

## Chapter 3: The Research Methodology

### 3.0 - A Summary Description

The research methodology of this study is non-standard and unconventional. It is a personal case study (Yin, 2003; Travers, 2002); a rigorously-analysed lived account (West, 2004; McNiff, 2007). It is, thus, relativist (Cohen, Manion and Morrison, 2005), eclectic and sits within the developing auto/biographical tradition (West and Carlson, 2007, Reid, 2008). The epistemological theory that I developed over the time of the study inclined me to believe that insights leading to new knowledge and therefore understanding, would best be derived from an auto/biographical reflexive process which examined analytically a number of illustrative moments from my career narrative. So, I used the following methods:

- I created a rationale for selecting such illustrative moments and discounted other critical incidents<sup>45</sup> that might have served the project equally well;
- I recorded theoretically-imbued narrative accounts of the five illustrative moments (appendices 2-6);
- I reviewed each of the illustrative moments against the emerging theoretical framework;
- I developed the theoretical framework concept by concept drawing analytically on the narratives for further insight and understanding;
- I tagged by colour-coding the appearance of each of the Ns in the narratives to see if indeed each was present;
- and then attempted to synthesise the learning achieved by reflecting again on IM3 which has turned out to be the pivotal IM of the study.

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<sup>45</sup> Later in this chapter I articulate the reasons why I did not adopt the term critical incidents preferring something more tentative and less symbolically boundaried by time.

## **Reflexivity and dialogics**

In keeping with the auto/biographical method, at each stage of the process, I attempted to illuminate the narratives from relevant literature. This is a dialogical process similar to the 'hermeneutic circle' I adopted from undergraduate theological studies in the 1980s (e.g. Gutierrez, 1971), where human experience is excavated for meaning through scriptural study and the scriptures themselves are evaluated in the light of new experiences facing the human condition - this was seen earlier in Taylor's (1984) post-modern approach to theology also. In the same way that there is a canon of scriptures in Christian theology, most notable of which are the Gospels, there is a canon of quasi-sacred literature in education. Examples of this might be Bloom's *Taxonomy* (1954), Plowden's report (1967) or Vygotsky's (1978) *Mind in Society*. So, too, there are texts in the canon of educational technology literature whose names are uttered in hushed, appropriately reverential terms: *Computers and the Human Spirit* (Turkle, 1990) *Mindstorms* (Papert, 1993), *Computers in Education* (Collis, 1996), *E-Moderating* (Salmon, 2000). I have chosen not, therefore, to attenuate my use of the term, "scriptures", when referring to readings around the illustrative moments that form the research objects for this study. Such an approach derives from my ontological stance and selfhood and is validated by Wilde's (2012) reflections on his moment of profound learning, cited above.

## **Research Question**

To explore the hypothesis, that there is a framework which contributes to profound professional learning experiences mediated by technology, I developed the following question:

- What can reflexive analysis of a personal narrative indicate about the nature of professional learning mediated by technology?

What I am trying to discover is a theoretical framework for professional learning that might be useful for others in analogous situations. The thesis has become, therefore, as indicated tentatively above, an example of what Whitehead and McNiff (2006) term, 'living theory'. The nature of that theory and the way it is structured are explored fully in chapter 4.

There are some subsidiary questions which are also explored through the research:

- What might be the characteristics of such a framework?
- Is the term 'auto/pedagogy' an appropriate shorthand descriptor for such a framework, should its existence be discernible?
- What are the necessary conditions for auto/pedagogy to occur?

The auto/biographic method I intend to employ derives from the fact that this hypothesis has emerged in the story of my career so far. Thus, an auto/biographic approach to the development of a living theory.

For a long time I resisted the impetus to set this piece of work in the continuum of methodologies coded 'action research'. This was because I rather pompously believed myself to be a philosopher rather than a practitioner. On reading Whitehead and McNiff (2006) more carefully and with greater criticality, I now subscribe to their insight which is that practitioners can, under certain conditions (see below), generate new theory by their participation in structured research of their own professional context:

“These theories are living in the sense that they are our theories of practice generated from within living practices, our present best thinking that incorporates yesterday into today, and which holds tomorrow already within itself.” (Whitehead and McNiff, 2006 p. 2)

The illustrative moments that form the research objects for this study are selected from 'yesterday' because they contribute to my understanding of 'today' and suggest ways in which

'tomorrow' might be designed for others in analogous situations. They are undoubtedly drawn from my professional practice and reflection on them is incontrovertibly a form of action research. In studying the theory of 'living theory', I was particularly struck by the words of Daisy Walsh, cited by Whitehead and McNiff,

"By putting the work of my dissertation in the public domain, I hope that other team leaders in a similar vocational education context can relate in part to some of my experiences." (Walsh, 2004 in Whitehead and McNiff, 2006 p. 20)

This is redolent of West's (2004) observation that has been an ever-present influence on my thinking and reflections on this project:

"...validity primarily lies in the meaningfulness of the analysis to other sense-making practitioners wrestling with similar questions, as well as the extent to which the interpretations illuminate the struggles of learners elsewhere, in analogous situations" (West, 2004 p.8).

My intention, then, is to report on the rigorous and structured reflections on the IMs in order that I might generate a living theory from my own auto/biography. This might then be useful for other practitioners and their own professional learning:

"In processes of data gathering, we say, the aim is to gather data primarily in terms of the study of oneself, in order to show progress in the growth of one's own learning and how that learning can influence future learning and action." (Whitehead and McNiff, 2006 p. 5)

My living theory is that each of the four factors or phenomena of this framework are necessary for a profound professional learning experience and that this is discernible in my auto/biography. To demonstrate this, I developed a four-stage process for the analysis of selected moments in that story, hence the adoption of the IMs. Stage 1 is the theoretically-imbued inscription of the IMs as they emerged from my memory. Stage 2 is an analytical reflection on each IM for what it reveals about what I learned at the time and the meaning I have derived from it since. Metaphorically this is a vertical investigation which goes deeper and into more of the detail of the narrative. Stage 3 of the process is a reflexive analysis on the emerging framework which

illustrates the contribution that each IM made to it. Metaphorically, this is an horizontal analysis of the IMs, which seeks to show patterns and replications from one to the other as a way of articulating the component strands of that framework. For ease of reading the framework is offered here, in tabular form, for the first time:

**Table 1: The Emerging Framework**

<b>Factor</b>	<b>Description</b>	<b>Code</b>
1.	A self notes that it has a self-referential reason for study,	N for Need
2.	The self utilises its prior knowledge, skills or understanding to access appropriate digital learning resources	N for kNowledge
3.	The self actively participates technologically in the social co-construction of meaning through focused and relevant communities of practical or professional enquiry (after Wenger, 1998; 2001 – see Smith, 2003)	N for Network
4.	The self critically evaluates these episodes and is able to apply new synthetic understandings in relevant practical or professional contexts.	N for New

How I arrived at this framework is the sub-text to all the work that follows. It is published here as a way of presenting the hypothesis, in the belief that the rest of the thesis is the story of how the framework evolved and how it is also the framework around which I structured the philosophical reflections.

Stage 4 of the research process is a synthetic analysis which draws together all the prior learning as a way of evincing the living theory that is generated by the undertaking of this rigorous enquiry.

### **The Layout of Chapter 3**

The chapter is thus in three parts: first, a structured analysis of how I arrived at the proposed methodology; second, a discussion of how this methodology is in keeping with the emerging

themes of the study and how it relates to the underlying epistemology and third, a narrative description of what I did.

### 3.1: The evolution of the proposed methodology

The interdisciplinarity or multi-disciplinarity (see Bridges, 2006) of this study has been helpful in providing a broad basis in relevant literature as was seen in chapter 2. It has also been a source of enduring debate since the work does not fit neatly into a specific discourse (see e.g. Foucault, 2007), research tradition (see e.g. Swann and Pratt, 2003) or paradigm (see e.g. Guba, 1990). As was seen in section 2.3, complexity theory seems to indicate that in the 21st Century this is inevitable since ideas, concepts, theories and methodologies overlap and interlock in a range of academic endeavours. Support for this notion is evident in the following quotation:

"In retrospect we know that the road that led from nineteenth century transportation was quite different. The invention of the automobile and the airplane did not come from a detailed study of how their predecessors such as horse drawn carriages worked or did not. Yet, this is the model for contemporary educational research. The standard paradigms for education research take the existing classroom or extra-curricular culture as the primary object of study. There are many studies concerning the poor notions of Math or Science students acquire from today's schooling. There is even a very prevalent "humanistic" argument that "good" pedagogy should take these poor ways of thinking as its starting point. It is easy to sympathise with a humane intent. Nevertheless I think that the strategy implies a commitment to preserving traditional systems." (Papert, 1993 p. 44)

When I make the connection from this quotation back to Waldrop's description of 'bursts of evolutionary creativity and massive extinction events' (Waldrop, 1993 p. 119), I find myself in agreement with Papert that education research needs to find creative ways of discovering emerging meaning and truth. This I believe to be particularly true when it comes to technologised learning since it will not necessarily help our understanding of the potential affordances of ICT to examine the pedagogical implications of, say, chalk. Further support for this new way of understanding study, research and theory can be seen here:

"One of the most essential features of the new history is probably this displacement of the discontinuous: its transference from the obstacle to the work itself; its integration into the discourse of the historian, where it no longer plays the role of an external condition that must be reduced, but that of a working concept; and therefore the inversion of signs by which it is no longer the negative of the historical reading (its underside, its failure, the limit of its power), but the positive element that determines its object and validates its analysis" (Foucault, 2007 p.10)

From these words I take validation for my approach since I see that it is in the very antithesis of planning, quantification and verifiability that meaning is derived from my reflections on those experiences which have catalysed my own professional learning. Twenty years ago, I did not set out to develop a longitudinal study of the effect of ICT on myself. I didn't document it, create an *oeuvre*, set down a text (after Foucault, 2007 pp 5-8) or move to a laboratory, but then, I didn't realise until later that I was involved in a thought experiment. This, then, is a necessarily retrospective research project where I am the 'work itself', edging towards a 'working concept' (Foucault, 2007 *ibid*).

Foucault's critique of contemporary epistemology is redolent of Papert's (see above) more pragmatic approach since he is quite clear that simply building on past knowledge, assimilated by conventional means will no longer suffice, since there are many discourses, many histories, many structures and many solutions, all of which may contribute meaning. He cites Bachelard as a key source here:

"There are the epistemological acts and thresholds described by Bachelard: They suspend the continuous accumulation of knowledge, interrupt its slow development, and force it to enter a new time, cut it off from its empirical origin and its original motivations, cleanse it of its imaginary complicities; they direct historical analysis away from the search for silent beginnings, and the never-ending tracing-back to the original precursors, towards the search for a new type of rationality and its various effects." (Foucault, 2007 p. 4)

I find this particularly interesting on reaching this point in my studies for two reasons: First, I did not learn how to use technology in ways consistent with my prior learning, so I had no understanding of the 'empirical origins' of, say, computer science and had not been involved in the 'continuous accumulation of knowledge'. Rather, I found myself in 1989 on the other side of a threshold that I wasn't even aware I had crossed. I joined in a discourse that was already underway. By way of comparison, I have since experienced several occasions when the learning



technology community broadcast their discovery of Vygotsky as if they were contributing something new to the debates on pedagogy. That was a threshold that, in England, I would argue that the education community crossed with Lady Plowden (1967).

Second, I now find myself training professionals in uses of ICT that are dependent on a whole raft of 'knowledge' and processes that remain, as far as the 'client' is concerned completely unknown, irrelevant and unworthy of their time and attention. Put simply, we don't know how Tesco's workflow system operates, all we care about is that when the barcode is scanned by the reader, our purchase is recorded and will generate a bill of charges accordingly:

"Don't tell me how it works; just show me what to do.." (Anon 1989, 1999, 2000 [...] 2010, 2011)

People cross technological thresholds now - because they have to ( $N_i$ ). In the domain of education, take, for example, uses of Ofsted's individual school performance data tool RAISEonline ([www.raiseonline.org](http://www.raiseonline.org)). Successful head teachers use this system as a means of creating their own story of performance ahead of an Ofsted inspection visit. They are not concerned with its technological underpinnings (asp.net. MySql etc.), they are on the other side of a threshold where they are enabled to download, print out and then talk to a hard copy data report - with diagrams - in my experience, how they were generated is of no interest to them. In the domain of professional learning, lawyers, doctors, bankers, accountants and increasingly teachers attain professional qualifications through online means only. Again, they appear to be on the side of a threshold which is, to all intents and purposes, invisible.

Whilst the threshold may be invisible, it has been possible to observe that this phenomenon has occurred. Indeed, in my career, looking back, I would suggest that there has been more than one threshold 'moment'. Had I recorded or documented systematically as I went along all that I was

experiencing, this might have been a very different thesis. It might have been possible to convert such data into an empirical study with quantifiable outcomes or a series of impact assessments. In keeping however, with Foucault's hypothesis (1972), Papert's analysis (1993) and Waldrop's prognosis (1993), I decided that it was in the heuristic, exploratory, open-ended, post-structuralist *modus operandi* that I unknowingly adopted back in 1989 that I might be able to identify some meaningfulness for myself and perhaps, then, for other sense-making practitioners (see West, 2004).

In short, using a traditional research methodology was never going to be appropriate for this study, which is why I have developed one that seems to be a better fit with the overarching intentions. It requires some detailed explanation. This is akin to the rationale for their work articulated by Dadds and Hart (2001 p. 6)

"This, then, is the way we invented our methodological way through the project, designing the route to suit what we wanted to do and the ways in which we wanted to foreground the perspectives of the practitioner researchers in our analysis and theorising." (Dadds and Hart, *ibid*)

It is the deployment of a relativistic epistemological method such as this that sponsors the specific research methodology for this study.

### 3.1.1: Why an auto/biographic case study approach?

In keeping with the insights of Michael Polanyi (1962), I have become uncomfortable with the outcomes of positivist and quantitative methods, the so-called ‘scientific’ approaches (See e.g. Scott, (2000); Dawkins, (2006), “...the dominant form in educational research” (Whitehead and McNiff, 2006 p. 4). I have, therefore, selected a combination of methods that are at the other end of the research paradigm continuum as articulated by, for example, Guba (1990), Elliot (1991), Somekh (1995) and Hopkins (2002). My reluctance to use surveys, statistics or measurement scales is based on the interpretation of apparently ‘raw’ data seeming to be dependent on the mindset, prejudices and preoccupations of the researchers (e.g. OFSTED, 2004; Dawkins 2006, OFSTED 2007). This is a view shared, and extended, by others working with the ‘fuzziness’ of educational practice and personal and professional development:

“The methodology preferred in investigating the problem of understanding human social behaviour, it is implied, needs to be addressed by ‘large scale’ quantitative methods, which produce verifiable and ‘tested’ data. Tested does not mean the same as true, as the understanding arrived at remains partial.” (Reid, 2008 p. 22)

Reid’s work - which owes much to the mentoring of Linden West in Canterbury - has attempted to find an approach to research that takes account of the complexity of human experience because, “... different people will construe the world in different ways according to their social viewpoint thereby producing *versions* of reality” (Reid, *ibid*). She notes also, within this construct, that it is impossible to extract the researcher from the research (Reid, 2008 p. 23) and goes on to make a crucial point for my study:

“Rather than trying to distance ourselves or apologise for our involvement, by acknowledging the self in research we can engage with our pre-existing understandings and assumptions ...” (Reid, 2008 p. 25)

In one sense, I have taken this thinking to its logical zenith. This research is about the researcher and no attempt is being made to distance the object from its methodology. This approach resonates well with Whitehead and McNiff's increasing frustration with interpretive action research which they say positions "the researcher as separate from the objects of inquiry, namely, the practitioners they are studying." They go on to remark, "This separation between researcher and researched is deepened in the new technical forms [of action research], where the researcher's responsibility is to create action plans for a practitioner to implement." (Whitehead and McNiff, 2006 p. 24). This is a reason why this work is not positioned as pure action research even though it is the actions arising from the reflection on experiences that are professionally interesting. What is not possible in auto/biographic case study research is the removal of the self from the project. Whitehead and McNiff would argue therefore that my personal ontology is influencing my approach to methodology:

"If however you see yourself as part of other people's lives, and they of yours, you may adopt an insider participative approach, which would involve you in offering descriptions and explanations for how you and they were involved in mutual relationships of influence." (Whitehead and McNiff, 2006 p. 23)

That being said, my autobiographical immersion in the process does not permit epistemological woolliness or a cavalier approach to methodology. The need for accuracy and attention to detail is exhorted by Abbs (1974) commenting on his own methodology. That is why I have taken time to write narrative accounts of the illustrative moments (IMs) that are the research objects of the study, triangulating them with *aide-memoires* (e.g., Appendix 1, a scanned version of a handwritten journal, written during a formative trip to New Zealand). This is in keeping with the eclectic approach of auto/biographic researchers:

"We used a variety of methods in the evaluation: focus groups, in-depth auto/biographical interviews and participant observation. We built an eclectic multi-faceted approach, with the aim of creating a dynamic, cyclical, reflexive as well as collaborative enquiry. Our aim was to inductively generate themes from the material and interrogate and interpret these with the people concerned, in a process of shared learning. Researchers often adopt a stance of knower rather than learner." (West and Carlson, 2007 p.39)

West's (2004) approach to research has been instructive and informative for me in this study especially in establishing the importance of auto/biography in developing self-awareness and perception. This is further illuminated when benchmarked against the propositions of Whitehead and McNiff. For example:

"If you perceive yourself as a participant in the world, interacting with others, you may see your interactions as a process of creating new knowledge individually and collectively. You would test any provisional understandings against the critiques of your companions. This living process would require an openness to new possibilities, and a resistance to closure." (Whitehead and McNiff, 2006 p. 23)

The work of Swann & Pratt (2003) has also been helpful in arguing that educational research needs to make sense to the people using it so that they are empowered to select the most appropriate method or collection of methods as suggested by the object(s) of the research. Similarly, Meekums notes that in the field of auto-ethnography, 'researcher subjectivity is seen as a legitimate lens for examination of social and cultural phenomena, rather than a voice to be exorcised' (Meekums, 2008 p. 287).

Ethnography, and thus auto-ethnography, seek to describe and narrate experience 'highlighting stories of relationships and emotions affected by social and cultural frameworks' (Meekums, 2008 *ibid*). My research focuses not on the stories (the IMs) themselves so much as the reflections on them and the actions within and arising from them i.e. the reflexivity of auto/biography. The reflexiveness of this method is accounted for more fully by the slash "/" in auto/biography as revealed in an etymological analysis of the term (see section 3.1.4).

Since it is my professional learning that is the object of the research, an auto/biographic method is thus deemed an appropriate method for it.

The intention is to take an approach to aspects of my autobiography in a multi-layered way. For this reason, it might have been appropriate to constitute this as a 'single case' study method (see Yin, 1994). However, given the detail necessary to achieve meaningfulness, it has been decided to extract five illustrative moments from the autobiography around which to structure the reflexive process and thus to adapt extensively case study methods.

Whilst auto/biographic research methodology is becoming increasingly used in research projects, knowledge of it is confined to a relatively small, though growing academic community (See e.g. the European Network for Life History Research), and so it seems important to outline its origins and provenance. Arguably its origins are within the philosophical tradition of phenomenology the architect of which would appear to be Edmund Husserl (1970). What follows is an analysis of phenomenological methods in research which builds on some of the relevant insights from phenomenology on the 'self' set out in chapter 2.

### 3.1.2: Phenomenological underpinnings

Put simply, phenomenology is the study of phenomena which includes both objects and subjects but it is also the intellectual domain where subject can be object and *vice versa* (see Natanson, 1970; Sokolowski, 2000; Russell, 2007). Arguably, the doyen of phenomenological research processes is Clark Moustakas, he writes,

“The methods that are central include: growing quiet and listening; coming to an inward clearing; connecting with a dominant question, issue, or concern, related to a specific person (including one’s self), or a situation or an event; describing the experience; determining the qualities, invariant constituents and core themes; considering possible meanings; and arriving at an understanding of the essences of those experiences.”  
(Moustakas, 1994 p. 63)

To be clear, this thesis focuses on the essences of the five illustrative moments that constitute the objects of the research. I want to argue that prior to engaging in the structured analysis of the moments, there seems to be something 'essential' between them that transcends the time span and connects them up as parts of a constituent whole; something that I want to explore, understand and develop. At this stage that shared 'essence' would seem to be the N-ness of the framework.

Central to phenomenological methods is the self. My intention is thus to excavate systematically my own autobiography, but with a narrow focus on the five critical incidents (phenomena), as illustrative moments – things that Moustakas calls, ‘experiences’ (Moustakas *ibid*). My selection of these experiences comes from reflexive processes that have suggested they were important milestones on my professional learning journey. To aid this process I intend to approach them in the ‘philosophical attitude’ as described by Natanson (1970) and Sokolowski (2000) so that each of these is seen as a ‘moment’ in the ‘whole’ of my life and its

auto/biography. The term auto/biography and its etymology are further explored below (see 3.1.4).

By this, I mean that each illustrative moment will be examined as though it were, metaphorically, a cube (see Natanson, 1970 and below). One of the problems with straightforward narrative is that it can render findings in two dimensions only. In effect it is only like a non-critical reading of a text where no attempt is made to analyse what is ‘written between the lines’ or that which operates as a sub-text to the plot. The adoption of this ‘phenomenological approach’ enables me to consider each object – the five illustrative moments - from a range of perspectives, sides or aspects, literally ‘a multi-faceted approach’ (West and Carlson, 2007 p. 36) . Thus, in this auto/biographic case study, each incident will be explored for what it disclosed to my evolving professional self. In so doing, rather than examine each metaphorical ‘cube’ from the flat perspective as seen in figure 2 above, each will be looked at from ‘round the back’, at the side, from above and from below as signified by figure 3 (also above) which shows the same object viewed from a corner-on perspective. Changing the perspective on the IMs may well alter the perception of what is seen and what it may represent. Each object may look very different. It is my contention that this take on my autobiographic moments will mean that the ensuing analyses could be more rich and potentially useful, than if they had been from a 'narrative' perspective only.

This is in keeping with the insight of what Moustakas terms ‘transcendental phenomenology’ (Moustakas, 1994 p. 25) whose rationale derived from Husserl’s work,

“For a while I became an isolate, in the way Husserl advised, withdrawing completely into myself, while seeking to acquire knowledge of science through concentrated studies of experience and the reflective powers of the self. I sought to place myself in Husserl’s world of transcendental phenomenology, while recognizing that my own knowledge and experience, in a free, open and imaginative sense, ultimately would determine the core ideas and values that would linger and endure” (Moustakas, 1994, p. 26)



The concentrated studies I have undertaken hitherto tentatively, but will re-visit as part of the systematic research phase of the project, conform to accepted descriptions of reflections on critical incidents as in the work of Jasper (2003) who says:

“We have used this term to refer to any specific occurrence that happens to us that we can use as a focus for our reflective activity. Utilising these for analysis using a structured framework enables us to build up a collection of evidence of our learning and development” (Jasper, 2003 p. 154)

‘Telling a story’ is, in human behavioural terms, achievable in a number of ways, one of which is autobiography (see next sub-section). Here is some advice for those writing reflectively within the field of medicine at Monash University in Australia,

“A critical incident need not be a dramatic event: usually it is an incident which has significance for you. It is often an event which made you stop and think, or one that raised questions for you. It may have made you question an aspect of your beliefs, values, attitude or behaviour. It is an incident which in some way has had a significant impact on your personal and professional learning.” (CALT, 2008)

The selected critical incidents or ‘illustrative moments’ (IMs) as I am choosing to name them, seem to me to have raised questions for me, questioned existing behaviours and practices and, since I am no longer a teacher of religious education, seem to have had an impact on my personal and professional learning. This is further explored in section 3.1.7

In the context of defining a research methodology the *object*, ‘myself’, becomes the *subject* of the study for it is to be used as a key to unlock the space at the interlocation of epistemology, self and (information) technology, in this auto/biographic case study. In Husserl’s account of phenomenology, “*noetic* analyses look at the structure of acts [...] whilst *noematic* analyses look at the structure of objects.” (Russell, 2007 p.84; or Sokolowski, 2000) Were the study to be of the technologies I have worked with to achieve my professional learning gains, the analysis

would be necessarily noematic, but that is not the intention. Rather, I intend to examine the self-referenced acts of learning to which technologies have contributed thus rendering, within the phenomenological attitude, the analysis noetic. There is a chance that if the research turns out to warrant the claims I made in section 2.2x about the existence of an albeit theoretical framework, time will have to be spent exploring this 'object' noematically in the latter stages of chapter 4 and further in chapter 5. This will be to theorise more fully about the nature of that object and how it is structured.

### 3.1.3: Autobiography

That this study seeks to examine aspects of my self as a learner and professional, necessarily locates it within an established tradition – autobiography. In order to support my methodology further, I sought and found justification within the research methods literature and would point to the work of Abbs (1974) as seminal. Tacit support for the methodology is also to be found in the work of Dadds and Hart (2001) and in the robust critique of the method offered by Scott (2000). Abbs asserts that, “Autobiography is the search backwards into time to discover the evolution of the true self...and [its] poised flight into the future” (Abbs, 1974 p. 7).

A reinforcement for the adoption of an attenuated autobiographic method was found in the docu-novel ‘*iPod, therefore I am*’ (Jones, 2006) where the author produces an autobiography by reflecting on the contents of his iPod and what it tells himself about himself at different ‘moments’ in his life. The value of that “scripture” to the thesis is significant since it epitomises the relationship between self and technology and does so through the telling of a number of stories from an individual's life history. This is redolent of a tradition which Abbs says, started with St. Augustine of Hippo (Abbs, 1974 p.7) and includes other texts in the canon of English literature like the *Diary of Samuel Pepys* and the quasi-autobiographical works of Helen Fielding (1997; 2004). Jones is not, however, attempting to obtain a Ph.D. and so his self-reflective analysis remains at surface level<sup>46</sup> – viz., a two-dimensional narrative. “The essential building blocks of the biographical<sup>47</sup> method are the text, the narrative, time, multiple perspectives, relationships between the structural and the agential, traditions of thought and inscriptive practices, interpretation and identity.” (Scott, 2000, p.95)

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<sup>46</sup> On re-reading this, I would liken Jones' work to that recorded by me at Stage 2 of the research process (see section 4.2)

<sup>47</sup> Of note here is the interchangeability of the term *biography* with *autobiography* since the essential difference between the two types of literature is authorship (see Scott, 2000)

As an RE specialist the use of story and narrative were essential components in my pedagogic toolkit. I often created 'stories' in order to make substantive teaching points, some of which were published in pupil resources (see Hughes, 1999 p.12). Later, I drew on the experiences of other head of department colleagues when creating vignettes to illustrate by narrative, subject leadership and management techniques (see e.g. Hughes, 2003b p.56) and I used my own autobiographic experiences to make relevant to others my own theoretical perspectives, (see e.g. Hughes, 2003b p.55). In that example, the vignette was anonymised as an attempt to make it more accessible to readers, but its value lies in the sense it might make to other meaning-making practitioners facing similar challenges in analogous situations. If it made sense at all, it was because it was born of authentic, lived experience. That I reflected on such experiences and adjusted my practice accordingly would suggest that I had adopted auto/pedagogic practice without knowing such a phenomenon existed.

Many of the authors on whose writing I have drawn to provide the theoretical underpinning for this study report autobiographically learning and/or thinking that changed them. A selection of their comments are presented here as witness statements on the power of autobiography:

Polanyi writes,

"I can still remember my own amazement when, about 1919, I first heard the idea mooted that the anomalies were to be regarded as a refutation of the equilibrium postulated by Arrhenius and to be explained by a different theory." (Polanyi, 1974 p.293)

McDonagh writes,

"It is a matter of autobiographical record that such occasional responses become more and more infrequent and that my choice of themes for lectures or articles is much more determined by my own preoccupations and much less by the requirements of organisers and editors. It is the history and value of these preoccupations that determine the autobiographical significance of the issues discussed in this book." (McDonagh, 1979 p.2)

Law writes,

"When I look back at those crazy times they have a dreamlike, unreal quality. The meetings in America were in weird and wonderful places. Grown men would start crying as a vision of the future touched a previously unexposed nerve. But almost two years after it was disbanded I realised what a mistake that kind of 'Task Force' mentality is. We were creating a micro-culture for ourselves and were not changing the company." (Law, 2001 p.22)

Naughton writes,

"This is an intensely personal work which makes no claims to provide a definitive account of the Net's evolution. Rather it picks out aspects of the story which seem to me to be significant, and tries to explain why. And if it reads like a passionate work, then that is because I feel passionately about its subject." (Naughton, 2000 p.ix)

Friedman writes,

"As I came to this realization, I was filled with both excitement and dread. The journalist in me was excited at having found a framework to better understand the morning headlines and to explain what was happening in the world today." (Friedman, 2006 p. 8)

Echoes of each of these quotations appear in all the autobiographic writing that comprises the Appendices 1-6 of this study. They would remain however descriptive accounts rather than analytical objects if the method of this study was only autobiographic.

### 3.1.4: Auto/biography

Autobiography can be said, then, to describe 'what' happened. West's work (2004; West & Carlson, 2007) suggests that analysis of these narratives can, if appropriately constructed, lead to potential accounts of 'the causes and motives' of what happened or the meaning that underpins, surrounds or influences what happened. West might say, the 'why' of a phenomenon. "... autobiography, far from being the enemy of insight and profound knowledge, is a powerful and natural resource to be used to understand others' life histories; and that empathy and relatedness are essential to telling stories." (West, 2004 p. 19) Central to this analysis is the active participation of the putative knower in the act of meaning-making. "It is also about seeing our own lives as potential sources of experience to help us more fully understand the other just as their lives may help us better understand our own" (West & Carlson, 2007 p. 38).

Auto/biographic approaches take this method to another level because participants are encouraged to reflect on their life histories in order to make explicit their motivations and inspirations (West, 2004), and the factors that empower or constrain them in their professional lives (Day et al., 2006; Day et al., 2007). "This perspective concentrates not on a system of structures and institutions which are presumed to exist independent of the people who inhabit them, but on the symbolic processes by which human beings create, sustain, and reproduce their life worlds" (Goodson and Mangan, 1991 p. 9).

"Auto/biography' draws attention to the inter-relationship between construction of one's own life through autobiography and the construction of the life of another through biography." (West and Carlson, 2007 p. 41)

It is this reflexivity that distinguishes auto/biography from autobiography, hence the insertion of the "/" or slash. In the French language there is a sub-category of 'doing' words known as reflexive verbs. These are further defined as verbs that 'reflect the action back onto the subject'

as in the case of *Je me lave* (I wash myself). In the *praxis*-oriented work of theologians of liberation, it is the action arising from reflection that distinguishes their *modus operandi* from those who reflect only and act not. The point being that there is a dynamic cycle back and forth between action and reflection. In my view reflection is aided by critical review of relevant literature which is why at each point in my autobiography, I have attempted to 'read around' the work in which I was contemporaneously engaged. Gutierrez describes a person engaged in this type of activity as an 'organic intellectual'<sup>48</sup>:

"He will be someone personally and vitally engaged in historical realities with specific times and places. He will be engaged where nations, social classes, people struggle to free themselves from domination and oppression by other nations, classes and people."  
 (Gutierrez, 1971 p.13)

It is worth pausing at this point to compare Gutierrez's hermeneutic circle (1971) - see also Boff, 1981 pp. 37-39) with a more recent iteration of a reflective cycle as reported by Jasper (2003 p.77):

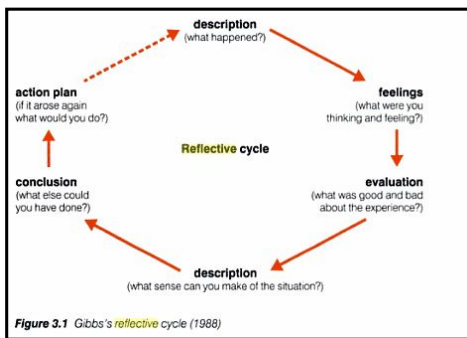


Figure 13: Jasper's Version of Gibbs (1988)

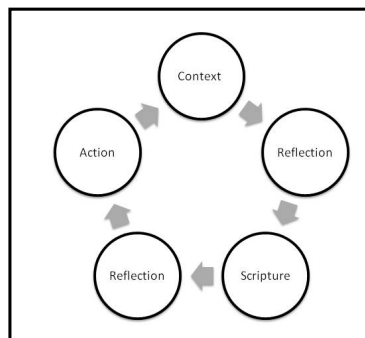


Figure 14: A simplified hermeneutic circle

Of note in these two graphics are: the automatic yellow shading inserted by Google Scholar, indicating my search for Jasper + Reflective + Practice; the cyclical nature of the processes showing the ceaseless journey of change and improvement and the comparable emphases on

<sup>48</sup> A term he attributes to Antonio Gramsci (1971).

context/situation and action. These themes are repeated in auto/biographic work where there is a strong sense that the individual is engaging in a continuous process of enquiry which tracks their daily life and all its challenges. Meekums writes this of her own research:

"The procedure was not worked out in advance, but evolved in response to my inner promptings and also to external opportunity at each stage. In many ways it mirrored my career trajectory in following a creative cycle of conscious decision-making, indwelling, inspiration and testing of ideas." (Meekums, 2008 p.289)

There seem to be direct parallels between Meekums' lived experience and my own attempts at making meaning from my own career narrative. Gladwell puts it this way,

"We have some experiences. We think them through. We develop a theory. And then finally we put two and two together. That's the way learning works." (Gladwell, 2006 p. 9)

It is worth noting Gladwell's assertion, 'We develop a theory' (*ibid*); it will become meaningful later in this chapter. This is very similar to the intellectual processes adopted by theologians of liberation alluded to above. The next few words indicate how I will be adapting their hermeneutic circle in the context of this study.

As I learned from Reid (2008) the edges between the researcher and the research are 'fuzzy'. As I learned from Natanson (1970) and Sokoloski (2000), in phenomenological methodologies, objects become subjects and vice versa. It would therefore be incongruous to separate the insights elicited from the process by which it was gathered, especially since, in one sense, I am my own data.

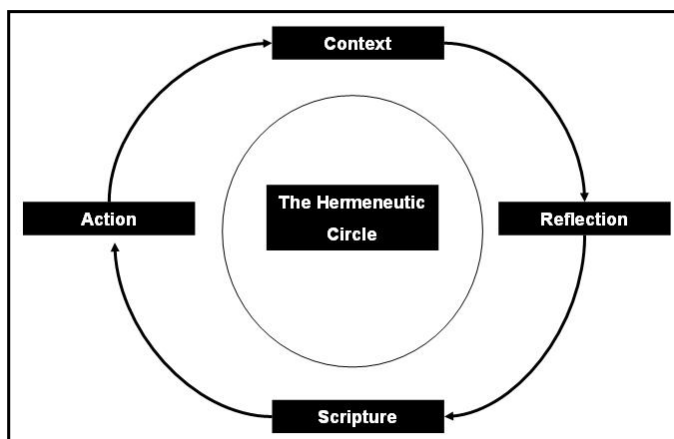
What appears to matter more is the interpretation that I wish to put on the raw data. This is insight derived from later adopters of phenomenological approaches like Jackson (1997, 2006) who recognise the potential dangers of the super-imposition of researchers' values on their objects, and thus regard it as essential to make explicit their own involvement in the dynamics of



the research encounter. Moreover, in keeping with the auto/biographic approach adopted for this thesis, this is about my interpretation of events and how they influenced my learning journey, my career pathway, my professional standing and prompted me to take further auto/pedagogic actions.

Clearly, therefore, there needs to be an explicit statement of the interpretive process. As should be clear by now, a theme that flows through this thesis is dependent on my engagement with, knowledge, understanding and utilisation of the theological discourse. From the 1960s there has been a very clear hermeneutic applied to theological processes which owes much, in theoretical terms, to the insights of Foucault (1972), Derrida (e.g. 1992) and their analysis of contexts and ‘scriptures’. In political terms, theological analysis of contexts and the pastoral circumstances of believers, depend extensively on the work of Gustavo Gutierrez (b. 1928). His hermeneutic circle has been influential all the way through my career and now forms a part of the analytical methodology of the data emerging from this study.

#### **An updated ‘Hermeneutic Circle’ (after Gutierrez, 1971)**



**Figure 15: The Hermeneutic Circle**

The diagram in figure 15 has been drawn to represent pictorially a distillation of Gutierrez's analytical tool. As was seen in section 2.4, this tool has been adopted or adapted for use in a variety of situations where change was necessary pastorally (e.g. South America, South Africa).

Self-evidently I am neither oppressed, marginalised or excluded. A relevant criticism of this method might be therefore that to adopt it is patronising and inappropriate. I would contend, however, that it is made relevant for the structure it brings to reflection on specific context(s). These were essentially contexts of 'unknowing', in the sense in which Ryle intended it (see chapter 2). Liberation, in my case, through a dynamic cyclical reflexive process was from ignorance. That the reflections led to action, start to warrant my beliefs - the classical theory of knowledge - about how I came to know new things:

"We are interested in knowledge, according to this theory, because we are interested in the truths of our beliefs; and the search for knowledge is the search for justifications which guarantee that truth." (Scruton, 2004 p. 318)

The auto/biographic method I use here has been put together as an explicit attempt to search for justifications for the beliefs about the 'what' of auto/pedagogy. This necessitates a structure for the reflexive process which takes account of aspects of the circle.

The following table sets out my key for each of the components in the diagram, demonstrating how they might be used by those participatory analysts looking at their own setting. Once complete, I intend to develop this for the present study before applying it to each of the five sub-case studies. Please note here terminology I was using at a much earlier stage of the study - from this point on I drop the term sub-case studies and refer only to illustrative moments (IMs).

**Table 2: A key to understanding Gutierrez's hermeneutic**

Component	Exemplar
<b>Context</b>	<p>In this component of the hermeneutic circle, the participants describe or narrate their experience. In all context theologies, the experience to be described is an experience arising out of marginalisation, alienation, oppression or exclusion from power sharing within society. It is through these lenses that actions or behaviours on the part of others are observed and noted. <i>Campesinos</i> living in the mountains of Peru were encouraged to look at their experience of injustice (see John Medcalf <i>Vamos Caminados</i>.) in comparison with their European counterparts.</p>
<b>Reflection</b>	<p>Gutierrez exhorted his readers to form themselves together into basic church communities to unite in a common purpose. The next step on the cycle was to examine the shared experience as an intellectual activity through structured reflection in the light of, in his case, Marxist sociological analyses (see Gutierrez, 1971). In some ways this was his most notable achievement in that he effected a reconciliation between the rational religious position of the Church and the secularised sociological position of workers in the field, a reconciliation that was crucial for the, then, Pope who sensed the movement of his flock towards those who would be more likely to achieve freedom in <i>this</i> lifetime.</p> <p>“Catholic thinkers in the past generally followed the Greek tradition of defining the human person as a thinker. In presenting the human person as fundamentally a worker, the Pope in <i>Laborem Exercens</i> is breaking from the Greek tradition and following in the tradition of Karl Marx. Of course he does not become a Marxist merely by adopting this approach. Nevertheless, it is evident that his understanding of human life and society have been profoundly affected by some aspects of Marxist philosophy” (Dorr, 1992 p. 309)</p> <p>Thus, the <i>campesinos</i> would examine land ownership and note that ‘their’ land had been ‘stolen’ by European settlers during the migration into Latin America in the 17<sup>th</sup> and 18<sup>th</sup> Centuries.</p>
<b>Scripture</b>	<p>Given the theological construct in which this was taking place and the fact that, frequently in South America and in the townships of South Africa the one, free, focal point for the community was the church, it is not surprising that this intellectual activity fed into biblical analysis to find scriptures that might be illuminating for the ‘experience’ to be examined. The Old Testament is packed with stories of hero leaders rescuing ‘the people’ from slavery, imprisonment, oppression or injustice. It is not surprising that the Exodus narrative (Ex 1-20) has become a model for liberation movements sponsored by believers from the Judaeo-Christian tradition. The finding of empathic biblical texts became a source of inspiration in taking forward the challenges into political action:</p> <p>“On reaching Jerusalem, Jesus entered the temple area and began driving out those who were buying and selling there. He overturned the tables of the money changers and the benches of those selling doves, and would not allow anyone to carry merchandise through the temple courts.” (Mk 11;15-16)</p>
<b>Action</b>	<p>Gutierrez believed that <i>orthopraxy</i> was more important than orthodoxy (1971). By this he meant that people must act on the basis of their reflections and findings. So the interpretation of impoverishment, exclusion or imprisonment must be addressed in concerted and collaborative action. In this sense he was no different from the Marxists who provided a secularised interpretation of the conditions of</p>

	exploitation prevalent in South America in the 1960s and 1970s. The history of that period is speckled with coups, revolutions, insurrections and counter-revolutions.
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If, as the quotation from Dorr (1992) above shows, Gutierrez (and others, e.g Boff, 1981; Segundo, 1982) could prompt the Pope to accommodate a hitherto anathema creed, and thus to arrive synthetically at a more enriched interpretation, it would appear to follow that the imbueing of empirical experiences with insights from the most eclectic range of external sources will make the findings of this study powerful and productive potentially.

"Here is a preliminary definition of the hermeneutic circle: it is the continuing change in our interpretation of the Bible which is dictated by the continuing changes in our present-day reality, both individual and societal. 'Hermeneutic' means 'having to do with interpretation'. And the circular nature of this interpretation stems from the fact that each new reality obliges us to interpret the word of God afresh, to change reality accordingly, and then to go back and reinterpret the word of God again, and so on." (Segundo, 1982 p. 8)

So scripture is interpreted in the light of experience and experience is interpreted in the light of scripture. This dynamic and dialogic to'ing and fro'ing is redolent of the iterative processes of software development (see Naughton, 2000 p. 261 or Friedman, 2006 p. 96) and, in complexity theory, the feedback loops that are essential for relevant organisational development (see Stacey, 1994 or McMaster, 1996). It is thus appropriate for this study which has been a continual reflexive dialogic methodologically, as I worked to find a rationale for warranting my true beliefs.

It is for this reason that the next table sets out a revised, adapted and enriched schema to be applied to the five illustrative moments that follow.

**Table 3: A key to understanding my hermeneutic**

<b>Component</b>	<b>Exemplar</b>	<b>My intended research activity</b>
<b>Context</b>	In this component of the hermeneutic circle, the participants describe or narrate their experience. As was seen in section 3.1.4, the use of narrative has become an established	For each illustrative moment, I intend to write a narrative account which will provide details of what happened but which teases out those salient details

	tool in social science research to collect data which is informative of the experience of people. It has many theoretical expressions, like auto-ethnography, auto/biography and history.	that are relevant to the overall epistemological schema. This will be done inline with the chronological account so that the process reads as a story
<b>Reflection</b>	Here participants are encouraged to reflect, with the help of pedagogic agents, such as teachers, computer wizards, coaches, directors of study, existing schemas or programmes, on the narrated experiences in order to establish key messages or lessons to be learned.	Whilst narrating each of the events selected, I intend to explain what each meant at the time and what they have come to mean since. Whilst I may have been aware, future-gazing, of what they might mean at the time, their actual significance is probably only assured now with the benefit of hindsight and in the light of further interpretations that subsequent phenomena may have added to them.
<b>Scripture</b>	This term seems out of place within the meta-narrative of social science research but it is retained here in keeping with Scott's (2000) notion of 'inscriptive' practices. It also points directly to those bits of Christian and other theology that 'pop up' throughout the thesis <sup>49</sup> . Moreover, it is legitimate to use a loose interpretation of its meaning and for it thus to represent the whole literary background to the project which does include key works from the canon(s) of each of the cognate disciplines that it straddles – epistemology, self and (information) technology. For example the work of Seymour Papert (1980) is treated with almost sacred reverence by those referring to it within the emerging discourse of educational technology (see Turkle, 1990; MacFarlane, 1997)	Throughout this thesis, where relevant and necessary to support or endorse key messages arising, references will be made to the literature. Allusions to material in other fields of human enquiry are inevitable given that <i>my</i> self interacts with, for instance, a lot of music. There are times when the words from a song seem to amplify the meaning being derived from reflections on a given incident or that the mindset with which I approach an episode from my career is partly framed by the <i>zeitgeist</i> which will include musical overtones.  Noteworthy here might be the first piece of music, I played using the multimedia functionality of a PC or the first track I downloaded from <i>itunes</i> – the point being that auto/pedagogically I would have thought, 'if I can do this... I wonder if x is possible...'
<b>Action</b>	Activism is the logical outcome of <i>orthopraxy</i> . It is consistent with my preferred learning style which was self-assessed within a NCSL coaching framework as akin to 'active experimentation' (Kolb, 2005). It is also comparable, in educational terms, to that which Benjamin Bloom (1953) described as 'application', that is the ability to "adapt and	In considering each illustrative moment, I will be looking to establish what new bits of learning emerged from them but which were then tried out in other analogous situations. The knowledge acquired of Logisix referred to below in IM1, solved one short-term problem but also made me

<sup>49</sup> It is also consistent with the accommodation between Marxism and Christianity evinced above and about which Dorr writes powerfully (Dorr, 1992).

	integrate expertise to satisfy a non-standard objective" (see Chapman, 2006).	wonder what might happen if I were to aggregate all the scores from each class on a half termly basis and to what extent such data might lead to me being able to make more informed assessments of the progress of each cohort of pupils.
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### 3.1.5: Case study

"As a research strategy, the case study is used in many situations to contribute to our knowledge of individual, group, organizational, social, political, and related phenomena." (Yin, 2003 p.1)

In keeping with the phenomenological approach, I have chosen to treat myself and my story, as both subject and object of the study and to turn my auto/biographic activities into a significant case study. Scott's work (2000, pp. 92-94) has alerted me to some of the challenges epistemologically to this methodology where he says, for example, "The interpretive or hermeneutical procedure implicit in the biographical act is necessarily replicative of the process undertaken by the auto-biographer". By this he means that the act of 'inscription' (Derrida, 1997), creating narratives, texts and biographies, is subject to conditioning and the superimposition of 'agendas' (Scott, *ibid*). It seems important therefore to approach the case study of myself with a clear understanding of what I intend to '*grapheme*' (Derrida, 1997). Borrowing phraseology, from Marton and Säljö (1976), Greasley and Ashworth (2007) move on to a second order of research epistemology by the adoption of the term, phenomenography. They write,

"Phenomenography is a qualitative methodology in which each particular study focuses on a concept, entity, or situation and tries to map the various ways in which that thing is construed ('experienced, conceptualised, understood, perceived and apprehended') by people." (Greasley & Ashworth, 2007 p. 821)

If phenomenology is the study of phenomena and *grapheme* Derrida's generic term for texts (see Derrida, 1997), then phenomenography can be conceptualised as 'writing about phenomena'.

This is what I intend to do.

The intention is to limit the research to the study of five phenomena in my autobiography which will be treated as illustrative moments. These critical incidents have been selected because initial reflection suggested that they might indeed conform to the 'insider participative approach'

advocated by Whitehead and McNiff (2006). This is a valid way of tackling a new research field in which the body of knowledge is very much in its infancy. That is why I would assert that the work is best placed within the growing tradition of 'Living Theory':

"We explain that practitioner action researchers should be seen as capable of making significant contributions to quality theory, but to achieve this perception, they need to show how they engage with issues of theory and knowledge in explaining why their research should be assessed in its own terms and from within its own established scholarly traditions." (Whitehead and McNiff, 2006 p. 5)

At this stage of the enquiry, it does not seem appropriate to use illustrative moments approach to *test* existing theory. I make this claim on the basis of my knowledge of the field which indicates that there is no extant theory about auto/pedagogy or that no one has attempted to describe the albeit theoretical space at the interlocution of epistemology, myself and (information) technology.

Case study research is usually regarded as a qualitative method (see Silverman, 2001) and is thus grouped appropriately at the end of the continuum of research paradigms with philosophical, theoretical and phenomenological traditions. However, this work arises out of a very grounded set of experiences and I propose the graph at figure 16 as an illustration of how the work is positioned in relation to other aspects of human enquiry. I would suggest that the intended insider participative work sits within the uppermost adumbration, since the illustrative moments selected will be used to attempt to explore that space where applied theory flows into reflexive professionalism but is made meaningful in its dynamic and cyclical interaction with a real self.



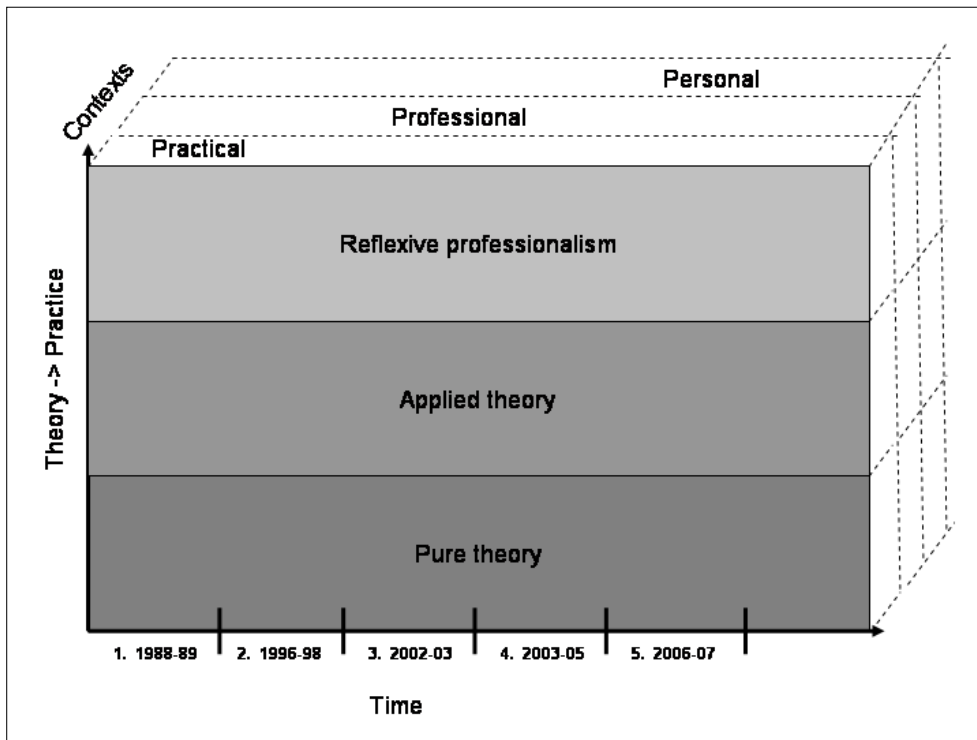


Figure 16: Illustrative moments *in situ*

Several comments are necessary at this stage. First, it should be noted that case studies are not normally reported as spanning twenty years, though I would contend that this does not render this meaningless, any more than the power of the BBC TV series '7-Up', '14-Up', '21-Up', ... '56-Up' is diminished by its longevity. Indeed, it may well be strengthened by the opportunities for analysis and learning afforded by engagement over such a long period. Second, the duration of each illustrative moment varies, thereby pushing the boundaries of the adoption of the term, 'moment'. Again, I would assert that this is acceptable since it is the profundity of the learning that is in question in each instance not the validity or variability of the conditions under which it took place. Third, the layering of experience, indicated by the three-dimensional nature of the graph, enables one to claim the profundity of the learning that I sense occurred in each of these moments.

Critically, the diagram points to the structured way in which I wish to approach the exploration of these illustrative moments, so that any theory emerging from their analysis will be evident and coherent.

### 3.1.6: The five illustrative moments

It should be noted that along the x axis of the graph, in figure 16, are specific time zones which correlate to the five illustrative moments that I wish to explore as the theory-building data for the thesis. During my fifteen month engagement with 'transcendental phenomenology' (Moustakas, 1994 p. 26 see section 3.1.2), it occurred to me that there were five moments that have been most influential in my professional learning journey. I have chosen to name them as:

- "Can you use a computer?"
- Invention & Development of network (RE-Net)@ St. Simon Stock
- Rhizomic networks emerging from New Zealand experience
- Content management in the TTRB
- Discovery of *iPD*

There were many other candidate 'moments' that could have been chosen. Moreover some of these IMs (as set out in Appendices 1-6) contain even more granular 'instances' of illumination or illustration. One of the reasons for trying to capture the chronology of this project graphically (i.e. figure 16) is to show the time-boundedness of the IMs. What I learned in each one has, in effect, become a building block for those that came later. What I need to acknowledge here is that the layers of learning derived from each IM was not limited by the time in which they occurred; rather their significance and meaning has evolved over time as I have re-visited them in memory looking for further insight and meaning.

The four stage process of analysis by reflection that I have been through now has made me realise that these IMs were more elastic than static. They stretched back into my past to pull forward knowledge, skills and understanding but they are themselves dragged forward from time to time as I wrestle with new technological challenges in my contemporary professional life.

A further reason why I settled on these five IMs is because of the very obvious impact they had on my career at a superficial level. As an outcome of IM1, I got a job. As an outcome of IM2, I built probably the first RE intranet in the country. As an outcome of IM3, I became the Faculty of Education's Director of Learning and Teaching with ICT. As an outcome of IM4, I became reasonably well-known nationally as one of the organisers of the knowledge base for teacher education and as an outcome of IM5, I became the co-founder of the first, fully-online teacher training programme in the UK. In each case, my professional self was changed and with it my perception of myself and my identity in the eyes of others. I say all of the above with the benefit of hindsight and the long process of reflecting on the reflexive processes that have brought me to this point.

At an early stage of the doctoral process, I began to ask what other characteristics there were in these moments that caused them to appear to be as significant as they were. What I concluded was that each one had caused me to engage in a process of self-directed learning. Now, again with the benefit of hindsight, I realize that what was forming in my mind was the process which I have come now to describe as auto/pedagogy.

In section 2.2x, I articulated a four factor model for describing how auto/pedagogy might be conceptualised. The development of this theoretical framework is an important outcome of the work so far, deriving as it does from reflections on reading (see chapter 2), and hermeneutic processes akin to action research (e.g. McNiff, Lomax and Whitehead, 2002). Each proposed illustrative moment was evaluated against this model as part of the selection process interactively. This is precisely because of the insights derived from the work of Polsani (2002), described in chapter 2.1, where each bit of knowledge informed the design cycle and the design cycle itself informed the evolution of knowledge. Several pilot research objects were also

reviewed as simple narratives in order to refine the questions I would need to ask of them albeit self-referentially, and in the quiet of my own imaginings (Moustakas, 1994 p. 25). In addition, in very simple terms the following questions emerged as a schema: Who? What? When? Where? Why? To these almost journalistic type questions I added, “what influence did these illustrative moments have on: a) learners, b) the professional context and c) myself.

I then posed of them two further questions:

- What new knowledge or understanding did I derive from these incidents about myself and technology?
- What influence did these events have on my career trajectory?

To assist the reflexive approaches to these ‘objects’, I applied Gutierrez’s (1971) ‘hermeneutic circle’ (see above) which required me to examine them in the light of theoretical perspectives, to review what impact such reading had on my understanding of what had occurred and to evaluate the interrelationship of these empirical enquiries to the evolution of my own personal knowledge base and evolutionary career pathway. This is my adaptation of the ‘dialogical, dynamic, cyclical, reflexive’ approach advocated by West and Carlson (2007).

Indeed, the selection of those experiences represented a significant series of actions of self-awareness and critical reflection albeit subjective and personal.

### 3.1.7: Why 'Illustrative Moments'?

I have chosen to use the term illustrative moments for two reasons: first to signal that I am not adopting critical incident theory fully and, second, because the philosophical underpinnings of this thesis suggest a more tentative approach in keeping with the insights of McDonagh (1979) and Husserl (2001) both of whom wanted to illuminate experience with theory rather than explore experience pragmatically.

The question this project is attempting to answer is, whether or not there is a discernible process that a practitioner goes through when seeking to make professional learning gains. During the process of developing a 'focal theory' (Phillips and Pugh, 1995) for the thesis, I noticed a pattern of phenomena, which seemed to be present when I was engaged in informal learning episodes associated with the development of knowledge, skills or understanding of or about technology. Reflections on such episodes, in keeping with the hermeneutic circle (Gutierrez, 1971 p.13), which drew on my existing knowledge of some 'grand narratives' in the domain of education (Lyotard, 1984) seemed to provide some literary support for the emerging hypothesis. For example, Maslow's (1943) theory provided support for my hunch that I only learned things I needed to learn. Vygotsky's (1954, 1978) theory provided support for my belief that progress in knowledge acquisition was in part due to the level of knowledge I carried into the zone of proximal development around a learning episode. Wenger's (1998) theory encouraged me to believe that somewhere out there, there would be someone or something that could help me across that zone of proximal development in an agential sense. I was also fully aware that Kolb (2005) would have argued that for something to become embedded new knowledge, I would have to actively experiment with it in new and different situations. What I was beginning to realise was that the five 'moments' of career-changing significance appeared also to evince or illustrate each of these four phenomena: the need to learn something, the dependence of new

learning on prior knowledge, the participation of myself in professional learning networks wherein andragogical agents might operate and the need to try out new learning in new situations or contexts.

It then occurred to me that in these five illustrative moments what I might be harbouring was a framework for my own self-directed learning, that which I now call auto/pedagogy. Such a framework, if it were to be found to exist might also be useful to others, I pondered.

It is the joining up into a framework and demonstration of the inter-connected nature of these four phenomena which I believe to be a unique contribution to the Education domain. However, I appreciate the need to demonstrate through a methodical approach that postulation of such a framework is justified and that the phenomena therein are appropriately described and explained. Here, then I set out the framework and demonstrate how, as a tool, it provides intra-judge reliability for the analysis of the research objects themselves. Thus, in keeping with phenomenological research methods, as also demonstrated and explained in chapter 2, the framework is the subject and object of the research intra-dynamically.

### 3.1.8: How will this auto/biographic case study approach be deployed?

"In processes of data gathering, we say, the aim is to gather data primarily in terms of the study of oneself, in order to show progress in the growth of one's own learning and how that learning can influence future learning and action." (Whitehead and McNiff, 2006 p. 5)

The intention of this study is to convert the apparently random acts of unconscious 'insider participation' into a structured research and development process in the hope of pointing to a phenomenon I have chosen to call auto/pedagogy. This is a living theoretical process as indicated by the quotation that heads this sub-section. The method by which this is to be achieved is an adapted form of auto/biography because this appears to be the most pertinent existing way of exploring a provisional and emergent phenomenon which, so far, only appears to be the case in my career narrative.

An important finding of Polanyi's work was that "The avowed purpose of the exact sciences is to establish complete intellectual control over experience in terms of precise rules which can be formally set out and empirically tested" (Polanyi, 1962 p. 18). He states "that complete objectivity as usually attributed to the exact sciences is a false ideal" (Polanyi, *ibid*). Moreover, some hard scientists themselves point to the necessity of using case studies in some circumstances. "One reason is that the ultimate units of ecological theory (e.g., organisms) are few in number as compared with the ultimate units in other scientific theories (e.g., molecules or subatomic particles), and they cannot easily be replicated" (Schraeder-Frechette and McCoy, 1994 p. 230). Interpreting this observation is simple and transcribing it into a metaphor for my methodology even more so. The unit of theory with which I am working is small – my own self-referenced experience(s). Thus, I am not seeking to establish complete intellectual control over auto/pedagogy, rather I am trying to generate some theory in support of the hypothesis.



If knowledge is to be co-constructed out of this unit of theory, it follows that some logic be applied to its analysis. It seems appropriate therefore to subject the research objects i.e. the five illustrative moments to the same investigative processes. This will enable:

- comparisons to be drawn
- contrasts from context to context or object to object to be noted and,
- patterns discerned from case to case

In so-doing the repetition logic that this will promote should increase the intra-judge reliability of any findings (see Yin, 1994), where variations from IM to IM will inform and enrich understanding rather than contradict them. So each illustrative moment will be written about systematically for what it suggests cognitively, viscerally and emotionally. This will entail acknowledging phenomenologically that my ‘memory’ of the event will be influenced by how ‘it was for me, at the time’ “Remembering is more like perceiving than like picturing something. In memory I do not see something that looks like what I remember; I remember that object itself, at another time” (Sokolowski, 2000 p. 67). It will also involve analysing the roles out of which I was acting: “...the self is constituted through the agency of role-taking, the original form of which is the act of reflection in which the self becomes an object for its own inspection” (Natanson, 1970 p. 23). It could be argued that the 20+ year gap between the first illustrative moment and the time of writing is too great for any meaningful data to be elicited but I think this is contestable. The memories of, say, war veterans returning to the D-Day beaches after 60 years were no less vivid in re-telling than those captured on film shortly after the events. Of course, the presence of stimuli as triggers for memory would have been powerful once back *in situ*<sup>50</sup>, but the veterans themselves had no vested interest in exaggeration, obfuscation or fantasy. Similarly, the presence of computers on my desk is a daily reminder of the very first encounter I had with auto/pedagogy, even though I was not aware at the time of what it was. Gallwey (e.g.

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<sup>50</sup> The issue of the reliability or not of memory is addressed by references to both the work of Green and Gallwey (1986) and Natanson (1970)

1986) has made a substantial fortune out of acknowledging the powerful phenomenon of memory and its influence on our ability to perform in a range of human activities. In partnership with Green (1986), he shows this clearly in relation to the ‘inner game of music’,

“I’d like you to go back for a moment and take a look at the most painful and unpleasant musical experience you ever had. Even if it happened years ago, you may still have a very vivid picture of what happened – the tension in your body, and even the conflicts that were taking place in your head. It is likely to be an event that is engraved in your memory with surprising clarity, and you can probably describe it easily.” (Green and Gallwey, 1986 p. 25)

This insight I share, since I will never forget the concert I was to perform in as an 11 year old playing the piano. I was not rehearsed sufficiently, I didn’t know the music and I made a complete hash of it – I know this viscerally as well as cognitively! As a profound learning experience it is of great significance and to this day I have always been prepared for ‘public’ performance to the best of my ability - having now read and understood critical incident theory (Jasper, 2003) I evaluate that concert as a critical incident. Green and Gallwey point also to the influence of positive experiences as models to use when seeking to play an inner game with oneself before performance,

“The hundreds of musicians that I have spoken with – soloists, orchestral players, young students and seasoned sessions men –almost all find it very difficult to remember much about the times when everything went well. They were aware that things were falling into place, and they remember feeling exhilarated and delighted.” (Green and Gallwey, 1986 p. 25)

Pointed to here is a phenomenon experienced unconsciously by classroom teachers and lecturers everyday – the delivery of ‘good’ lessons. Those who are reflexive professionals as well, will also point to those formative experiences where they ‘know’ things have gone less well. Learning from those events, and preparing to avoid repeat ‘performances’ might be described as the ‘inner game’ of teaching. In the hundreds of conversations, I’ve had with teachers over the 20+ years of unconscious engagement with this exploration, one thing I have learned anecdotally

is that, in the use of ICT in teaching, we've all had that profound experience of it not working or a spectacular crash in front of our pupils or students - a truly critical incident. Mental rehearsal, deep preparation and testing of the equipment before hand, are just some of the ways in which colleagues play the 'inner game' of teaching with information and communications technology. For others, the mental block, the 'self-interference' (Green and Gallwey, 1986 p. 25) or the assumption of technological breakdown caused by powerful experiences of ICT exposure make them resistant to ever trying to use technology again. My point is, on reflection, that the illustrative moments came to the fore as candidates for inclusion in the auto/biographic case study because of the profound professional learning that they caused. They were every bit as formative as 'that' moment as an age 11 performer or 'that' moment when I was presenting on the Building Schools for the Future programme in 2008, to the National Association for the Advancement of Computers in Education (NAACE) conference and the whole ICT system crashed.

The short excursus into the 'inner game' of ICT above, has been conducted to support my argument that, even though some of the illustrative moments for this study occurred some time ago, their influence on my learning was profound, the insights gained significant and the impact on my career incontrovertible. Not only do I 'know' what happened, I can recall what I was feeling at the time and thus the changes to myself that occurred.

### **Categorising Time**

I realise now that it is appropriate to describe the accounts provided in the appendices (2-6) as reports at one stage removed from the actual experience. This was reinforced by reviewing the handwritten journal that I had kept of the New Zealand trip. If this was to be categorised as an equation, it might be represented as  $a@t_0$ , rendering the theoretically-imbued accounts as  $a@t_1$ .

My first pass of each IM against the framework, becomes,  $a@t_2$  under this method.

Sequentially, therefore, re-visiting each IM in the context of the theory produces an equation  $a@t_3$ . In one sense this could be described as a 'learning chronology' for the study which could be argued to be important given the historical distance between the first and last IMs. Support for such codification comes again from Polanyi's work:

"Supposing we observed the motion of the planet from the earth, it would suffice to know its longitude ( $l_0$ ), in order to compute any pair of longitudes ( $l$ ) and elevation ( $e$ ) for any other time( $t$ )." (Polanyi, 1962 p. 19)

Moreover, application of these two analytical tools in a systematic and consistent manner will provide considerable rigour to the study through the act of consciously differentiating between first hand accounts of events and structured reflection on them, with all the potential challenges of distorted memory or perception as alluded to in the work of Solowski (2000).

The point is that the IMs at  $a@t_0$  or  $a@t_1$ , felt significant, but their full meaning, in my autobiography, may only be realized in this self-conscious act of reflecting on them systematically.

"Sources for reflection can therefore come from any experience we have had, and we can learn from things that have gone well just as effectively as from negative experiences. In fact, the reason that we tend to dwell on things that go wrong is that for most of the time everything in our lives goes well, and we take this for granted!" (Jasper, 2003 p. 14)

So, it is my intention to approach the IMs using a self-reflective method, where I begin to examine the impact of these events on my professional development and identity. I believe this to be consistent with the dialogical-hermeneutic method of theologians of liberation (Gutierrez 1970, etc) and redolent of Schön's (1984) work. There are two important aspects of this activity. The first is the holding up to self of a mirror, in order to look at the transformative impact of experience(s). The second is the impetus for action that arises from a critical appraisal of circumstance (Gramsci, 1971). At a theoretical level, one of the ever-present factors that caused me to select the five IMs, was the 'imperative to action' therein. Gramsci (1971) and others

have referred to this as *praxis*. West (2004) refers to this as *reflexivity*. Reflection does not necessarily cause action; the returned image may be, after all, pleasing. Reflexivity, on the other hand, demands action leading to change.

The dialogical-hermeneutic aspect of this work comes about through the act of evaluating each IM against some of the theoretical models and principles presented in the literature. This requires showing the dynamic and cyclical interaction between theoretical knowledge (i.e. that which has been gleaned from reading and other forms of study) and practical experience in the detail of each account. Metaphorically, therefore, this is an exercise in exploring the vertical structure of something akin to a bean growers' 'wigwam' - metaphorical treatment and explanation of this is to be found in the next section 3.2. It will need to be repeated for each of the IMs to ensure intra-judge reliability.

### 3.2: The relationship of my epistemology to my methodology

Whitehead and McNiff were helpful in reminding me that my ‘methodology will in turn be influenced by your ontological and epistemological assumptions’ (2006 p. 23). This renders the quotation from Donald Rumsfeld (February 12, 2002) at the start of chapter 2, even more powerful and less foolish than most commentators would appreciate. When it is acknowledged to have originated in the work of the epistemologist, Gilbert Ryle (1900-1976), it is an even more convincing assessment of the state of a person’s knowledge.

“Ryle explains that some people understand knowledge as an empirical object of rational enquiry, that is, it can be understood by adopting a spectator approach, as a spectator analyses a play from a distance.” (Whitehead and McNiff, 2006 p. 33)

In the context of the war in Iraq and from the perspective of the Pentagon, Rumsfeld was quite right to acknowledge that from where he was standing and observing the theatre of conflict, he did not know what he did not know.

In the context of my career spectating, however, has never been an option. On the contrary, I have had to build my knowledge base through my own self-directed learning and the necessary interactions I established with peers and other pedagogical agents. My epistemology is closer to the inductive end of the spectrum and is certainly socially constructed.

“The epistemology of a social constructionist perspective thus demands that researchers do whatever they can to approximate an understanding of the life-world of social actors as they themselves understand it. It requires more than accurate reportage of the insider’s perspective, however. It demands that, as we seek to understand a social phenomenon, we must also recognize the importance of the larger social context in the construction of individual’s interpretive practices. This requires some grasp of the historical background of the phenomenon under study, as well as a recognition of the political and economic relationships within which sense-making takes place.” (Goodson and Mangan, 1991 p.11)

Whitehead takes this a little further, ‘developing the idea of living theories’ (Whitehead and McNiff, 2006 p.32). With McNiff he argues

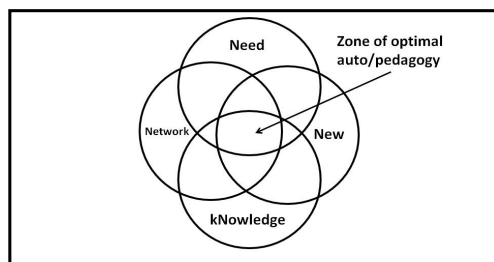
“As we practise, we observe what we do and reflect on it. We make sense of what we are doing through researching it. We gather data and generate evidence to support our claims that we know what we are doing and why we are doing it (our theories of practice), and we test these knowledge claims for their validity through the critical feedback of others.”  
(Whitehead and McNiff, 2006 *ibid*)

There is a direct correspondence with Gladwell's description of learning set out in section 3.1.4.

'We create a theory' (Gladwell, 2006 p. 9). My theory is that there is a phenomenon which I choose to call auto/pedagogy which is evinced in the reflexive narratives of my own case history or auto/biographic study.

The five illustrative moments of this study are the stories of my unknowing practise of auto/pedagogic activity. Reflexively analysing them is an attempt to make meaning from them in the context of the emerging framework for auto/pedagogy.

To explore the framework further, a research method was necessary which would enable me to analyse critically the core aspects, which I am now choosing to call 'learning factors'. The auto/biographic approach enables me to reflect on the illustrative moments as occasions when there was an overlap between these represented here by an adjusted Venn Diagram:



**Figure 17: Ns as a Venn**

I would argue now that an auto/pedagogic 'moment' is dependent on all four factors being present at once. They are inter-related and co-dependent. That is not to say that learning, which

is represented here as the outcome of auto/biographic activity, can only occur when all four factors are present, it is just that in my career learning has been optimal when they are.

The reason why I have placed 'auto/pedagogy' graphically at the bottom of the diagram in figure 12 (above) is because, I believe now that a catalyst for such behaviour could occur at any stage of this process. It might begin with reading, it might begin with reflection, it might even begin with activity that, at first sight, appears completely unconnected. Take for example one of the great catalysts of this whole project - the discovery of an online text version of John Stuart Mill's *'On Liberty'*.

It was in trying to track this down for use with V1th Form students that I suddenly realized the possibilities afforded to RE Teachers by access to the internet. In figure 18 can be seen a screen shot of the cover of a more, though still electronic, recent version of the same document.

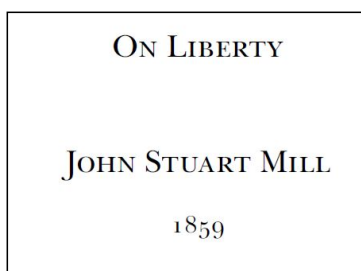


Figure 18: 2011 PDF version

It is worth comparing the above version with the simple text based version that I stumbled across around 1996 (figure 19). The point is that I knew there was a text that was relevant from my philosophical training. I had also just discovered, 'the information superhighway' as it was known at the time and then I found my way to this very useful resource for

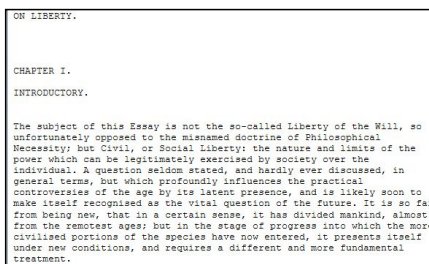


Figure 19: Simple .txt version

teaching. This was a discovery of great significance in the context of an RE teacher trying to provide first hand sources to A Level students on a thin budget. In terms of my career and this



thesis, it has acquired even greater significance. Clearly I had a need. I also had some prior knowledge, if only in terms of the syllabus for the course. For the first time on this occasion, I was able to exploit a virtual network - the internet - to solve the need. Moreover, it was the "what if?" questions that from flowed from this moment that were most significant. I wondered, "what if...?" Kant's *Critique of Pure Reason* was also available; "what if...?" the Bible was also available and so on. Thus, I began to apply this new knowledge in the context of research and discovery of a range of online sources.

The emerging framework for auto/pedagogy was once described as being like a bean-growers' scaffold with its feet firmly planted in the metaphorical ground of the literature and then reaching up to converge at an apex. The term 'scaffold' has been deliberately used here to locate the work back to the constructivist insights of Vygotsky (1954, 1978), so important to understandings of pedagogy in the 21st Century. It is possible to argue that it is at that apex that learning occurs. This in keeping with the zone of optimal auto/pedagogy as indicated in figure 12. To show this graphically, the next diagram is offered:

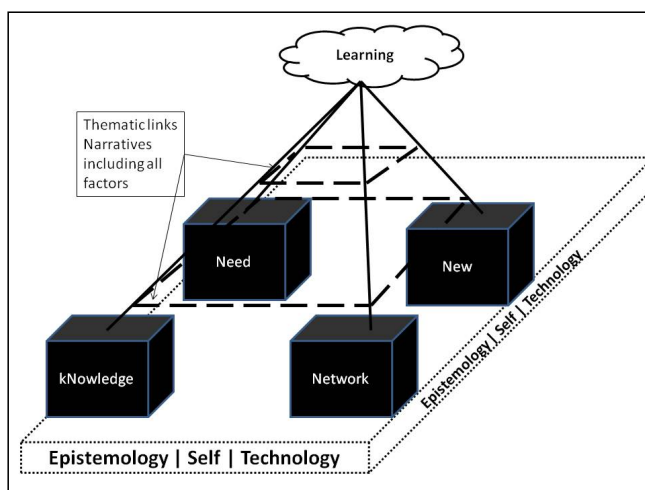
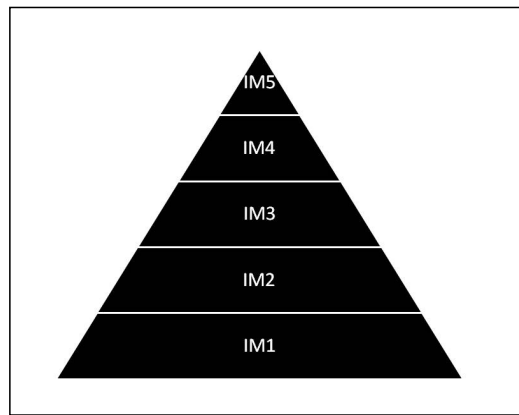


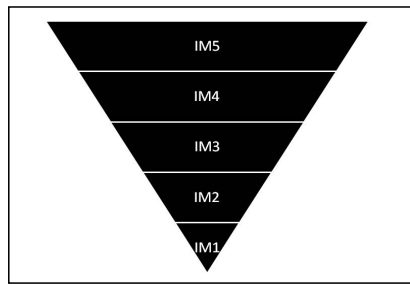
Figure 20: Bean grower's framework

In this metaphorical presentation the literature becomes the bedrock on which the framework is established. The 'N's are the upward reaching 'legs' of the structure rooted firmly on this bedrock. Added in here are 'cross ties'. These are the narrative accounts of the illustrative moments, in this instance, which evince in all cases the four learning factors (exploration of this horizontality is found in section 4.3). The framework is meaningless without them and yet they are only meaningful themselves in the context of this framework. The diagram would have become cluttered if I had added all five IMs as cross ties in my attempt to make it three-dimensional, in keeping with the phenomenological principles outlined in section 3.1.2. So added here is a two-dimensional variation to make the point:



**Figure 21: Cross ties in two dimensions**

Given the greater level of self-consciousness about this process by the time I got to the fifth IM, the discovery of *i*<sup>n</sup>PD, it would be more appropriate to represent the size of the significance of that moment, relative to this project by the inverse of this triangle, thus:



**Figure 22: IMs in due proportion**

However, it is the convergence of all the upward pointing legs that is the most significant aspect of this framework.

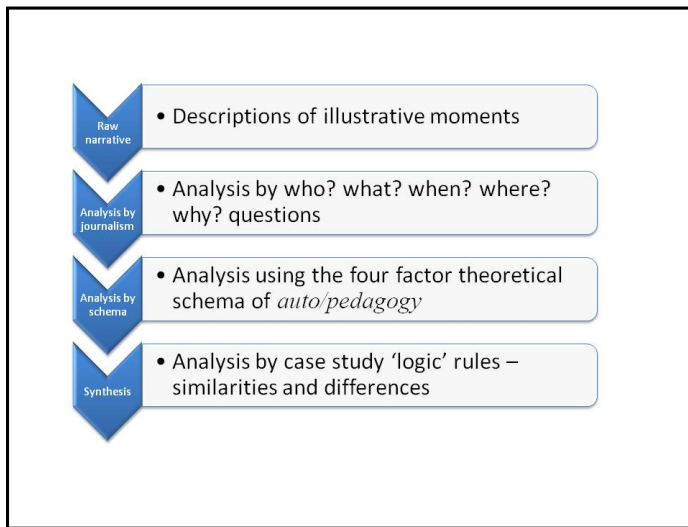
To use this theoretical framework in a way that derives meaning, it is necessary to narrate the illustrative moments in two directions:

- horizontally - as if describing the cross ties that hold the structure together (See 4.3)
- vertically - so as to illustrate how each learning factor is evinced through them (See 4.4)

Having narrated the IMs as theoretically-imbued accounts (presented as appendices) see section 4.1, it will be necessary to re-visit them, indicating the consistent aspects each has when set against a more traditional journalistic framework, i.e. who?, what?, when?, where?, why? This will feature as section 4.2. Following that an auto/biographical exercise will occur which will look at the evidence each has of the learning factors or 'N's. This activity will be set out in section 4.3. Section 4.4 will then address each aspect of *n*-ness thematically across the IMs, so that need will be addressed systematically, followed by prior knowledge and so on.

### 3.3 A narrative account of the methodology

The purpose of this section is to set out in narrative form a description of the methodology that will be applied to the analysis of the 'raw' research objects that have been created by simple recall of events across the twenty years in focus. These objects are known as illustrative moments, referred to as IM1-5. The following graphic represents the structure and linear chronology of this methodological approach; descriptions of the activities in each phase are provided below.



#### Stage 1: Narrative Descriptions of the Illustrative Moments

At this stage of the process, straight narrative accounts of the pre-selected illustrative moments are presented, in so far as that is possible. In reality, these are theoretically-imbued accounts of the IMs, selected because of their potential to illustrate aspects of the hypothesis that the research is seeking to explore. Pilot IMs, seemed to confirm that new knowledge might be generated by the interactions of knowledge, self, and technology, thus autobiographic moments

were selected which seem to provide the appropriate context or possibility of relevance. Writing about my experiences of being a Crystal Palace fan might be interesting but would contribute nothing to my knowledge or understanding of auto/pedagogy or my professional learning *per se*. So it is important to acknowledge again that the IMs are selected because of their potential to illustrate the theoretical framework for auto/pedagogy but also because they are helping to shape that theory. In that sense they are test and outcome combined, rather like Apollo 11 being the actual rocket that took mankind to the moon as well as being the exploratory device that tested the possibility. This stage is to be seen as rather like Goodmans' (1988) first level reflection (see Jasper, 2003):

"This expects your work to be largely descriptive, where you concentrate on getting down the basic facts of what happened and show some awareness of what was going on at the time. Goodman suggests that at this level you will be reflecting in order to reach given objectives." (Jasper, 2003 p. 72)

### **Stage 2: Journalistic analysis**

Having now written 'raw' accounts of the selected IMs, it is possible to acknowledge that they were produced by a simple recall method. I recounted them as if I were in dialogue with someone asking me, "what happened?" In this next stage, therefore, the intention is to organise these accounts into a coherent pattern so that correlative features start to emerge. If it appears to be the case that patterns are emerging, it may then be possible to re-visit the theoretical underpinnings of the study in an attempt to bolster the rationale for it and strengthen further claims as to the likely reliability of the study.

The choice of the term 'journalistic analysis' is a deliberate attempt to signpost further the retention of the descriptive level of the approach at this stage. Journalists, reporting events, follow a methodical pattern with the intention of drawing their readers/audience as close to them as possible but stop short of coming to conclusions themselves. These are left for the

readers/audience to draw for themselves. Thus they ask questions like “Who was present?” “What happened?” “When did it happen?” “Where did this occur?” “Why might it have happened?” A forensic scientist, at the scene of a crime will get even closer to the detail and will report the findings of their research. Whether or not a crime has occurred is a question that is left to judge and jury. Here the organisation of insights is being undertaken to establish whether there is a case to be made for the existence of the postulated phenomenon of auto/pedagogy. Are there factors that specifically contribute to a moment in auto/pedagogy? Are they always required? Could the phenomenon occur without them? What is the specific role played by my self in this context? Would auto/pedagogy have emerged without my specific contribution and so on?

Analogously, was the discovery of auto/pedagogy contingent on the particular conditions, the pre-dispositions of the discoverers or was it a phenomenon waiting to be discovered just like the penicillin of Fleming’s famous ‘accident’?

“One of the most important medical advances in history began by accident. On the morning of September 3rd, 1928, Professor Alexander Fleming was having a clear up of his cluttered laboratory. He was sorting through a number of glass plates that had previously been coated with staphylococcus bacteria as part of research Fleming was doing.

One of the plates had mould on it. The mould was in the shape of a ring and the area around the ring seemed to be free of the bacteria staphylococcus. The mould was penicillium notatum. Fleming had a life long interest in ways of killing off bacteria and he concluded that the bacteria on the plate around the ring had been killed off by some substance that had come from the mould.” (Trueman, 2010  
[http://www.historylearningsite.co.uk/alexander\\_fleming\\_and\\_penicillin.htm](http://www.historylearningsite.co.uk/alexander_fleming_and_penicillin.htm))

### **Stage 3: Analysis by theoretical framework**

This stage is redolent again of Goodman's (1988) framework - in this case second level reflection - as set out by Jasper (2003 p. 73). She writes,

"You will be using theoretical concepts to explore and explain what has happened, and to provide you with further insight and understanding. In short you will be creating your own

knowledge base by applying theory to practice, and considering theory in the light of practice." (Jasper, *ibid*).

I like this description since it resonates well with the dialogic nature of Gutierrez's hermeneutic circle.

At this third stage of my process (and please note that my second stage is different to that of Goodman (1988)), the intention is to re-visit the raw narratives arranging them according to the four factor model that is the principal object of this research project. This model has remained fixed in the process for some time now and is re-presented here for ease of access:

**Table 4: The four factor framework**

Factor	Description	Code
1.	A self notes that it has a self-referential reason for study,	N <sub>1</sub>
2.	The self utilises its prior knowledge, skills or understanding to access appropriate digital learning resources	N <sub>2</sub>
3.	The self actively participates technologically in the social co-construction of meaning through focused and relevant communities of practical or professional enquiry (after Wenger, 1998; 2001 – see Smith, 2003)	N <sub>3</sub>
4.	The self critically evaluates these episodes and is able to apply new synthetic understandings in relevant practical or professional contexts.	N <sub>4</sub>

Thus it might be appropriate to arrange the data using a table such as the one below.

	Evidence of need	Evidence of knowledge	Evidence of networking	Evidence of new activity
Illustrative moment 1				
Illustrative moment 2				
Illustrative moment 3				
Illustrative moment 4				
Illustrative moment 5				

The table above was constructed at a moment in time and I wish to make two reflective observations about it. First, I constructed it while I was trying to demonstrate the 'scientific' nature of my study and had fallen into what might be termed the quantitative fallacy. By this I mean that it is fallacious to tabulate things for the sake of it when they are not in keeping with the research values that underpin the work. Second, it was constructed before I fully appreciated Whitehead and McNiff's (2006) work which eschews such scientific practice and yet remains appropriately coherent, epistemologically sound and appropriately theoretical. I leave it in the text as an historical artefact and as a benchmark against which to show the distance travelled in my thinking and writing. It is left blank deliberately to signify the potential but also to represent the provisionality and necessary incompleteness of the task (see McDonagh, 1979 and Whitehead and McNiff, 2006).

That Newton was able to replicate the falling of an apple, gave rise to what is now seen as the fact of gravity. Arranging my data to show similar replication of factors, contexts and circumstances is specifically intended to increase readers' confidence that the hypothesis is worthy of consideration. Gravity remains a phenomenon that can be experienced even if it has no empirical characteristics; the hypothesis of auto/pedagogy can be similarly described – though yet to be proved. This approach finds support again in the second level reflection advocated by Goodman (1988),

"Goodman suggests that reflection at this level shows awareness of the implications of both personal and professional values in addition to identifying the rationale and evidence basis of actions taken." (Jasper, 2003 p. 73)

Whilst helpful in shaping these reflections, I demur from Jasper at this point since my framework also signifies the need to take action, not just reflect on what has been 'actioned'. This is the imperative of *orthopraxy*, as opposed to orthodoxy - in professional terms.



Moreover, her account of Goodman's third level of reflection takes reflective practice in a different direction. She notes that,

"... this takes the reflective activity one stage further by relating the parameters of care to societal norms and constraints, such as health policy, health economics and resources."  
(Jasper, 2003 p.75)

My work is more concerned at the next stage of reflection by looking at the 'logic' that underpins the IMs. In some ways it is contrastingly introspective by comparison with Goodman via Jasper's extrapolation to the bigger picture. In short, my fourth stage is designed to help me find out more about me than to find out more about them.

#### **Stage 4: Analysis by case study 'logic' rules**

Despite the positioning of this work at the qualitative end of the continuum of research methodology, it draws support for its claims to validity from social science methods, one of which is the use of case studies. Although, the illustrative moments are not recorded in the manner and style of a traditional case study, they were subjected to the same rigorous investigative approach. The final stage of the research process was therefore the analysis of the five IMs to explore their:

- Coherence as a set of signifiers,
- Patterns of similarity and difference,
- Signification of underlying and enduring logic and,
- Likelihood of replication in other contexts, settings or with other people.