it.
2) Get members to point out to each other **unnecessary value judgments** that they make.
3) Get members to make inferences from specific behavior to **Maslow's need hierarchy**.

Administrative Responsibilities

1) Develop an appropriate attendance, take attendance (visually), and report absences weekly to Control.
2) At least once during each class have someone recount a significant event in the class, noting specific behavior and its consequences. Until people ask for helpful criticism, describe only behavior with positive consequences.[14] Evaluate the narration.
3) Ensure that an Observing Department member evaluates the "What I Did and Its Consequences" section of weekly memos according to the criterion of noting specific behavior and its consequences.

[14] In the beginning people are confused, so we need to build their confidence. When people feel sufficient support, later, confrontation becomes appropriate. At that time you will be able to describe behavior without value judgments.

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Figure 24 - Example of Job Description documentation in the XB Manual

In addition to these two assessment tasks I developed a third task to suit the needs of XB's Australian's context where participants' focus is on increasing their understanding of learning in relation to organisational behaviour and learning in workplace contexts.

3. *Develop a 3-Dimensional representation of your learning*

This task requires participants to create and bring to the final class for display in an 'art gallery event' a 'constructed' model of key aspects of what they know they have learned. In effect 3-dimensional representation can be any form of media, and participants have produced music CDs, paintings, posters, and other images as illustrated in Figure 25 and Figure 26 below. Each model must be accompanied by a one page commentary summarising the learning.

Rounded metal tip the learning spiral is (in fact) endless but 'rounding off' is used to link the class experience to work.

"XB" in metal on the base: like all organisations it has particular shape and form.

Solid wood base XB is grounded in reality and solid fact. *Rick Falconer. 1997.*

Metal spiral - the action learning steps: Plan Assess, Observe, Act (each step on the spiral leads to the next and higher level of inquiry and exploration)

Tensile strength *XB* is strong because of its members, and tension (in engineering terms) holds it taut and in shape and place.

Figure 25 A 3D Image of XB, 1997

'Time' as analogy for structure and learning.

Organisations have a 'shadow side'.

An organisation as a 'recipe' requires ingredients, mixing, finishing and humour.

Figure 26 Three 3D images presented in 1997 now used in the 'invitation' documents

As noted above, this requirement is introduced at the first meeting, with examples of previous participants' 3D's on display. While the Senior Manager does not make further reference to it, many memos do comment on the puzzling nature of a task that requires them to 'represent' their learning.

Am contemplating the 3D model, it's a mystery to me at present.

Memo extract—1997

Achieving closure

Towards the end of the semester participants are becoming more able to identify what has been happening in and to them. They are also able to write more reflectively and to draw parallels with their wider life experiences:

> Three weeks from the end of semester; and whilst I am not so confused about the purpose of XB, I would be less than honest if I were to say that I am totally clear on what I have learned from the experience. I do not believe, however, that this is a bad thing as sometimes the best learning for me occurs long after the event has happened and I have had time to reflect and link to real life situations.
>
> For example not having set lectures and being responsible for my own actions and outcomes is not that much different from working in an organisation that is undergoing structural change and is moving towards an outcomes-based approach in its management functions. The behaviour exhibited by workers tends to become task focused and the balance between task and people maintenance is not balanced and can lead to conflict in the workplace. This occurred in XB and it resulted in disharmony within the group.
>
> The 4 Departments became so focused on what they had to achieve that communication between members of the group ceased and long standing relationships were at risk. Fortunately the group took steps to air the problems and commenced working as a more harmonious group.

SS 1997

By week 13—the final week of classes—participants have usually become able to recognise their own learning achievements, and reconcile their initial disorientation with the outcomes of the process they have created. They have developed their own version of XB's tools for analysis of personal and organisational behaviour, and been able to look beyond the rush and bustle of their immediate Group tasks towards

understanding how the process has replicated ways that workplaces often enact the theories of organisational behaviour.

Student commentary

The following extracts are from the final memo submitted by students at the close of 'their' XB. This selection provides a cross-section of observations and indicates the kind of awareness that participants gain. The learning is not over!

> Dewey (1987) quotes, 'Reflection seeks to transform a situation in which there is experienced obscurity, doubt, conflict, disturbance of some sort, into a situation that is clear, settled, harmonious.' How will I frame my own experience? Is learning a matter of attributing meaning to experience?
> Reflection for me meant standing outside myself to see another vision. I say this because I did not want to believe I had learnt anything from XB. However critical analysis at this stage in the course, has made me realise that I was wrong. How could I not learn something when I was group member of the Observing Department? The XB manual told us we would make mistakes and I had. I realised this as soon as I re-read part of my job responsibilities that said 'perceive and describe behaviour and its consequences without judging it', I had actually been learning without realising it.

Reflection - 2001

> Just as the acorn - Seed of the Oak - is unrecognisable as a Potential Oak Tree, so is the seed of the XB Organisation unrecognisable from its ideal outcome - The Learning Organisation.

Reflection - 2000

> From the out-set of the journey, it was like "Fred: the ball is in your hands!" XB is a journey of self-improvement. I have developed certain patterns of learning behaviour in my years of learning. What this means is that I have built up a pattern of behaviour

> that I use to learn, but I am unaware of what that pattern is. The learning that occurs in this journey helped unfold the pattern.
> To understand and improve how I learn I have to become explicitly aware of what I did. I used reflective thinking as a technique to help me think about how I think. I observe myself learning, and at the same time learn from observing how others learn. Watching, doing, feeling and all the while doing, I helped shape the journey.

Reflection - 2000

Summary

This case study describes the atmosphere of the context and action that 'is' an XB experience from the participants' perspective. Chapter 6 explores aspects of the learning it offers a facilitator. Taking on the role of facilitator for such an open learning process has been a more demanding and challenging task than I could ever have anticipated when I set out to gain its acceptance as a subject in the Bachelor of Education in Adult Education, University of Technology, Sydney.

Whatever participants learn each year I have gained more from their contributions and efforts than I can list. Risks are high at the beginning of each new XB. Will this group be unable to draw itself together? Will I resist the dependency generated by fear of the unknown? Will individuals with leadership capabilities emerge?

Whatever the answer to each question each new group brings the potential to grow its learning in ways no conventional teaching process can emulate. But it also brings risks and discomforts that seldom trouble a teaching environment. While I would choose to teach no other way, I have learned that the excitement and energy in each XB classroom has both benefits and penalties and each educator must make their own choice about whether to embark on this learning journey.

Chapter 6

Facilitation of XB

Introduction

As each XB comes to a close, the facilitator has again navigated the difficult path of being a 'knower' while not being a 'foreteller' of the story created. Inevitably the role of Senior Manager has elicited varied responses from participants—some have seen the Senior Manager as *'savior'*, others may feel betrayed. Most are exhilarated by their learning, while a few remain hostile.

One result of these experiences in the development for myself of a stance I call 'dispassionate reflexivity' - an *ability to act* on the understanding that any *internal* emotional turmoil generated by *external* events must not be mentioned – by the facilitator experiencing them - in the context of the specific simulation environment producing it[75]. While *privately* acknowledging the personal impact of the turmoil, the facilitator must refrain from taking any *public* action.

Becoming aware of the PractitionerResearcher enlarged my awareness of how it contributes to my behaviour as a facilitator and enabled the growth of conscious awareness of its impact on my actions. As this was occurring I came to accept that:

> *To rid yourself of a problem—*
> *Stop looking at it as a problem. It's an*
> *opportunity*
> *to be alive.*
>
> (p 43 Durst 1988)

[75] I am specifically limiting this to the facilitator's behaviour in the context of simulations, since other responses may well be more appropriate for participants in the simulation, and for everyone in the course of real life events.

This is the focus of this chapter. I thought I had a 'problem' I had to 'solve' if I wanted to continue using XB as a learning environment. Moreover I thought it was an externally generated problem that I had to 'overcome'. It is now clear to me that persevering with XB was (and continues to be) an opportunity for learning and skill development even in times of difficulty and hurt.

Much has been written about the skills and knowledge needed for effective facilitation (Jones 1988; Cameron 1998; Heron 1999). Although vital to the process of creating experiential learning events, the nature of such skills and knowledge are not my concern here. They reside in Bloom's domains of Cognitive and Psychomotor educational activities, and there is something extra involved in sustaining a facilitation stance that accepts the likelihood of being, for a while, regarded as simultaneously saviour and persecutor. This 'something extra' comes from Bloom's Affective domain, which includes:

> *the manner in which we deal with things emotionally, such as feelings, values, appreciation, enthusiasms, motivations, and attitudes. (Clark 1999)*

This is a difficult domain in which to be confident of operating appropriately. It is values-based, and there may be as many ways to demonstrate competence in regard to the display of:

> *a professional commitment to ethical practice on a daily basis. Revises judgments and changes behavior in light of new evidence. Values people for what they are, not how they look. (Clark 1999)*

—as there are people working in educational settings. However social and educational conventions suggest that including the potential for 'painful' learning experiences in formal education contexts is not recommended! Yet avoiding experiences because of the *possibility* of pain also denies an individual the *opportunity* for greater personal insight, change of a positive kind, and achievement of a different sense of success unrelated to grades and exam results. Sport has long known this, with its mantra of 'no pain, no gain' in achieving peak performance.

In XB I am acutely aware that specific difficulties do emerge during the interplay of (previously) unknown personal anxieties, challenging learning contexts and the need to allow sufficient time to pass for a lesson to be fully understood. Indeed it is my own experience of all these things, and especially the passing of time, that continues to strengthen my belief in the value of allowing temporarily painful episodes to emerge for examination and learning, during a process designed to *support* > *challenge* > *support* adults learning.

The phenomenon of internalised change is frequently observed in participants who early on declare their resistance to experiential learning goals. Challenged to substantiate the basis for their resistance they take up the opportunity to prove their viewpoint and slowly begin to comprehend the possibility of a different perspective. Supported by open discussion and honest analysis of concerns they shift to planning for application of workshop theory to their organisation's real needs and goals. This phenomenon was first observed during the conduct of manager development workshops using experiential learning, where extensive alterations were observed to be occurring in those who initially resisted most strongly (Leigh, Gorrie et al. 1992).

In this chapter I have drawn on a number of experiences to examine my beliefs and values underpinning my stance as a facilitator. I have come to realise that I had been learning to use a form of 'dispassionate engagement' for some time before I began to appreciate how it was shaping my behaviour. the episodes described in this chapter have all influenced my practice as it moved ever further away from the conventional teaching stance I had once had.

Remaining dispassionate as an integral 'way of being' in a facilitator role, allows space for my own learning to emerge, during and beyond the experience of any particular iteration of an open, infinite chaordic simulation. However it can also inhibit understanding of the kinds of resistance that open, infinite chaordic simulations might engender. Having been engaged for so long with simulations and games, and used to managing high levels of emotional engagement in shorter activities, I no longer fully appreciated that 'feelings' may be considered inappropriate in formal 'learning' contexts. Nor did I appreciate that contexts, which clearly and explicitly create highly emotional containers for 'learning', could be

regarded with suspicion and distrust. My journey to understanding this, is the subject of this chapter.

Meeting XB

My first encounter with XB was accidental, although hindsight suggests that much of my development as an adult educator had, in fact, been leading inevitably towards adoption of some form of strongly experiential teaching/learning process. I could not have known this when, late in 1994, on a cool November day, I was in Vermont—detouring[76] slightly—from my route to the International Consortium on Experiential Education (ICEL) conference scheduled for Washington DC. I was visiting friends on the staff at St Michael's College. We had met at the International Conference on Thinking in Townsville in 1993. I hoped to develop joint writing/research projects. While I remain in contact with one of those colleagues, the link that emerged was altogether different.

They knew of my interest in simulations and had arranged for me to visit a colleague's class. I arrived a few minutes late and walked into a classroom where Roger Putzel was already … no longer in charge! We had not previously met, and with no warning of what to expect I was uncertain how to behave. Once the ripple caused by my arrival passed, we two retreated to the rear of the room and the class continued for the remainder of the two hours, moving through what was clearly a familiar process.

We remained well away from the centre of attention, and while Roger was consulted frequently, he continued to avoid overt control of the learning process. Student-led class activities applied various theories to actual (observed) behaviour of individuals and the group, examining their relevance to workplace behaviour and linking theory to actions. Two students, responsible for introducing intercultural awareness concepts in a forthcoming class, interviewed me. Long after class finished they

[76] It is a matter of continuing amusement to staff at ST Michael's College that I am always 'on my way to, or from' some other distant part of the USA when I visit. The very improbability of the events of that first visit has – perhaps – something to do with my enjoyment of the nature of 'chaos theory', which I was discovering about this time.

continued their 'interrogation', clearly committed to providing their peers with the best possible understanding of concepts they were finding difficult to comprehend.

Their behaviour reflected everyone else's total engagement in the learning process. Roger's presence was a guiding force—but not a controlling one. His knowledge of the field was comprehensive, but not imposed—simply available for access, as needed. Groups, or individuals, decided what was needed. The air of self-disciplined energy is still memorable. On my office wall, back in Sydney, was a battered hand-drawn poster of a line from the Dao de Jing announcing that[77]:

> *The wise deals with things through non-interference, and teaches through no words.*

It expressed my goal as an academic and workplace practitioner. My attraction to experiential learning principles had convinced me of its possibility—but I had not been able to imagine or discover how to put it fully into action, being aware of a strong personal and encultured tendency to 'tell' others *my* truths, thereby inhibiting them learning their own.

Now at last I was seeing 'non-interference' in action, and catching a glimpse of 'teaching through no words', which in Roger's hands seemed to require:

- avoiding temptation to 'tell', 'show' and impose external enlightenment
- self-discipline—not interfering or imposing 'my (greater) knowledge' to resolve doubts or conflict
- self-awareness—sustaining silence to enable others to internalise comprehension of consequences of their own actions

[77] This is the text as I was given it. In one version of the Tao I found it as: 'Therefore the sage goes about doing nothing, teaching, no-talking' Feng, G.-f. and J. Enlgish (1997). Lao Tsu. Tao de ching. New York, Random House. and as 'Therefore Evolved Individuals Hold their position without effort, Practice their philosophy without words' Wing, R. L. (1986). The Tao of Power. New York, Doubleday.

- knowledge of the field—readily available upon request to support and sustain emergent understanding
- observational skills— alert to *both* the evolutionary nature of group dynamics *and* the moment-by-moment 'basic assumptions' (Grinberg, Sor et al. 1993) influencing individual and group behaviour
- supporting and informing participants' readiness to take action, through use of:
    - *guidance*—ensuring they become aware of relevant knowledge to apply to emerging action and understanding
    - *questioning*—avoiding 'one right answer' responses that could become the 'death of the question' [78]
- choosing to help participants acquire knowledge and personal growth, knowing that this choice may bring the pain of 'first time mistakes'[79]

I was not conscious of any of this at the time, being quite simply amazed to have spent two hours in an academic classroom where intellectual activity had been intense while the 'teacher' had had less to say than the most reticent of his students. After those last two students left, we walked to his office as he described the design of this process he called 'XB—for e**X**perience-**B**ased learning'. I was delighted to receive a copy of the manual Although, that afternoon, I could not think how I might

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[78] I encountered this phrase in 1997 on an internet list for psychologists and therapists using Wilfred Bion's theories. These extracts helped me understand how Bion was incorporated into XB
From: Chris Mawson (21/10/97)
To: bion97
Dear Karl ,
The first quotation,- "La réponse est le malheur de la question", the answer is the misfortune or disease of curiosity. (Bion in Sao Paulo, Clunie Press).
From: Randall Eiger (24/10/97)
To: bion97
With apologies to Robert Frost:
We dance around in a ring and suppose
But the question sits in the middle and knows
Suggest that the sharp distinction between questions and answers is a function of the way we use our minds. It is fine to be able to look at the Q. and look at the A. as distinct entities as an aid to thought. But if we fail to remember that they mutually arise we wind up with hysterical questions and dead answers. Randall Eiger

[79] This is a key phrase in the XB Manual and its practice.

include this radical and challenging learning process in my teaching program, I knew I was going to do my very best to find a way. In my diary I wrote:

> *The process [Roger] uses is fantastic. I want to beg, borrow, steal it. A student run company which is focused on problem-based experiential learning… and I want to stay involved with it.*[80]

At the ICEL conference a few days later, I presented a workshop on simulations as experiential learning strategies; got to know some of my colleagues better (observing the oddity of travelling that far to learn about the work of people whose offices were jsut worked down the corridor! And I began thinking about how to make XB part of my teaching activity.

On our return to Australia the Faculty faced the task of designing a single undergraduate degree to replace a number of related undergraduate courses. This became an acrimonious and painful task as we struggled to come to grips with mandatory changes occurring in tertiary education. From this distance I can best describe the environment as having a surface agreement that provided a cover under which everyone struggled to preserve what they liked from courses to which they were attached. I am reminded, all this time later, of a childhood Christmas toy of woven cane. It is a simple tube into which two people each inset a finger. As each struggles to pull it off the other person, the tube lengthens and tightens, trapping both fingers. Only by cooperating and relaxing can they remove the tube. We were similarly trapped in a web where we were pulling against each other with little chance of cooperation[81].

Kolb et al in '*Organisational Psychology—an experiential approach'* pointed out in the first organisational behaviour theory text I ever read:

> *there are many forces active in groups that disturb work … These underlying emotional issues produce a variety of self-oriented behaviors that interfere*

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[80] Extract from my travel journal for the period 4.11.96 to 16.11/96

[81] I do not exempt myself from this description, being concerned to define a role for myself in a changing context, while continuing to use experiential learning processes as I had espoused at ICEL.

> *with or are destructive to effective group functioning. They cannot be ignored or wished away, however.*
>
> *[such forces] must be recognized, their causes must be understood, and as the group develops, conditions must be created that permit these same emotional energies to be channelled in the direction of group effort. (Kolb, Rubin et al. 1979)*

We were almost entirely unable to heed this advice. As ordinary humans caught up in stressful circumstances—seemingly beyond our capacity to influence—we promoted our own preferences, criticised each others' efforts, and gradually became resigned to losing much of what we held dear. Responsibility for preparing *Subject Outlines* was given to relevant staff. I was given two—an elective subject, and a subject titled 'Examining the Organisational Context' (Faculty of Education 1995) and the goal recorded in my travel diary became possible. I wrote the latter subject to encompass XB's approach, and re-designed the simulations and games workshops as an elective subject.

1996 saw XB happen for the first in Australia when three classes were run simultaneously. Two part time staff and I each managed one class. I found to my surprise that I knew most participants in my class, having worked with them in preceding semesters. The degree of mutual trust built during those encounters proved to be a crucial factor in the success of my first XB class. Participants were aware (to some extent) of the uncertainties being wrought by the changes noted above, and were prepared to allow for them, trust my judgement about the learning process, and rely on their own capabilities as self-directed learners.

I know now that managing XB is a very complex task, and that I was overestimating both my capability and my knowledge on that first occasion! However, confident in my ignorance, I set out. I was immensely fortunate that the established level of mutual trust provided scope for experimentation, and meant participants forgave ineptness on my part as I managed the process for the first time.

One example of such mutual trust concerns a task I undertook during those classes. XB requires multiple copies of students' memos for peer assessment[82], and since I had not factored this into my introduction to the process, participants often needed access to copying. As nearby facilities were for staff use only, I was often absent for short periods during class time. I regarded this as no more than a necessary task that someone had to do, and thought little of it. From my perspective the 'learning' was to be 'done' by participants who might miss essential elements of the process if they were to use more remote student machines, and my temporary absences would have less impact.

No-one expressed concern at my absences, and reflective analysis suggests that it created a degree of freedom enabling (perhaps even forcing) participants to take charge of their learning in ways that might never have occurred if I had been present continuously. The XB manual—with its detailed guide for action and analysis—is a key resource, and students had their copies for reference during my absences.

As I shuttled between copying machine and class action, I began to understand what it really means to allow students to learn their own lessons through providing space for trial and error, free from potentially debilitating teacher observation. I did not force the pace or direction, accepting what emerged as valid responses worthy of examination, and tried to behave much as I had observed Roger Putzel doing.

The first two semesters helped establish XB's viability and also led to my first deliberately structured research work—on facilitation of the kind of learning process needed for managing open, infinite chaordic simulations[83]. This was prompted by the range of participant reactions encountered in the three classes that had been running, as well as very different experiences and responses of the three facilitators' published as '*Vigilant Observer*' (Leigh and Spindler 1998). All this led to extensive re-evaluation of my practice and, eventually, to the final shape of this thesis. Indeed much of what I thought I knew about facilitation, and about simulations, was challenged by these early experiences with XB. While I was determined to continue

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[82] In the current class much of this work is being done online, via the university's UTSOnline facility.
[83] Not that I had yet developed this label for XB.

using it, my practice was being tempered by my learning, and by an increasing consciousness of the need for more research.

Thinking about what I'm trying to do

"*You have to think, think, think about what you're trying to do to me*" (Franklin 2002) are the opening words to a song provided as an evaluative comment by one of the original XB participants. She wanted me to always remain aware of XB's likely impact on future participants, given its closeness to 'real life'. She was also acutely aware of the possible gap between my educational beliefs and values and those of others in regard to the validity of the kind of learning strategy typified by open, infinite chaordic simulations such as XB. Although enthusiastic about her own experience, she was concerned by its potential to unsettle students' 'taken for granted' assumptions about learning, and its potential to be confronting in its similarity to 'real life' with a resulting potential for adverse impacts on some participants.

Her choice of musical exhortation re-echoes in my mind as I prepare for each new XB. Her insight was prescient—she knew me well:

> *I already knew you and your enjoyment of the challenge of something different. You say "It will be OK while we are here in this safe environment." But I thought about those who didn't know you. How do they learn to trust you? Will this really be any different from work, where things can be hurtful in real time? I wanted you to be careful and to be thinking about that. (GS in conversation, 10/10/03)*

In an early XB memo she wrote:

> ***What happened***
> *I left XB…feeling—I wasn't really sure what I was feeling. I couldn't pin it down. I had to stop and think…when did I last recall feeling this way? …*

> ***What I learned***
>
> *That's it. I recently started a new job—yes all the feelings came rushing back—the uncertainty; discomfort, loss of control, lack of knowledge about the new job; confusion; fear; unsettled, not knowing who I could depend on.*
>
> *XB has taken me back to those exact feelings—XB is creating a real situation for me.*
>
> ***My goals***
>
> *Acknowledge and accept that I will feel this way for a while. Open up to my group about this…Start 'doing', take control, take a risk.*

Memo extract—1996

She has lived up to her goals, and continues to have an interest in XB as a metaphor for her own work experiences (private conversations 1997-2002).

My own enthusiasm for XB's ability to uncover hidden talent and encourage the potential for personal growth continues to develop. However because of her timely intervention I am constantly alert to the extent it can cause certain individuals to adopt 'defensive aggressive' or 'passive aggressive' behaviour while denying the need to consider the current nature of their own self perception—even in the midst of tertiary studies they are undertaking for their own development.

Chaordic concepts in XB

The chaos concept of 'sensitivity to initial conditions' indicates that the mutual trust and respect shared with my first XB class was a crucial factor in its initial success. Similarly understanding that patterns of behaviour are 'emergent' with potential directions and impacts that cannot be fully predicted, emphasises that simulations, and XB in particular, impact quite differently on participants, whilst retaining an underlying coherence. The concept of self-similarity at greater and lesser degrees of magnification, as illustrated in Mandelbrot's fractals applies equally well. And the 'strange attractor' factor of individual contributions shaping the action in unique ways is always latent until someone steps forward to take action to resolve their own concerns and inevitably affect the whole.

As I began to connect chaos concepts with my experiences as a facilitator, I was able to see, in new ways, the nature of the learning processes unfolding each semester. Organisational behaviour theories come alive for me and provide a consolation in the midst of stress and turmoil. For example the *stages* of group behaviour, as described in Chapter 5, are repeated each time a new group comes together - but never in exactly the same way. The inevitability of paradox as a factor in open, infinite chaordic simulations is suggested by the *patterned* nature of human behaviour, which *this time* appears to be unique. This causes me to relinquish any hope for repetition, while avoiding actions that may reduce the potential for 'storming' among participants. While assuring *this* group of participants that there is a 'way out' of their particular dilemmas I must be explicit in noting that I don't know what it is for them, although I will enthusiastically help them to find it!

"If they [the first XB class] *can make a success of the experience (as they undoubtedly did)—and do so before I was sufficiently skilled—then others can do likewise"* became a personal mantra, sustaining my use of XB as a valid learning/teaching strategy. And indeed in each XB some participants' perceptions and reactions have begun at—or near—the emotional state GS describes. Her way of being in the world represents a level of maturity that many others have replicated, while some are unable to do so.

Although all participants receive the same briefing, course materials and prompts for initiating action, some are able to take on the task of managing their own learning far more readily than others. I now appreciate that those experiencing the most difficulty have given me (however unintentionally) the greatest opportunities for learning. JRR Tolkein noted, in regard to the difference between times of stress and 'times of tranquillity', that:

> *Now it is a strange thing; but things that are good to have and days that are good to spend are soon told about, and not much to listen to: while things that are uncomfortable, palpitating, and even gruesome, may make a good tale, and take a deal of telling anyway. They stayed long in that good house, fourteen days at least… Yet there is little to tell about their stay.*

(p 197 Tolkien 1970)

Despite having some XB experiences bordering on the traumatic for me, I have a similar response to Tolkein. In times of comparatively quick development of cohesion in XB, there is little to tell about what is happening, the material for learning is sparse. The manual notes, in this regard, that:

> *Much effort and some conflict may precede high performance. At first, significant portions of the organization may not work well. Even apparently working well, the organization can fall apart very quickly. Ironically, XB does not always produce learning when it works smoothly. Instability and imperfection can also contribute to learning in XB. (Putzel 2001)*

While I have come to regard '*instability and imperfection'* as positive attributes of XB's power as a vehicle for learning, I am now acutely aware that not everyone shares this view! The very human need to protect one's 'self' (noted earlier) from the unknown and uncertain can become a dominant—albeit usually unstated—force. As long as they remain unexamined, prior experiences of orderly teacher-directed classrooms can cause some adults to remain extremely dependent learners. XB challenges this dependency.

I noted in Chapter 3 Foucault's intention of creating '*disruption of routine responses to the world*', which is also likely to be an inevitable result of participation in XB. While I knew this, I did not initially appreciate it—as the facilitator—in the way that GS had done as a participant. Since she first offered it, her choice of song has been a talisman for my learning, repeatedly focusing my attention on the problematic nature of simulations and other forms of experiential learning. Prior to that first 'production' of XB I had attended to the structural issues of setting it up, but I did not pay the attention that I now do to preparing participants for what lies ahead. In focusing more and more of my attention on thinking about what the activity may be going to 'do to' participants, I am not altering the process as such, but am preparing for the range of responses that I now expect to emerge in the ensuing weeks.

Thinking about the possible impact of XB on participants—as a facilitator operating as a PractitionerResearcher—means preparing oneself, as much as possible, to be the 'sage' of the Tao de Ching. Alongside addressing practical considerations, this involves establishing a calm centre within myself that will remain unemotional and positively supportive of participants, empathising with, but not being disturbed by, the emotional turmoil they may begin to experience.

This turmoil is the other side of the conditions I had so admired in regard to Roger's capacity to 'deal with things through non-interference, and teach through no words'. Learners who are used to a high degree of dependence on a teacher to direct their attention towards what is important and who are used to being told what to do, will be uncertain how to behave. At such a time, an open chaordic, infinite simulation can begin to take on the appearance of a nightmare of endless 'possibilities', 'directionless activity', chaotic duplication and emotional upheaval.

The beginning phase of each XB can be compared with the kind of *apparently* chaotic disarray that Dee Hock (Hock 1996) described as a factor in regard to the development of his understanding of chaord. The manual holds within its pages a highly structured tightly controlled description of every activity that is intended to occur. The class, in its diversity and unshaped potential, possesses an initial formlessness held together by a kind of passive anticipation that Tuckman (Tuckman 1990) describes as the beginning state of any newly formed group, and is also found in Bion's descriptions of the 'basic assumptions' characterising the 'state' of a group waiting for a leader to appear.

The inert potential for activity ranges from that which unsettles individual perceptions and beliefs (thereby generating anger and resistance) to that providing insight and potential for growth and transformation. XB regards both forms of outcome as productive and advantageous:

> *XB makes use of a paradox from which few other organizations benefit: fruitless meetings in XB present opportunities for learning (as long as you articulate what went wrong). Similarly, Bion based his theory on experiences in groups where the group facilitator begins the group by* ***not*** *leading it to*

> *accomplish its task. The "leader" does not lead. Chaos, of course, results. (Putzel 2001)*

While I am now far more confident of my ability to identify chaos-predicted 'emergent' patterns, I also know that each new class has its own characteristics, that none will be *exactly* the same as any other, all will share some features to some degree and that it is a potentially deadly error to make any assumptions at all about what 'might happen'.

Much as Beckett explored in 'Waiting for Godot', participants in each new XB begin with a belief that the impetus for action must/will come from 'outside'—and as this is a 'class' it must be the 'teacher' who will provide it. Essential attributes for an effective facilitator at this time include patience, a belief in the value of creating environments with a potential to be disorienting (and therefore difficult and even painful), and an ability to sustain a stance of 'non-interference'. Much like a member of an audience at a premiere production of 'Waiting for Godot', the facilitator must make her presence felt unobtrusively (how terrible for the actors if the theatre is empty, but how dreadful if they intrude), acknowledge that the action has begun, and contribute—by *inaction*—their portion of the tension that fuels the drive to 'make something happen'.

And just like an audience member, the facilitator must take extreme care, when shifting in their role ('seat') not to unnecessarily disturb the players. An audience is the essential ingredient that makes 'Waiting for Godot' so powerful as drama, and so also is the facilitator's presence as the anticipated (but largely inactive) provider of 'leadership' in XB. This does not imply that the facilitator remains totally inactive, but simply that they must exercise extreme care when shifting position. A facilitator needs to know how to maintain the appearance of a leadership 'vacuum' through their apparent failure to fulfil unspoken but implicit (and widely shared) assumptions

about how 'learning' is supposed to work[84], while continuing to 'lead' the process thorugh maintaining an even-handed expectation that work will get done.

I first began to fully understand this the day Harry[85] arrived in my office just prior to the third or fourth meeting if his XB. He wanted to know how to opt out of XB. I asked his reasoning, listened closely, and raised issues of responsibility for learning. *'Who is really responsible for your own learning?'* I asked. '*Me or you?*' '*What do we each mean by responsibility for learning?*' '*How can we really know that someone has learned?*' '*What did he want to learn?' 'Why did I think XB could help him?* Truthfully I did not know for certain how to handle such a situation, it had not happened before—so doing nothing precipitous seemed the safest option. Although not convinced by my observations about personal responsibility for learning Harry agreed to reconsider his request and meet with me at the same time next week.

In due course he arrived, with what he expected to be a devastating announcement. He planned to stage a 'revolution' in XB and take it 'somewhere else' that he felt more comfortable with. I congratulated him and asked if I could join the revolution! His startled expression was worth every moment of the week of waiting for his visit. Together we reviewed his reasoning and possible actions, which I can summarise as: *'there is too little being done, people are listless, lacking direction, going through the motions without attempting to understand the substance'*. We reviewed his plan of action, which was to interrupt these emerging behaviours with an announcement of the revolution, state his goals and garner input from everyone about how to proceed. These were his ideas, not mine. All I provided was a metaphor for his revolution, suggesting that perhaps he could introduce his intervention by saying that he had realised that the class needed to 'stop, revive, survive'[86].

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[84] There is no 'vacuum' in fact. A facilitator of open, infinite chaordic simulations always holds the 'final' power they just do not use it. What they do provide – or represent - is the hugely unexpected 'absence' of leadership, which makes its nature suddenly evident and important. Like a corona around the moon during a total eclipse of the sun, participants are eventually able to see the 'shape' of their assumptions about conventional leadership through considering the impact of its absence.

[85] 'Harry" is a pseudonym.

[86] A contemporary slogan, warning of the dangers of driving for too long without rest in Australia's vast distances.

We went upstairs to class and I observed him announce the 'revolution' and begin to lead it. As I write now, I can see that the relief that 'someone' was in charge carried him through his first shaky steps as XB's *'pro tem'* leader. At the time I felt so anxious for him that it was incredibly difficult not to interfere on his behalf. He did not become a dictator. He had read the manual in close detail and could tell almost everyone what tasks they should be doing to get the kind of results that they had all been waiting for 'someone else' to achieve. In the ensuing weeks his class completed many core tasks while also, inevitably, slipping occasionally back into 'dependency' and 'storming'—but never all the way back.

As noted in Chapter 4, Felicity took the same path, although I had by then absorbed the learning from my experience of working with Harry, and was more aware of the reasons for my actions as we went through the process of 'planning a revolution'. In contrast with Harry she did not arrive in my office to 'resign'; instead she was determined—however anxious—to announce her intention to conduct a 'revolution'. She also expected resistance and was taken aback by my enthusiastic reception. Her class was large, with more than forty adult students crammed into a room that was too small for comfort. The class was beginning to fall into the trap of 'swarming', as the four large 'Departments' focused on their tasks and ignored the 'big picture' of the class as a whole. The initial results of her decision to lead were documented thus:

> We didn't get a chance to liaise with the Observing Dept—or any other Dept for that matter! The whole XB process has been knocked off the rails!! … grabbed by the scruff of the neck and thrust into the light. Our obsessions and weaknesses have been waved before us [by Felicity] like a Marshall waving a warning flag to drivers during a Grand Prix.

Memo extract—1999

These are two of many who have taken action with no particular notion of benefiting from 'seizing power' beyond using it to make this a more positive experience for themselves, and, incidentally, all those who accept their challenge to *'do better than*

we are at present[87]*'*. They represent a large body of participants who have, in many different ways, taken up the challenge of XB coming to the conclusion that they do not need someone else (the facilitator) to tell them how to do it. The success of their actions continues to affirm my beliefs and values in regard to the appropriateness of this way of supporting adults learning.

In envisaging their actions as a 'revolution', Harry and Felicity accepted that they have the power to alter a group's state of dependency. They became leaders by choice and found what they wanted to learn, and have also taught me a lot about the facilitation of emergent learning—which might surprise them, as I probably appeared to them to already possess this knowledge.

They helped me to *really* become a supporter of courage and self-initiated action in learning. I was firmly aboard the emotional roller coaster of supporting others to take risks in group-based learning contexts, to experience the results of challenging themselves, and their peers, beyond anything they had 'known' or understood. Their willingness to trust[88], and take a risk, re-emphasised for me the importance of advice I had received years before about *'trusting the process'*—although I was becoming more inclined to express this as '*plan the process, and trust the participants.'*

Of course they thought I knew what would happen 'next' and trusted my advice as fair, valid and reasonable. I knew only that they were doing something 'right and effective'. I did not 'know in advance' whether it would 'work' in terms of some pre-ordained set of 'learning outcomes'. Thus the concepts of chaos, explored in Chapter 4, are most truly in operation when such actions are proposed. In supporting them, I have to say honestly that I did not know what precisely 'would' happen—only that it was a 'better thing' than any other option that had so far been applied.

Thus 'chaord' enters each XB and the action will be different because of it. And I have been able to refrain from taking precipitate action for long enough to enable the

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[87] An extract from one of Felicity's memos.

[88] The Understanding Department, Management Theory Group has as its first Task: Observe and describe in your next weekly memo specific behavior related to the question: "Do we trust each other?"(Putzel 2001)

learners recognise their own power and make their won decision and gain in strength by doing so.

Learning from adversity

Meanwhile others continue to experience confusion, apathy and frustration as they cast around for an elusive 'someone else' to take responsibility. In accord with Bion's observations about groups, the 'tasks' of the class continue to get done—there are regular weekly meetings, memos are written, 'graded' and returned, theories are explained and knowledge is acquired. Some participants encounter 'ah!ha!' moments that they write about with enthusiasm, others are amazed to find their good friends simply do not 'get it', and there are many conversations with individuals in the Groups and Departments concerning tasks, obligations, responsibilities and perspectives on what is happening. As one participants noted:

> XB is about experience—the experience of learning, this can sometimes be frightening, confusing, frustrating, exposing and even hurt a little. With XB you can however, choose to either sit back and just do the minimal amount necessary or you can make the decision to get involved. This is when you really start to understand who you are, how you operate in certain situations, how others are affected by your decisions and reactions and what values and belief you have within the context of an organisation.

Memo extract—1999

For those most unsettled by the experience it may be difficult to find a way forward. The in-built processes of class meetings, reflective memos, group discussions, reading and analysis—all intended to encourage learning—are inhibited by whatever private anxieties they are experiencing but are unable to name. Blindly resisting learning from the words of their peers, being provided via class activity and the text

of in memos such as those presented in this thesis, they frantically grope for some means of returning to dependence.

Alain de Botton suggests in regard to Proust's view of learning, that:

> *…we don't really learn anything properly until there is a problem, until we are in pain, until something fails to go as we had hoped:*
>
> > *Infirmity alone makes us take notice and learn, and enables us to analyse processes which we would otherwise know nothing about… A little insomnia is not without its value in making us appreciate sleep, in throwing a ray of light upon the darkness. (Proust quoted in Botton 1998 p 75)*

Through the experience of successes and disappointments in my own life and career I have come to understand the benefit of such a stance, and try to keep it in mind in times of adversity. I don't believe I am overly optimistic or pessimistic. Somewhere in my development as an academic I had adopted a personal mantra for my teaching—*I will not attempt to rescue students from the pain of their own learning experience*s[89]. To make such a stance valid requires accepting the necessity of learning from the pain of my own experiences, which of course I have had to do. It is unlikely that I could have arrived at such a position without first having had sufficient 'pain' of my own from which to learn.

Csikszentmihalyi maintains that:

> *To keep control over our own psychic energy, it becomes essential that we understand how power is being used. We cannot be free unless we learn to protect ourselves from other people's ambitions, and unless we refrain from exploiting others. (p 94 Csikszentmihalyi 1993)*

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[89] I can no longer remember when this first became a factor in my approach to being an adult educator. At least eight years ago I recall saying it to a colleague who was astonished by it. Being a very kindly man, with quite an authoritarian style, he was concerned that it might generate disorder and harm in teaching contexts. While never denying me the right to have such a stance, Hank helped me to understand the necessity of articulating and applying it cautiously.

As a category of learning experiences, open, infinite and chaordic simulations provide opportunities for participants to understand—**for themselves**—the vital importance of 'being able to protect' themselves from the notion that learning is something to be *done to* them. A paradox that then emerges is that it is only when a facilitator can refrain from taking on the *'doing to'* role that this potential can be fully realised in the context of the simulation.

And yet, as noted above, some adults do not wish to take up this option, apparently convinced that 'education' is a process of 'being done to'. This appears to have been the case with Fanon and Jitna and Darius[90], who each took extreme measures to avoid entering into a dialogue with their own potential as learners. Each of them, in different ways, has taught me a great deal about human nature, learning processes and myself. Despite my convictions about the benefits of some pain in learning, their lessons were not easy to absorb. At this distance I am able to say that while I would no longer wish to have avoided their teaching, it was still as painful and difficult as if I had not known about how such experiences can lead to some later 'good'. Paradoxically, the experience of working with them has made me more, rather than less, committed to the role of designer and facilitator of open, infinite chaordic simulations.

As each episode has unfolded it has served to remind me that:

> *It is easy to blame someone else or external forces for our problems. 'Someone else'… did this to us. An appreciation of systems thinking leads to the conclusion that there is no outside. You,* ***and the cause of your problems****, are elements in a single system. You will find your cure in your relationship with your 'enemy'.* (from notes taken during an address given by Peter Senge at the Society for Organisational Learning conference, Boston 2002)

Fanon

If only I had understood this at the time of Fanon's collision with XB! Or, perhaps more accurately, she came into my life to help me learn more about what I was both

learning and teaching. She was a member of an XB that had only twelve members[91], occurring in the same semester as Felicity's at a different time slot. The group only became my responsibility because I gave in to the entreaties of a colleague who pleaded to swap classes, because, as I discovered much later, he and members of this student cohort had met before and he did not wish to repeat the experience. He pleaded an unspecified clash of commitments making it impossible for him to teach at the allocated time, not mentioning any difficulties with the group. As this would alter certain undertakings I had given about my workload, I requested that he get approval for the change from the program manager. He agreed.

The class began like all others with an overview of the learning process, an introduction to the manual as guidebook, exploration of features of an 'ideal' organisation, and factors inhibiting their growth and survival. There was the usual stirring of interest and expression of concerns about how all the nominated tasks were to be achieved, but the session ended on a positive note. I could not attend class the following week, and arranged for them to continue alone, returning the following week to find they had spent much of that session debating how to ensure 'fair and honest' feedback on the memos. I might have had a more peaceful semester—and learned a lot less—if I had enquired more deeply into why this issue was of such intense interest!

Keeping as much as possible to my stance of carefully neutral dispassionate reflexivity, I helped individuals analyse their roles and identify priority tasks, contributed to discussions, and ensured that various procedural matters were addressed. There was much detailed discussion about giving and receiving fair and honest feedback. Progress seemed reasonable. Class members were placing their memos and weekly agendas on the 'online learning' facility being integrated into XB. Two weeks on, with procedures and standards for 'fair and honest' feedback agreed in full, the member of the 'Control Group' in the Doing Department began explaining how the feedback would be collected and reported.

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[90] Fanon, Jitna and Darius are all pseudonyms.
[91] The minimum number required to cover XB's list of Department and Group roles.

By now I knew that Fanon's concerns were driving the focus on 'fair and honest' feedback. Her stated reasons were general enough to be plausible but non-specific and I was unaware of the real depth of her concerns, so was unprepared when she abruptly burst into tears and rushed from the room, once it was clear that 'Control' was proceeding to implement the feedback process developed by the whole group.

For a moment I was unable to move—who to attend to first? The class in front of me, who also appeared stunned by her outburst, or Fanon who was somewhere outside clearly distressed? I asked the class to continue the task they had just embarked on, and went to find her. I have no clear recollection of all we said. I know I offered her the normal alternative assessment process and attempted to reassure her. She left. I returned to the class, which had agreed their next set of actions. I told them I had offered Fanon an alternative assessment, but the session ended lamely. I went home puzzled about what to do next, but not especially worried. I should have been.

For the ensuing class an agenda had been posted online and things appeared to be proceeding as normal. Fanon was not present when I suggested we begin; four other students then announced that they were not going to continue either and were leaving the class in sympathy with her. I was stunned. Apart from the agenda and some procedural activity on the website, I had not heard anything from them (or her) during the week, and as yet, had no inkling that she had submitted a three-page letter of complaint to the course coordinator, which these four knew about and had chosen to support, without raising any concerns with me.

Like any other academic institution the University of Technology, Sydney (UTS) has a well-developed set of procedures for managing complaints by students. It is one of the more painful aspects of all that followed that none of these procedures were followed in managing these students' complaints. Yet, paradoxically, the fact that they weren't became a lifeline. Their absence fuelled a sense of 'injustice' that stopped me from taking any precipitate action, providing time and scope for analysis and reflection—essential components in my management of this experience, and of my learning from it. I was able (with difficulty) to recognise that I had been given an opportunity to learn the power of thinking deeply (and 'fairly and honestly') about

the question posed as the title to a book I had recently purchased, namely *How Come Every Time I Get Stabbed In The Back My Fingerprints Are On The Knife?* (Harvey 1999).

None of this was evident to me that afternoon, nor was it obvious a few days later when I received a letter from the Program Director, advising that as a result of their complaints:

> *The subject Organisational learning-an experiential approach will be offered next year in the Voc Ed and HRD strand. However, it will not involve using the XB manual and approach* (Departmental correspondence 1999).

The *impregnable bastion of hindsight* offers wonderful perspectives on experiences and behaviours. However it is impossible to imagine the view from this safe but relatively useless fortress, while trudging through the events forming the foothills below the peak upon which it is to be built. As I read this letter I experienced an almost overwhelming sense of injustice[92] fuelled by archaic anxieties[93] (Heron 1989) arising from some my own past experiences. Thus, with the comforting certainty of hindsight, I now realise that, as I stood in the corridor that afternoon, I had finally reached the relative security of my own 'bastion' in my development as a facilitator and PractitionerResearcher. This perspective was telling me, vividly, that any emotionally fuelled response towards immediate action would be counterproductive. So, although hugely dismayed by what I read, I chose to suspend all responses until I could understand 'fairly' (whatever that turned out to mean) the nature of what had been happening to everyone involved. I still had half a semester of XB ahead. Felicity's class was working effectively, while Fanon's was reduced to seven participants by the departures.

The latter class became a series of tutorial discussions where those remaining provided me, on that first afternoon with a double gin and tonic in the students' bar,

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[92] I am still feeling troubled by the recollection of these experiences, as I write this, three years later; and my goal of being objective in order to use the experience in this thesis slips and slides around.

[93] Heron describes such anxieties as 'the personal hurt, particularly of childhood, that has been denied so that the individual can survive emotionally.' He offers three forms of such anxiety: repressed grief, repressed fear and repressed anger. (p 33-34)

and, during the remaining weeks, with intellectual and emotional support while we examined what organisational behaviour theories might offer as explanations of our collective experience. We treated the experience as a real life exemplar, and focused on a general discussion of theoretical frameworks as elaborated in the manual.

In taking this path the group restored my faith in elusive notions of 'justice' and laid down a pathway to help me become more fully aware of how important it is for facilitators of open, infinite chaordic simulations, to develop the capacity for 'dispassionate reflexivity'[94]. While *privately* acknowledging the personal impact of the turmoil, the facilitator must refrain from taking any action *publicly*. Caught in the midst of uncertain, imprecise, ambiguous, emotionally troubled contexts, that are likely to remain so for some time, the facilitator must not succumb to personal anxieties. And yet, even now as I compose this, I feel a surge of emotion wanting to snatch back the right to be 'heard'.

The power of emotions to control behaviour is being explored by Goleman and others (Goleman 1995; Lama and Goleman 2003) under the label of 'emotional intelligence' (or EQ) and is gradually becoming accepted as a valid contribution to the field of knowledge about human behaviour but I was not aware of their work at this time. What I did accords well with their precepts, as I adopted an attitude that has become more comfortable and familiar but was very much out of character and difficult for me at that time.

I decided to do three things. One was to continue with my work, and especially Felicity's class, as if nothing untoward was happening. The other two decisions involved: first seeking external support in gaining an understanding of what had happened, and second speaking to absolutely no one inside the Faculty, about any of this, until I was fully confident of my capacity to remain detached and unemotional. I wanted to understand why it had happened, what I needed to do to have XB reinstated, and how to learn from this experience so that I need not go through its painful lesson again.

Perhaps there is no such thing as coincidence! The title of Harvey's book (as noted above) had caught my eye on a visit to the www.amazon.com website, and I had ordered it only a few days before all this occurred. It arrived sometime during this period and I found in his preface mention of a colleague of his, Ted Rosen, whom I had come to know through the ISAGA conferences. I decided to ask him if he could be the *external* support I realised I needed. I emailed my request, setting out as objectively as I could the reasons for it. I did not ask Ted to be sympathetic or supportive as such, but simply to respond as a critical friend while I undertook my own enquiries into my practice and recorded its effects on myself, and others. He readily agreed, including two other colleagues in a 'watching brief' capacity.

Thus I opted for 'inaction and analysis' and held still in the difficult space of 'not understanding' until I could gain sufficient insight to be confident about what *I* wanted to happen next. I did not know what I might learn, but knew that it had to be important because of the size of the hurt I was experiencing. Nietzsche (Nietzsche 2003) declared that *'that which does not kill me makes me stronger'*. Initially I could only see two choices—'death' of purpose through denial of opportunity to continue my practice, or attempting to force the reinstatement of my 'academic freedom' to continue presenting XB—through a formal dispute resolution process. Neither offered much hope of making me stronger.

So instead of moving into either a submissive or adversarial stance I turned to an action learning process to determine if there was a *third* choice. It suggested that I could watch, listen and do nothing (as XB requires of the Observing Department) until I understood enough of what was happening, within me and in the others, to be able to choose wisely for a sustainable future *for myself* and *for XB* in this context. Choosing this third option I observed (while choosing not to respond to) representatives of the management system failing to use established/espoused principles to guide their practice. And I also observed myself developing an insight into my own practice. By seeking a third option in this difficult complex context, I

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[94] I am specifically limiting this to the facilitator's behaviour in the context of simulations, since other responses may well be more appropriate for participants in the simulation, and for everyone in the course of real life events.

was rejecting the notion of a simple 'dichotomy' of choices which is still a common default option in western traditions. In the time since then this preference for thinking in 'threes' or 'multiples' has become a habit and is now part of the PractitionerResearcher strategy in my teaching/learning contexts.

It had needed a very 'heavy' lesson to implant effectively the benefit of being able simultaneously to stand back from the action, and know how my own emotional 'state'[95] (Molden 1996) was influencing my thinking and behaviour. Until now I had been quite satisfied with my Activist approach to learning[96] and found it difficult to be 'passive' and 'non-assertive' for a sustained period. Nonetheless I continued, writing regularly to Ted Rosen, managing Felicity's XB class, completing some reading towards preparation for this thesis, maintaining a close watching brief on my emotions, and of course having a 'life', outside all these workplace difficulties.

The outcome was almost an anticlimax. Several weeks later, relying solely on established procedures I requested a review of the decision to discontinue XB. It was quickly completed. During the review meeting I was unexpectedly confronted by a very personal question that emerged from within my own mind: *'What would be the most difficult thing for me to do at this time?'* To which my own (by now inevitable) answer was *'face the issue directly and have the decision reversed by its maker.'* The reviewers endorsed my suggestion that I do so, and shortly after, during an awkward but fruitful conversation, I learned that my fingerprints were indeed on the knife!

The 'colleague' who had undertaken to seek official sanction for the change of classes had not done so. Thus the change to my timetable created the appearance that I was disregarding prior commitments. By not confirming for myself that the change was sanctioned I had put my own fingerprints on the knife. My failure to confirm for myself that the change was approved, had contributed to the decision, especially when seen alongside Fanon's emotional state when she presented her letter. As I was (apparently) prepared to ignore instructions, I could suffer the consequences! Presented with the actual reason for the change, the course coordinator lifted the

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[95] The term 'state' has a particular meaning in the context of the theoretical framework called Neurolinguistic Programming (NLP) which is the meaning here.

injunction against XB and things were (almost) as before—although I did not know the actual cause of Fanon's distress, nor that of her peers, and thought I never would.

Careful analysis of available written material, recall of the discussions about 'fair and honest' feedback, linked to intensive research of relevant literature led me to conclude that some unknown factor, from some other aspect of her life, had influenced Fanon's fear of public feedback. Her distress was well beyond anything that might be expected to arise from adverse feedback on an XB memo – if we had ever achieved that step! It had to be 'more than XB' but just what it might be I could not guess. And then – as chance is – almost two years later I met her husband at a social event.

When he raised the subject of her study at UTS, I asked him about the validity of my assumption that other factors had been involved in her reaction to XB. He readily confirmed that the fear of receiving (possibly adverse) public feedback stemmed from anxieties rooted in highly negative experiences in her early childhood. I was relieved to learn that her reaction, although triggered by XB's structural processes, was in fact based on something well outside it. However I did not so much feel that XB, and my behaviour as a facilitator had been validated as alerted again to the power of experiential learning.

Jitna

While a group, as a total entity, may be able to identify when it is in any one of the stages of group development examined in the preceding chapter, it is also possible for individuals to be 'out of step' with the whole. As Lewin had noted in his research on groups in the 1930's:

> *Today we know that [groups] do not need to assume a mystical Gestalt quality, but that any dynamical whole has properties of its own. The whole might be symmetric in spite of its parts being asymmetric, a whole might be unstable in spite of its parts being stable in themselves. (Smith 2001)*

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[96] As indicated in my score on the Honey and Mumford Learning Styles Questionnaire

During the same period that I was learning so much from Felicity and Fanon I was also encountering Jitna—a member of Felicity's class. Her story is shorter that either of theirs, yet has a place in this thesis as an illustration the power of Lewin's observations along with GS's reminder to 'think' about what XB may be doing to people.

Resisting the trend towards increasing responsibility and self-direction being displayed by the majority of members in Felicity's XB she chose covert disruption and negativity. She did not attempt to take the kind of public leadership role she was observing Felicity do, nor did she leave, as Fanon had done. Observing her negative behaviour, a teaching assistant suggested that I needed to intervene to address the potentially destructive nature of her actions, which had the potential to undermine Felicity's positive impact. A tense encounter in the corridor outside the classroom revealed her silent fury about what she perceived as the unwarranted seizure of control by some of her peers. She declared that she *'had not come to university for this learning stuff, but to be taught'* and was determined to *'suffer to the end, hating every class, and then submit a strong complaint once the semester is ended'* (notes based on recall of conversation).

Less surprised than I might have been a few weeks before, I invited her to declare her concerns so that we could both think about what they might mean for the class and for her own development as an adult educator. As gently as I could, I asked why she would choose to 'punish' herself for thirteen weeks, and then 'punish' me for 'forcing' her to do so? She did not have an answer and conceded that there might be something for her to think about in what I was saying. Still afraid of the repercussions from a further hostile complaint I nevertheless chose silence and waited—this time with much greater anxiety—for the following class.

Surfacing her angst in this way created scope for reconciliation, however late it was in the semester. She was present for all subsequent classes contributing with more energy than previously, making no reference to our conversation. Her Three Dimensional representation at the end of semester was a 'toolbox' containing a variety of items representing XB's various communication and analysis tools. She

showed that she could revise her perceptions, taking on a degree of self-direction and identifying factors adversely influencing her response to XB. My action, in raising the matter of her behaviour felt highly risky but proved to be effective and the entire interaction passed mostly unnoticed by her peers.

Darius

Darius was a member of a class the following year. We had had a less than satisfactory encounter in another class prior to meeting in XB. Forewarned, I wanted to remain impartial about his work, and in hindsight probably allowed him more leeway than I might have given others who adopted his stance, as typified by this comment from a memo mid-way thought the semester:

> *The formula for assessing effectiveness was developed by the one industrious member of the group who does not have a real life . . .*
>
> ***What I learned***
>
> *The same thing I learned every other week so far, don't' try to understand the big picture too early in the proceedings.*

The work of his XB was uneven, in that some worked well and achieved many of their assigned tasks, while others were content to do less than their best and wait for the semester to end. Darius aligned himself with the latter and did the minimum. Around week ten, during a presentation by one of his peers, he fell asleep. At the end of the class I asked him whether he thought this had been appropriate and also suggested his memos were not yet meeting the criteria set out in the manual. Did I take a 'cheap shot'? I was frustrated by his classroom manner and, as the academic assigned to assess his performance, had a responsibility to make an effort to raise the level of his contribution.

Like Fanon he did not try to get clarification from me, going instead to the course coordinator to ask for clarification of what I had meant in this conversation. This time I was immediately incorporated into the formal process, and began to realise that Fanon was not the only factor I had needed to understand from that earlier class. The coordinator told Darius to talk to me, and I received an email seeking more information. I replied and for a short time was in a bizarre communication triangle. I

wrote to Darius, he replied to the coordinator who forwarded the messages to me. We completed this cycle twice more, before the coordinator suggested that we wait until the end of semester, as there was time for Darius to complete unfinished assessment tasks to the required standard.

A fortnight later the three dimensional images were presented during the last class. There were many highly creative and original pieces of 'art' representing an amazing array of learning outcomes. Darius did not put much effort into his representation, using a manufactured toy to imply that the experience had been nothing more than a lot of hot air, a cleverly implied insult continuing his 'passively aggressive' stance consistent with his lack of effort to construct his remaining memos in accord with the required format. I notified the coordinator that Darius's work was still inadequate, although acutely aware of external factors making this a problematic decision. Another staff member re-marked the work, agreeing with my decision. Still it was not going to be a simple matter to fail him, so I proposed as an additional assessment task— an essay relating XB theories to his own work place. This was agreed and the assignment was despatched by email—with a detailed covering letter.

One more person enters the story at this point. She was a staff development manager for Darius's employer, to whom he appealed for support. She requested a copy of Darius's written work noting the 'short notice' given to complete the additional work, and the absence of earlier advice about his poor performance. I forwarded a copy of his work, which was annotated with weekly comments. Having read it all, she advised him to get the extra assignment underway, being in full agreement with my assessment. As someone else marked the final assignment I did not see what he eventually produced, but it was deemed adequate.

There is less emotion in the story of Darius. In the time after experiencing the issues raised by Fanon I had thought deeply about how I might respond to a similar episode. I felt more able to sustain a 'dispassionate reflexivity', and—aside from the initial shock of finding he had spoken to the coordinator about our exchange—I felt quite balanced. The key importance of his entry into, and exit from, the experience of XB is the coordinators' very different responses. In Darius's case the University's

processes were followed scrupulously. Both Darius and I knew that we were heard and treated fairly and honestly throughout.

Concluding comment

Experiences like these have influenced my belief that:

> *Becoming an active, conscious part of the evolutionary process is the best way to give meaning to our lives at the present point in time, and to enjoy each moment along the way…Individuals who develop to the fullest their uniqueness, yet at the same time identify with the larger processes at work in the cosmos, escape the loneliness of their individual destines. (p 290 Csikszentmihalyi 1993)*

I see myself as enacting this belief through facilitation of open, infinite chaordic simulations, offering participants a unique opportunity to uncover their own deepest learning needs and goals. Given the extent of our individual socialisation about 'education', it is seldom an easy option for any of us, yet it is for me, far more worthwhile than continuing to adopt a conventional teaching stance likely to lead me to impose my 'knowledge' regardless of its actual relevance and value to each person.

Emotions in education are relatively unexplored. My initial teacher training dealt with them though lessons in 'maintaining and keeping control in the classroom' and never mentioned that the underlying rationale was an 'unmentionable' fear of 'losing control'. Along with many other forms of experiential education—and in strong contrast with the apparent fear of feelings underlying my initial training—open, infinite chaordic simulations bring emotions to the fore for both facilitator and participants. That they can generate both hostility and total engagement in the same learning space is simultaneously their greatest power and major weakness – depending on an individual's capacity to engage with their own goals and frailties. As a result of the experiences of managing XB, I am painfully aware of many of my own flaws and shortcomings, and also know that those same

experiences have created opportunities for engaging adults in their own learning in ways that nothing else approaches.

Chapter 7

The PractitionerResearcher

The Announcement

Nasrudin stood up in the marketplace and to address the throng.

> '*O people! Do you want knowledge without difficulties, truth without falsehood, attainment without effort, progress without sacrifice?'*
>
> Very soon a large crowd gathered, everyone shouting: '*Yes, yes!'*
>
> *'Excellent!'* said the Mulla.
>
> *'I only wanted to know.*
>
> *You may rely upon me to tell you all about it if ever I discover any such thing.'*

(p 37 Shah 1993)

Finding a framework, not imposing one

Effective use of simulations and games for learning purposes requires a debriefing framework of some kind. The goal is to bring participants to full awareness of the knowledge available to them through their lived experience of the activity. There are, perhaps, as many ways of debriefing as there are effective facilitators. For myself I have leaned towards the use of a trio of questions, which I always ask in the following order:

1. What happened?
2. How do you feel?

3. What real life parallels can be discerned?

The theories collectively called chaos or complexity indicate that close observation of what is around us brings *emergent* awareness of patterns that are there for the seeing, once we cease trying to force the world to conform to pre-conceived assumptions or beliefs about what 'should' be there. Thus the usefulness of these questions for framing this final chapter emerged through the course of my research, which has simultaneously been about aspects of the field of simulation and games and the development of my understanding of a PractitionerResearcher mode of operation.

In what follows I respond briefly to the first two questions, as an introduction to the task of this chapter, which is to revisit the notion of the PractitionerResearcher, explore its core characteristics and examine the perspective it provides on notions of practice, research and 'working knowledge'.

1. What happened?

I began to prepare for this thesis in a conventional manner. I expected to complete a study program leading to development of a 'research question'; along the way I would choose a methodology and the particular way in which I would apply it to an examination of the question; then I would produce a dissertation recording the process and results.

Life had other ideas, and the struggle to complete this dissertation has traversed a passage of time in which many factors, outside the scope of its production, have impeded and re-directed my efforts, sometimes quite unexpectedly. The research question altered quite dramatically, as did the methodology. I wrote and published two books that are now being used as far away as Novosibirsk in Russia. I have presented workshops at fifteen international conferences and had associated papers published, I have submitted two research articles for publication and had both accepted. I was a key note speaker at conferences on project management, computer assisted education and, of course, simulations and games.

Together these efforts have altered much of what I once thought I 'knew' about the field of simulations and games. As a result my present position on the value of an historical perspective on simulations and games, and notions of classification and chaos as tools for understanding their use and structure—with special reference to XB—became the focus of my research and is now presented in the relevant chapters. Woven through them is my emerging understanding of the PractitionerResearcher as a way of being in the world and contributing to changing notions of my self as an educator and facilitator of learning.

I experienced sufficient distress, through endeavouring to be the kind of educator I thought I wanted to be, that I withdrew from many elements of what once appeared to be a good career plan—but did not cease my endeavours. Interestingly I now feel that I have attained much of what I had aimed for—only to find it is not what I imagined it to be like.

2. How do I feel?

To write about feelings in a doctoral dissertation still seems strange. I conceived of a dissertation as an objective analysis of facts and 'data'—however much I was writing initial drafts in a manner that contradicted this belief. Putting feelings into the thesis evolved slowly, through such things as the discussion about how my 'knowing' was not being 'expressed' in a manner to fit the needs of a thesis dissertation, and the discovery of my own limiting thoughts about what constituted 'research'. Understanding that Heisenberg's uncertainty principle—a response to research findings about the physical world—could also be applied to the non-physical world of 'learning', contributed to emergence of the PractitionerResearcher as a way of blending both my 'knowing' and my 'doing' into a 'whole' of a person engaging simultaneously with research and practice. I have found the process to be both exciting and daunting. Despair was a frequent visitor; and stubbornness its equal and opposite companion.

During the emergence of this dissertation, I felt that I understood much more than I could express in words. I experienced great difficulty in learning to express such 'felt knowing' in a 'word-based form of knowing' and found consolation in

Wittgenstein's observation that words are connected with the primitive, the natural, and while they are expressions of 'felt' sensations and are used in place of sensation itself. (Heaton 2000)

Such 'felt knowing' is especially evident when I work with participants in a simulation. At these times I 'know' much that I cannot convey through the use of words alone. A participant, in a recent XB, described her experience of one enactment of my 'knowing' in this way:

> Due to our lack of experiential experience, we looked for guidance in our leader. Actually I think we were dependent (XB manual pp 155 & 249) upon our Senior Manager in the initial phase. However through her crafty Listening Skills she was able to listen to our issues and yet allow us to make the decisions needed for XB.

Memo extract—2003

My exhilaration at this description came not only from the words themselves, but also from the fact that a week prior to writing these words, DJ had advised me that she could not continue her study and accepted that she would fail. We talked about her situation and the difficulties impinging on her study program. I offered options, and she agreed it might be possible to survive the last few weeks. I asked for 750 words as an alternative assessment task, and this extract is from the 2,500 word document she found she 'could not stop writing'. It provided an opportunity for her to discover for herself that:

> *ideas which have arisen without pain lack an important source of motivation. . . . mental activity seems divided into two categories: there are what might be called painless thoughts, sparked by no particular discomfort inspired by nothing other than a disinterested wish to find out how sleep works… and painful thoughts, arising out of a distressing inability to sleep. (p 74 Botton 1998)*

I now regard dilemmas such as DJ experienced, as an essential—if not inevitable—element in the kind of profound learning that produces permanent

change in abilities and understanding, and, for this reason, frequently distribute 'The Announcement' (with which this chapter opens) to participants in my programs. The work of educational researchers like Mezirow (Mezirow 1990), similarly 'privilege' learning gained 'disorienting dilemmas'.

At one time I would have liked the creation of this thesis to be a simple sequential process, resulting in a clear and precise research outcome without too much personal difficulty—although, of course, including an inevitable number of problems to be solved along the way. Instead I have felt alternately despondent when the words have refused to emerge with clarity on the page, and exhilarated as I became able to explain a concept to someone else. The temptation to give up has been a strong (and not so) silent companion. The journey has nonetheless been worthwhile, as I have learnt much and unearthed new ideas that now demand to be explored and worked with.

3. What 'real life' parallels can be discerned?

This is the only 'real life' I have, and of course has no *absolute* parallels in terms of providing broadly applicable propositions about the PractitionerResearcher as a facilitator of open, infinite chaordic simulations. The 'parallels' are therefore 'converging probabilities' rather than 'simple absolutes'. That is, my process of developing an understanding of the PractitionerResearcher mode of operation is 'probably' like other emergent perspectives on human behaviour while not being 'absolutely' parallel with any of them[97]. While Horton and Freire (Horton and Freire 1990) concluded that *'we make the road by walking'* I would suggest we must each eventually make our own road to our own destination—however long we walk side by side as we create a newly emergent roads.

As I undertook the task of creating this dissertation I found I was writing myself into it through developing the PractitionerResearcher as a way of thinking about the kinds of working knowledge of which Billett says:

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97 Each human life is its own reality; and experiences in my own life have caused me to be sceptical of 'statistical probabilities' offered as reasons for taking 'absolute actions'.

> *Learning and working are interdependent. Work practices provide and structure activities and guidance in ways that influence the learning of the knowledge required for performance at work. These experiences are not informal or unstructured, as is often contended; instead they are structured by the requirements of work practice rather than the practice of educational institutions. (p 39 Billett 2001)*

There is an interesting irony in the fact that much of my current working knowledge has been gained through the maturing of a particular form of work practice *within* an educational institution. And indeed the location of my practice has proved to be a crucial element in the development of the PractitionerResearcher. While I worked in the business and government sectors I pursued both practice and research as conjoined elements in my work, while seldom analysing the impact of such activity. Nor did I immediately undertake such analysis when I first entered a tertiary educational environment. However sufficient time in such a context has inevitably led to the position where I must critically analyse my practice in order to gain its on-going acceptance as a valid mode of learning!

Four personal factors

At least four factors combined to create the altered awareness producing my current understanding of myself as simultaneously practitioner and researcher. These four factors are i) first, the passage of *time*, which then ii) was accompanied by an array of changing demands from the *environment*, while I continued to follow the prompts of iii) *curiosity* which had influenced previous efforts to improve my practice and finally iv) the experience of *resistance* to that practice.

1. Time

First the passage of time has been an essential element in the development of the PractitionerResearcher concept. Like the experience of a character called Anathema, in the novel '*Good Omens*', there was an obvious reason why I could not 'see' the nature of my experience. She is unable to realise that there was a '*very obvious reason why she couldn't see Adam's aura.*

> *It was for the same reason that people in Trafalgar Square can't see England. (p 146 Pratchett, 1991)*

And just like her and the people standing in Trafalgar Square at any one time, I was 'standing in' the PractitionerResearcher mode and entirely unable to 'see' it as something separate and available to analysis. Nor could I perceive how it was shaping my actions as either or both practitioner and researcher. Only by disturbing my perspective through moving away from the 'excitement' of engagement with practice, towards the 'detached' neutrality of research could I began to discern the possibility of a third option that is neither one alone but combines both. This could not happen quickly requiring alteration to successful habits gained during years of work and the embedded knowledge accompanying with these habits.

2. Environment

If my working environment had continued stable and unthreatening, little of the learning recorded here could have happened. However the changes entering my life were major and on-going, and would not allow retention of my own, nor the Faculty's collective, understanding of our roles and tasks. The changes were going to make us re-think everything, and I could not escape. My introduction to XB, during the initial stages of these environmental changes, was certainly a defining moment in the process of change for me.

3. Curiosity

Curiosity has been a constant part of my life. I have an extensive personal library drawn from such fields as history, psychology, business management, sociology, education, and of course, simulations and games. I enthusiastically embraced the notion of lifelong learning with enthusiasm after my first encounter with it at the Adult Education conference in 1973, and while I have not been a high achieving 'student' in formal conventional settings, I have succeeded enough to continue, even seeming to have used it as a kind of crutch during times of crisis. For much of my work life my curiosity was driven more by a desire to do things better, than by an interest in understanding why. They are of course interlinked but I would usually stop searching once I understood what needed to be done to achieve specific

improvements. Looked at from this distance such action was short-changing my ability to integrate knowledge and experience, but while I remained unaware, I could not see how curiosity was both shaping and inhibiting my development.

4. Resistance

Finally resistance has brought opportunities to redefine and rethink how I am in the world. Proust's observation that *'there are two methods by which a person can acquire wisdom, painlessly via a teacher*[98] *or painfully via life'* (p 78 Botton 1998) is one equivalence between the singularity of my experiences and the multiple perspectives of others 'real lives'. I have described some of the difficulties that have shaped my life and understanding, particularly those encountered in engaging with simulations and games as learning tools. While I would not now ask to be protected from painful learning episodes that may bring me understanding, I am also aware that I do – at the time - strenuously wish to be saved from hurt.

Time, environmental change, continuing curiosity and emerging understanding of the causes of resistance in myself, and others, have combined to produce the realisation that such experiences supply both unexpected strength and resilience in times of subsequent adversity. Thus a 'probable' parallel between my experiences, as recorded here, and those of other educators and facilitators of simulations is the manner in which such factors combine to produce new awareness and consequent changes in understanding and behaviour. Each of us follows our own 'road' and gradually becomes more aware of how it is both like and unlike that of each of those who accompany us. I had tried to be a Researcher and felt I was failing miserably, all the while continuing to succeed as a Practitioner—unable to reconcile the gap that appeared to exist between each role, believing I was unable to be both at once. The struggle to achieve some kind of balance among the apparently competing realities of 'practice' and 'research' coalesced to produce the PractitionerResearcher as descriptive of a valid mode of operation. Its particular characteristics would be quite distinct from either a Practitioner mode or a Researcher mode, while containing within it the core features of both.

The following section of this chapter briefly analyses my own experience of becoming a PractitionerResearcher, and then returns to the items listed in Table 1 in Chapter One to explore each characteristic in more detail.

Being a PractitionerResearcher

I find it the most difficult thing in the world to be a theorist (p 217 Neill 1975)

A S Neill's *'Dominie Books'* (Neill 1975)[99] are a record of an inspiring growth of commitment to behaving differently as an educator of children. While intensely theoretical in their intent, they are highly practical and specific in their tone and content. The reader is invited to infer Neill's theoretical framework as his stories of interactions with his 'bairns' and reports of conversations with those in authority, provide the reader with the opportunity to develop personal theoretical perspectives free from the imposed dictates of an 'expert'.

The beauty of this approach to 'teaching' about educational theory is that the reader is invited to (mentally) design personal responses to ideas and to (practically) figure out how to put them into action. Practitioners, encountering Neil's work and finding themselves in sympathy with it, will notice the practicalities of his approach and may initially miss the way in which their interactions with his ideas are creating valid and relevant personal theoretical frameworks for application to their own settings. They will move to shape their practice in accord with the espoused principles, not appreciating the depth of theoretical analysis embedded in Neill's stories of his daily routines and conversations. Researchers, encountering Neil's work, will be less likely to consider their own response to his ideas and instead seek out the theory—seeing the conceptual frameworks, not needing to notice the pragmatic manner in which the theory is enacted from day to day.

I observed this phenomenon in action during a recent conversation with a research-oriented peer when I referred to my enthusiasm for Neil's work and was advised

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[98] While I occupy the 'teacher' role in an XB classroom, it is the combined force of the design process and each individual's life experiences that create the opportunity for 'painfully via life' learning.
[99] 'Dominie' books were a teacher's log books.

that its principles 'would not be very acceptable in the current university environment in Australia because of the formal assessment requirements and related quality assurance procedures under which we now work'. In his opinion Neil's stance, which he summarised as 'advocating absolute freedom of choice for students,' would not be countenanced in the present environment. I, on the other hand—having become comfortable and familiar with the PractitionerResearcher mode—could see quite clearly that Neil's stance offers immense hope for finding, and theorising, ways of devising and sustaining learning environments that meet imposed external standards while providing enormous internal potential for 'freedom to learn'.[100]

Since the framework for 'theorising' such a stance is embedded in practice, it is not readily observable to me while enacting it. It therefore remains concealed until and unless some force disturbs the comfortable 'doing-ness' of the theory, requiring an explanation of it. That is, a PractitionerResearcher—valuing a focus on application—develops strategies to enact the intent behind particular beliefs and principles, and pays less attention to identifying how these might be 'theorised'; if indeed the relevance and possible importance of such a step is even considered.

In my own case, the valuing of learner-centred approaches has its roots in an event during my teacher-training program (Sydney Teacher's College, Diploma in Education, 1967). From a year of education focused on helping me learn 'how to be a teacher' I recall, as the only episode of enduring importance, a highly impersonal lecture from a visiting scholar on the importance of 'teaching the student not the subject'. While his 'espoused theory' did not perhaps match his 'theory in action' (Argyris 1991) the message was clear and I took it to heart.

In the years since, as this thesis has documented, practice rather than theory has retained primacy in my work. I have focused on what the 'student brings' (Rogers 1969), drawing on all (and any) theory that seems relevant to providing a

[100] This conversation occurred shortly after a presentation I made concerning the progress of the development of this thesis. As usual I found myself rather more tongue-tied than I would like at the time, but far more able to reflect and develop a PractitionerResearcher response soon after. That is,

supportive and challenging learning environment in my varied work contexts. Not experiencing the pressing 'need' to theorise—as Neill did in developing and promoting his stance on education—I developed my practitioner skills and neglected the related task of 'theorising my practice'.

The following observation from Boud, Cohen et al, expresses a core outcome from that developmental process:

> *The way in which we interpret experience is intimately connected with how we view ourselves… A belief in our ability to act and learn is a prerequisite for learning, without this we are passive recipients in the constructs of others. (p 7 Boud, Cohen et al. 1997)*

Interpretation of experiences is an on-going process, and as such has the power to repeatedly alter our view of ourselves, as well as our belief in our ability to act and learn. Such alterations can themselves take us in many different directions over time. My own experiences have tested my belief in the value of simulations as learning contexts, and tempted me to become a passive recipient of others' constructs. However while providing theoretical support for my actions, the words of Boud et al foreground the existence of several problems about the effective use, and wider acceptance of, simulations and games for learning.

Simulations create environments in which all participants must act and then review their own experiences and beliefs. The debriefing process generates opportunities for consideration of the extent to which they believe in their own abilities as 'actors' and as learners. The entirety of an experience can as easily lead individuals 'back' into a form of dependence on others' constructs, as take them 'forward'[101] into greater independence of thought and action.

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this brief conversation was a moment when I fully understood how theory and practice often talk past each other, while sharing the intent to engage in dialogue.

[101] I must make explicit here that my use of 'back' and 'forward' indicates a belief in the greater value of one perspective over the other. I do value independence of thought and action, and appreciate the effort required to achieve and maintain it. Paradoxically, this leads me to accept more readily that, for some adults, dependence appears as the only viable option in their lives. While I will offer them an alternative view I try not to regard their preference for passivity as 'bad'!

A problem raised by assertions about the importance of avoiding 'passive acceptance of others' constructs' concerns the question of how to do this within teaching/learning contexts where content is already imposed by external authorities. Such authorities expect the 'teacher' will use conventional teaching processes that have acquired legitimacy through usage, regardless of their relevance to desired outcomes or contexts. In other words, while Boud et al assert that individuals must be able to act and learn, few formally constituted tertiary contexts offer the kind of freedom this implies. A S Neill was eventually dismissed from his post as a 'dominie' in Scotland when his efforts to introduce such freedom went 'too far' for parents and school authorities. While he chose to create a learning environment supporting the kind freedom once again being espoused by Boud et al, this is not a viable option for all others who might do so.

A second problem concerns the nature of the actions required to achieve such freedom with, and for, participants comfortably familiar with being 'passive' learners and unable, or unwilling, to take on 'freedom of choice' in regard to their own learning. In his work, cited earlier, Kurt Lewin notes:

> *'The change from autocracy to democracy [in particular social groups he was researching] seemed to take somewhat more time than from democracy to autocracy. Autocracy is imposed upon the individual. Democracy he has to learn.'(Smith 2001)*

Processes that 'enable' learners to take charge of their own learning, to become active rather than passive learners, are neither simple nor guaranteed of success. The task of learning to be an active learner may be the most difficult part of engagement in a simulation—especially open, infinite chaordic ones. Probabilities of success are linked to several factors, including a facilitator's capacity to suspend the desire to intervene in support of those having difficulty with a task, the individual's willingness to reinterpret events and experiences, and the level of shared understanding that a group achieves during the course of a particular activity.

A third, especially difficult, problem concerns the notion of whether it is ever possible to avoid imposing a teacher/facilitator's own '*constructs*' on others. In

choosing to use simulations I have become acutely aware of imposing a specific framework on learners, and thus, to a greater or lesser extent, also confining (albeit in a different way) their choices about engagement with the learning process. Participation in a simulation denies participants the option of passive reception of theoretical constructs.

I believe passionately in the merit of active participation which creates individual and joint experiences that can be subjected to analysis. But as soon as I introduce others into an activity I am imposing my beliefs on them. Of course, when I use a lecture or 'teaching' strategies to present my representation of others' theories, I am similarly imposing a particular set of beliefs about 'how to teach'. Both approaches create a 'container' (Senge, Kleiner et al. 1997) within which 'learning' may occur. The key difference between lecturing to passive recipients and creating active engagement for them, through experiential learning, is that a 'lecture' is a known and acceptable process while 'experiential learning' is less familiar and does yet not have similar automatic acceptance. The very 'normality' of a lecture conceals its flaws as a learning process, and highlights the problematic nature of alternatives. A shift away from comfortable 'normality' to uncertainty and the unknown can produce many forms of resistance—ranging from a desire to return to 'passivity', to an acute sense of fear about the degree of freedom being offered.

While working in contexts that did not find experiential learning processes 'troublesome' it was unlikely that I would need to learn how to explain the way simulations are constructed and operate. I would not have needed, or wanted, to delve into their history or come to understand the possibilities and problems of attempting to classify them. And most of all I would not have learned that disrupting the taken-for-granted beliefs of others can cause me to pay very close attention to my own!

However being a practitioner in a context which privileges the normality of lecturing as a 'learning' mode could have led me to abandon my use of experiential learning processes, but instead it caused me to adopt a continuous improvement strategy in regard to my practice. Rather than attempting to unlearn my preference for teaching via open, infinite chaordic simulations, I have worked improving my

use of it, as well as learning to understand why my choice may disrupt aspects of the 'good order' of the wider context. My goals have varied over time, but a constant is the desire to learn how to communicate my perspective to others.

Distinctive features of the PractitionerResearcher

This thesis began with the goal of developing new understanding about a particular mode of learning process identified as open, infinite chaordic simulations. In addressing this research problem I came to identify the PractitionerResearcher as a compelling model for a way of engaging with the duality of 'practice' and 'research' around non-traditional modes of 'teaching'. Thus the research took up the additional task of setting out my understanding of key features of the PractitionerResearcher as it differs from either a Practitioner or a Researcher. Thus the question addressed in this final part of my writing is: How is the PractitionerResearcher stance neither one nor the other alone, but through incorporating aspects of each becomes quite separate and distinct from either?

The following section therefore returns to Table 1 which nominates five features with which to distinguish among the Practitioner, the Researcher and the PractitionerResearcher. These five features are:

1. Curiosity
2. Questions
3. Verifiability/'purity' of methodology
4. Time frames
5. Primary orientation

While others may emerge over time, these have proved to be a robust set of features when tested against the perceptions of various colleagues. Each has distinctive characteristics, as examined further below, however it is their interconnectivity as a set of features about a particular approach to being an educator and a facilitator of learning that makes them particularly helpful for gaining insight into how the PractitionerResearcher engages 'working knowledge' for developing particular

capabilities and skills. This stance is considered here with specific reference to my own development as a facilitator of simulations, and especially open, infinite chaordic ones. It is likely to have wider applicability, but that will be the task of future research.

1. Curiosity

In referring to the study of botany Jean-Jacques Rousseau described it as *'a study of pure curiosity, one that has no real utility except what a thinking, sensitive human being can draw from observing nature and the marvels of the universe'* (p 106 Rousseau 1979). In considering the driving forces that might influence the Practitioner, the Researcher and the PractitionerResearcher respectively, I suggested that a healthy dose of curiosity helps drive all three modes. However the 'pure curiosity' of Rousseau's interest in botany has a value that is perhaps closest to that of the Researcher in this present framework. The Practitioner will seek out things that have a 'utility' for specific tasks and purposes, and give little attention to objective 'observing'. A PractitionerResearcher will combines elements of both perspectives, being most likely to be:

> Driven simultaneously by work needs and the 'need to know'.
> *Sees how each informs the other, values their interconnectedness as essential to supporting a unified approach to action.*

A PractitionerResearcher shares the Practitioner's priority for practical solutions to current needs, and use available tools as guides for shaping and inform decisions and actions. In each case their curiosity will lead them to intentional use of tools for practical purposes. At some point a Practitioner finds what is needed and stops searching, while a PractitionerResearcher may suspend the search to meet immediate goals, but returns to the problem repeatedly as curiosity uncovers issues that extend well beyond the factors initially sparking a particular search.

PractitionerResearchers may not regard their curiosity as research oriented, and may not even recognise that actions undertaken to assuage their curiosity are in fact 'research'. A Researcher, however, is more likely to have begun a search quite deliberately, and be aware of the framework within which the search is conducted.

Practical applications of the results of their work may be of secondary interest. Their 'need to know' is enough of itself to shape the boundaries of their search. A PractitionerResearcher's curiosity is equally concerned with ways to improve practice, and also to examine practice to identify potential for future improvements.

I experience the PractitionerResearcher's curiosity action while conducting an action learning workshop for managers. The participants were engaged in a group activity and we two facilitators withdrew to a corner of the workspace to review progress. Only when we were interrupted did we realise that, driven by sheer curiosity about what was occurring as the learning process unfolded, to begin developing a theoretical model of our practice as we were experiencing it. After that program we developed the model further as shown in Figure 27.

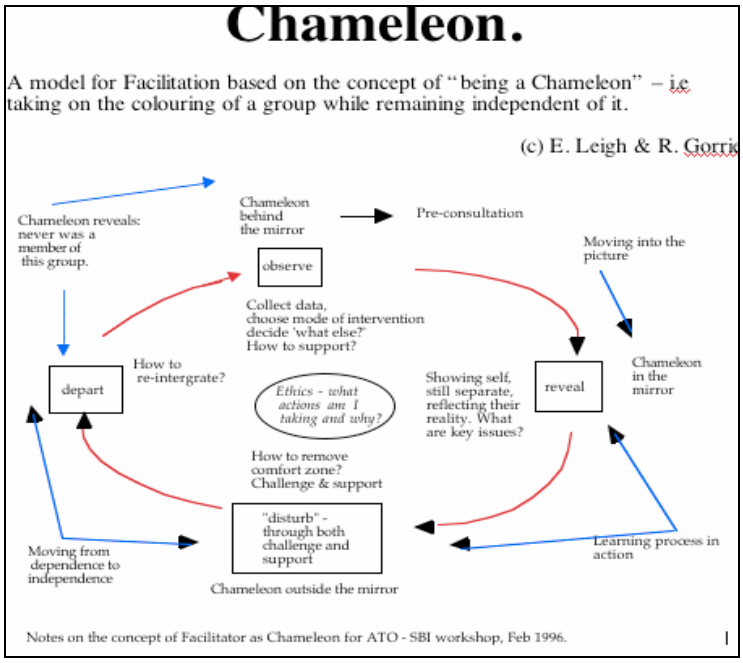

Figure 27 A PractitionerResearcher model of facilitation practice

Such an experience is seldom possible while either the Practitioner or the Researcher mode is the whole focus of attention. A PractitionerResearcher's curiosity can prompt movement between the position of 'practitioner' and 'researcher' in search of a holistic understanding of the forces at work in their activities. We eventually published aspects of this experience (Leigh, Gorrie et al. 1992) but did not pursue it

as a Researcher might have done, returning to a Practitioner stance and moving on to other more 'practical' considerations.

In this case the relationship between practice and research beginning in Practitioner mode was driven by curiosity to research theories to explain what was both being observed and experienced. Application *to* practice was the factor shaping the scope of our PractitionerResearcher-oriented search for theoretical explanations and solutions.

It is also, of course, possible for Researchers to traverse the terrain from the objective formality of research to a more subjective engagement with practice. In doing so, their curiosity may be most influenced by the goal of establishing practical applications *of* their research.

2. Questions

With regard to the nature of the questions being asked by each of the three stances, I suggested that a PractitionerResearcher is concerned:

> *Concerned with knowing how to apply new knowledge, but also interested in, and aware of, capacity to generate it from within practice.*

Research is about asking questions. But so is practice when all is said and done, and a PractitionerResearcher perspective enables on-going awareness of the interconnectivity between questions and the application of resulting answers. A Practitioner's perspective is confined to questions related to gathering information about 'how to' act. Unlikely to regard their work as a site for the creation of 'new knowledge', they will not concern themselves with much more than being assured that the information addresses the needs they have 'right now'. In my own case I know that as an adult educator and industry trainer, I sought out models for designing training, and stopped looking once I had something that seemed relevant. In the beginning I did not question whether the model actually fitted my particular context. But then my curiosity moved my interest beyond simpler 'how to' questions into a realm much closer to a research perspective. I began asking 'Why

these?' about models and concepts, and 'Where did the research data come from?' and 'What is the validity of specific uses?'

An early example occurred when I attended a workshop for 'certification' as a presenter of a 'leadership' assessment instrument for use in manager development programs. With no previous experience of such instruments I was keen to attend. The instrument involves others—who are familiar with your work—providing their answers to a set of questions for comparison with your perception of yourself as a leader. As I had just joined the organization, no one was able to do this for me. I explained this to the workshop presenter and, driven (I now understand) by a Practitioner's need for 'data' to analyse, he suggested that other participants observe me during the first thirty minutes and complete the forms for me. My scepticism at such a suggestion was extreme, and I refused.

Questions emerging from this experience continue to guide my use of all such instruments. They concern the validity of claims about the accuracy of insights into personal behaviour based on inadequate data, and extend to an abiding reservation about their use. However I also began to explore why such instruments are so widely used, why they are regarded as being of value in adult learning contexts, and what constitutes a responsible and informed approach to their use. Such PractitionerResearcher questions go well beyond a Practitioner's stance but are not as analytical or objective as a Researcher's perspective.

A Researcher perspective produced the instrument. The relevant research questions had been directed towards creating new knowledge about leadership, with (initially) less concern for how it might be used in some possible future context. Researchers will be (sometimes supremely) unconcerned about whether their theories have practical applications. In the case of this instrument the research began in a university setting before moving into a commercial setting, which altered the way the data and its implications were considered. My encounter was with the commercial version of the research. It was interesting to discover, in the course of

developing this text, that the original developers have parted company and now present quite different versions of the instrument.[102].

3. Verifiability/purity of methodology

I wrote at the beginning that the PractitionerResearcher

> Shares pragmatic stance of practitioners in regard to usability of knowledge, while being alert to the benefits of research as means of justifying and supporting practice (especially when 'unconventional').
> *Values 'good work'. Interested in how theory explains why practice works.*

The importance of research as a means of supporting the pragmatic truth of good practice is less evident to practitioners. A PractitionerResearcher is not driven solely by usability – a charge often (unfairly) levelled at 'Practitioners' by 'Researchers' who have not grasped the deeply analytical processes underlying the 'merely' pragmatic decision-processes of practitioners. Nor is the PractitionerResearcher beguiled by the 'purity' of a research process for its own sake. Instead the focus is on developing the ability to draw on research (and to conduct it when necessary) for enlightenment and information relevant to both needs of the moment and the longer term concerns for continuing improvement.

It 'it works' then by definition it 'is good' as far as a Practitioner is concerned. There is seldom time for careful rehearsal, let alone the highly crafted analysis of alternative options as in the mode of the Researcher.

The problem of being able to 'verify' in a reliably repeatable manner that certain actions taken on *'this occasion'* could indeed produce (or avoid) certain outcomes on future occasions seemed insurmountable in regard to the chaordic nature of XB. '*It all depends'*—became my catch cry. The observation that '*one cannot step into the same river twice'* obviates the repetition of behaviours that produced previous outcomes.

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[102] The instrument was the 'Situational Leadership' questionnaire, which now has two separate sources, available from http://www.blanchardtraining.com/areas/situationalII.cfm - and http://www.situational.com/
It was originally based on research undertaken at Ohio State University on personality and leadership.

Then a Researcher's perspective on the usefulness of verifiability came into focus. Being able to demonstrate in some useful manner that learning outcomes were indeed similar over time took on greater importance as I learned more about the uses of simulations and games for learning.

The PractitionerResearcher seeks ways to establish the veracity of particular actions and undertakings without being confined by requirements of 'verifiability', and will accept the benefits of being able to demonstrate, that some practices are of greater worth than others. For example, my encounters with chaos theory have provided a means of reconciling the apparent diametric opposites of practice and research in regard to the issues of verifiability and 'purity' of methodology.

4. Time Frames

In discussing the focus of this research the issue of time frames for each perspective was a subtle but constant factor. Each of the three perspectives has a different concern for the time it takes to achieve desired results. As Dmitry Nikolaevich Uznadze (1886-1950), a Georgian psychologist and philosopher, lamented:

> *The main tragedy of pedagogy is the gulf between the remote goals of an educator and the need to solve immediate and current problems of a student.*
>
> (Unofficial translation provided by Dmitri Kavtaradze, a Georgian academic at the Moscow State University 2001)

I see the same 'tragedy' affecting relations between Practitioner and Researcher. Each has a different perspective on time and regards their own as the only one possible for their goals and context. The Practitioner has immediate and current problems, while the Researcher is pursuing more 'remote' goals. The Practitioner has a need for 'here and now' solutions to specific problems, while the Researcher values the search for long term solutions to generalisable problems. Developing an awareness of the possibility of achieving a balance between the two perspectives is the path chosen by a PractitionerResearcher who:

> *Accept the need to meet immediate goals, but able—and interested—to hold in mind the benefit of researching practice for mid-term improvements and longer term understanding and change.*

It is the ability to be aware of the immediate and urgent needs of the 'next teaching/learning' task, while also holding in mind benefits accruing from awareness and understanding of research directions and results that distinguish a proficient PractitionerResearcher.

For example my interest in classifying simulations began with a personal need to help novice practitioners beginning to use simulations and games. It developed, through the process of undertaking this research, into a tool with wider implications for the field. It has also recently coalesced into a longer term, even 'remote' task, combining both perspectives in the terms of reference for an ISAGA sub-committee I am chairing, which has the task of developing an acceptable means of 'certifying' the quality of activities submitted to ISAGA.

5. Primary orientation

The tension between the perspectives of the Practitioner and the Researcher is nowhere more evident that in the matter of orientation towards what each regards as their 'work'. The Practitioner values the completion of work tasks, and sees these in terms of finishing them on time and with good results. The Researcher values the search for 'good questions' seeking insight into practice as a process worthy of 'research' to establish how it can be 'improved'. Further than this the Researcher will often regard their work as leading to the creation of new knowledge, which is not usually considered an outcome of the work of the Practitioner.

While practising and researching may be regarded as opposite ends of a continuum, and therefore notionally equal, in my academic environment at least, the 'research' end of this spectrum is privileged over that of 'practice'. This privileging creates and maintains an 'either/or' perspective that is typical of much of western thought at least since the time of Descartes. For a PractitionerResearcher there is no necessary division between practice and research and such a privileging will be at best a distracting demand to 'make choices', and at worst a destructive energy reducing capability to do either practice or research well.

For a PractitionerResearcher the focus begins with a question such as 'What works?' (itself a research question) and then moves via trial, error and observation to the less

immediately practical question of 'Why is it so?' Attention may oscillate between the two, but will always remain mindful that both questions influence longer term practice—if not the immediate moment of action that lies ahead. Thus a PractitionerResearcher will be found attending:

> *First practice then research, but also interplay of the two. More questioning than a practitioner, but more pragmatic than a 'pure' researcher.*

Becoming an aware PractitionerResearcher required a good deal of effort in learning to let go of some my own cherished beliefs. It has caused me to focus attention on the inner world of my thinking about my work, in a manner unlike research methodologies based on objective analysis of 'the other as subject' of the research.

Jack Whitehead summarised his educational goals in the title of an article, namely—*Creating a Living Educational Theory for Questions of the Kind, 'How do I improve my practice?'* (Whitehead 1989), and uses action learning as a means of achieving a similar understanding of the integration of theory and practice. He encourages his student teachers to develop

> *reports [that are…an individual response to a particular problem of practice. Each captures the flavour of what it is like to be involved in trying to improve practice. (p 7 McNiff quoted in Darlington 1993)*

The development of the PractitionerResearcher stance is a very personal response to the particular problem of my practice arising from my use of open, infinite chaordic simulations. I oscillated between the more familiar Practitioner and Researcher stances, being more comfortable in one than the other, but ultimately aware that neither really described the 'truth' of my own experience. As with Whitehead's students I intended to provide a detailed and objective report of factors affecting my efforts to improve my practice. I found that I was simultaneously reporting, as a researcher, on the development of arguments concerning the importance of history, classification and chaos to the field while living out, as a practitioner, emotional responses to events and experiences that were unsettling previously unexamined beliefs about the validity of the field. Eventually neither could be addressed without reference to the other, and so the PractitionerResearcher was born as a stance that

could encompass both perspectives without attempting to assert a primacy for any one of the three.

In 'becoming' a PractitionerResearcher I have journeyed through many levels of understanding to reach agreement with Collins' observation that:

> *Efforts to identify clear-cut, comprehensive criteria for adult education practitioners vary from very detailed lists of 'the necessary competencies'… to compilations of general commonsense advice about everyday practice. … However, the notion that the qualities of an adult educator can be reduced to a determined number of measurable competencies encompassing various levels of behaviour, knowledge and attitudes is troublesome. It emerges directly from an ethos of technical rationality and incorporates all the artificiality and shortcomings of a technicist orientation. (p 47 Collins 1991)*

I began my career at the end of the 1960's armed with a 'liberal' arts degree and a 'technicist' Diploma in Education intended to prepare me for a 'controlling' role in secondary education as a teacher. In the beginning I had no difficulty. It was a familiar role, after all my years as a school and university student. Much more than I could include in this thesis has now influenced and shaped how I 'am' in the world. And much more than they can ever usefully describe will similarly influence any adult educator who takes Collins' proposition to heart.

While that 'technicist' beginning still influences my thinking, I now understand, and am able to use, a knowledge of how such things as individual emotional flexibility, context, expectations, differing values, and capabilities influence the moment–to-moment exchanges of experiential learning.

This thesis has explored aspects of the nature of open, infinite chaordic simulations and the manner in which practice-focused facilitators operate as PractitionerResearchers. As Dmitri—a Russian colleague—reminded me, in a review of some of my early writing for this thesis:

> *Dana Meadows in her article "Unavoidable a priori" clearly showed that each researcher has/had an a priori model of the problem one will study. It is*

> *very important for understanding the nature of the Gaming and Simulation design, and role of facilitator. It shows the roots of our mistakes and initial misunderstanding*. (Communication from Dmitri Kavtaradze 2000)

While initially skeptical of such an observation, believing that I did not yet possess such an 'a priori' model but had to develop one, in completing this research I have learned that I did have a perception of the problem I wanted to explore and an equally clear, if tacit, understanding of a way of describing it.

Now that I have reached this point, I can see that my practice and the theory underlying it were far better defined than I had given them (or myself) credit for. I began with a challenge to develop a contribution to the field of simulations and games, with special attention to providing an explanation of open, infinite chaordic simulations. I was also concerned to understand myself in the role of facilitator in such contexts, and to provide a satisfactory explanation of some of these things to others whose challenges had led me to understand that what I do is 'problematic'.

Indeed it was this problematising (by others) that moved the original nature of my enquiry into the form it has taken. I am comfortable with the apparent chaos and disorder that a well-designed open, infinite chaordic simulation creates. My inclination for action provided many opportunities to acquire an experiential basis for understanding how such learning contexts work. I thought I had little interest in abstract ideas and certainly not enough to acquire (without prompting) an interest in developing theoretical perspectives on the processes and results of my work. However I have come to realise that sustaining its current form required theorising of it and of myself and of my practice.

Groundhog Day—facilitating learning without revealing 'the past'

As noted earlier the central character in the movie 'Groundhog Day' reviews his behaviour as he finds himself condemned to (apparently) endless repetitions of interactions with other characters for whom this is the first time this day has arrived. Waking to each 'new' day aware that it will be the 'same old day' he had during the previous 24 hours, he learned to adapt his behaviour and take advantage of what was (in other respects) a horrifying trap of endless duplications.

In the same way facilitators enters each new open, chaordic, infinite, simulation—each new XB—at the beginning, along with the participants, while knowing they have *'been here before'*. The difference, that is crucial to success as a facilitator, lies in knowing that <u>that</u> *'here'* is, in reality, a past experience and <u>this</u> *'here'* is new—so that while some examples of familiar patterns may re-emerge, others will not. Some participants will begin to display behaviours familiar from previous experiences and customary in workplace contexts—taking charge, avoiding, demanding, denying, expecting (without articulating their expectations), stating positions, and criticising others' performances without reference to their own. All this is 'normal', in an experience-based learning context like XB. An informed facilitator knows this and begins to accept, even welcome, the chaordic conditions heralding the beginning of possibilities for transformative change.

As Mangham (1986) realised in the course of conducting his detailed study of management behaviour, the Italian form of comedy called *comedia del arte* is a perceptive representation of human behaviour. In the *comedia del arte*, the characters of Pierrot and Pirouette for example, forever chase the delights of unrequited love. Similarly we each develop practices in response to beliefs and values, seldom checking their accuracy or relevance, and enact them without evident awareness of the behavioural patterns we are repeating in apparently quite different contexts. Thus, adults entering a new 'learning context' will adopt the role of 'student' as they imagine it to be, basing their enactment on prior experiences of 'being in' the role, relying on the safety of the 'basic assumption' of dependency (Grinberg, Sor et al. 1993).

As long as nothing challenges these behaviour patterns we remain comfortable, and as long as there is no requirement to question their *assumptions* about the role of 'student', they will not do so. Entry into an open, chaordic infinite simulation will unsettle all this, and a mood of increasing uncertainty, decreasing self-confidence and growing discomfort may begin to pervade the environment. It is at this moment that the facilitator will most need to be able to recall and comprehend the Mulla's 'announcement' to his audience. He offers a salutary reminder of the extreme

unlikelihood of being able to achieve *'knowledge without difficulties, truth without falsehood, attainment without effort, progress without sacrifice'.*

Concluding comment

"It's a fine, fine line between pleasure and pain"

(Divynls 2003)

This line from a contemporary song is a highly apt expression of the place I now find myself. The line between my research and my practice has narrowed inexorably as the thesis has developed. It is now a very fine line indeed not even represented any more by that ubiquitous "-" between 'practitioner' and 'researcher'—while remaining 'present' in the decision to capitalise the R in researcher in PractitionerResearcher.

For me the 'pleasure' of practice is still tempered by the 'pain' of the research process as its demands for detail and certitude inhibit my flights of intuition and viscerally-driven responses to moment-to-moment pressures from learners' needs in open, infinite chaordic simulations. However, the gulf between my 'educator' goals and the 'student problems' is much less than before. And the tension created by awareness of the need t o bridge this gulf has become a source of energy for seeking new solutions. As this has happened the difficulties involved become integral parts of the learning process, and essential ingredients for challenging paradigms encircling current understanding.

Afterword

If I was beginning this research armed with all that I now know, I might begin by considering whether open, infinite chaordic simulations can ever really address the possibility of providing learning contexts that avoid trapping students in the teacher's construct. Heron has very specific views on this (Heron 1999), and yet perhaps his concept of his context was not the same as the one I am engaged with. So this too would be a matter for exploration. This could be accompanied by consideration of the circumstances under which it becomes possible to distinguish between a 'student/learner' role and the stance of 'passive recipient in the constructs of others'. This all lies ahead.

In the course of his work on learning styles and processes involved in lifelong learning, Edward Cell looked closely at the contribution of experience and noted the difficulty with which human beings engage consciously with its potential for learning. This is the third quote that has adorned my office wall for years—alongside the Dao and Ruth's observation about my 'rigidity/flexibility'. Cell wrote:

> *We fail to learn from experience because we mould our experience to fit our beliefs instead of letting our experience be what it is and testing our beliefs against it. (p 126 Cell 1984)*

In so far as I can, while meeting the requirements of a formal research project, I have tried to let my experiences be what they are, and drawn on them to illuminate what and how I have learned throughout the process of creating new knowledge about simulations and games for learning and the PractitionerResearcher as a way of signalling the indivisibility of practice and research.

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