Designing a research agenda to examine the implementation of the Health and Physical Education Curriculum Standards Framework II

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Introduction

This paper documents an ongoing research project examining the implementation of the Health and Physical Education Curriculum Standards Framework II into Victorian secondary schools. The project examines the capacity of a scientific model (Bernstein's Pedagogic Device, to predict human behaviour during a curriculum reform. After a brief discussion on paradigms, two differing views of 'scientific' research, the 'classical' and the 'quantum' are presented. Throughout the remainder of the paper, examples from the research are used to show how adopting a 'quantum view' has affected the research agenda

Paradigms - ways of viewing the world

The term paradigm was first used by Thomas Kuhn who used it while outlining the terms of the scientific process. Kuhn suggested that, "one sense of paradigm, is global, embracing all the shared commitments of a scientific group; the other isolates a particularly important sort of commitment and is thus a subset of the first." p. 134).

For the purpose of this paper, paradigms are to be considered as being comprised of two general levels. At the global level, is a shared commitment by researchers to produce theories, laws, rules, models, concepts, and definitions. The research discussed here represents a subset of this paradigm as it choses to isolate the notion of 'concepts' from this global paradigm, in order to both position itself within the shared view while at the same time following a research agenda that aligns itself with the researchers epistemology. By focusing on concepts, the aim is not to produce facts, but rather offer an interpretation of what is observed during the investigation. While this approach may not be acceptable to all within the research community, would continued usage of a global lense, requiring researchers to produce rules, models and theories , be more applicable to for studying objects, or the people and events we are investigating ?

<u>The Scientific Revolution- A global paradigm is born.</u>

"Newton's theory of mechanics, which successfully explained the movements of all materials things (on earth and in the heavens) by a few simple mathematical laws, became a paradigm for all science to follow.

From the seventeenth century onwards, science acquired so much prestige that it became a part of the intellectual outlook of every educated person. ;p.79)"

While the roots of science and scientific explanation can be traced back to the Greeks, Stevenson (1991) suggests that systematic observation and experimentation aimed at testing old theories or developing new ones did not emerge until a period known as the

'scientific revolution'. From the seventeenth century, to the present day there have been ongoing research attempts to develop a scientific theory of human nature. What follows is a selective summary of Stevensons'(1981) Anthology of 'would be scientists of human nature' who attempted to validate their research by linking their methodologies and theories to mathematical and scientific concepts.

Both Rene Descartes and Baruch Spinoza drew from mathematics when explaining human nature. Descartes, an influential mathematician during the scientific revolution, represented the body and the soul of a human as two sperate entities. In his view the body was the site of all things physical that could be explained by deterministic, mechanical principles. While the soul, was the site of site of all the mental attributes. Also from the field of mathematics, Spinoza's prescription for achieving blessedness (freedom of the mind) was constructed around "axioms in the style of Euclid's geometry" Stevenson, (1981).

The varying fields of science have also provided thinkers with a host of intellectual outlooks for identifying a discipline that can be used to develop laws about human nature. David Hume utilised a Newtonian model when trying to study human phenomena using methods from physics. Edward Wilson, developed his understanding of the biological properties of whole societies by viewing societies through the lenses of ethology (the naturalistic study of whole patterns of behaviour) and ecology(the study of relationships of organisms to their environment) and genetics. Wilson uses this hybrid discipline he titled 'socio-biology' to put forward a position that genetic are the determinants of human nature (Stevenson, 1981). A similarly deterministic view is adopted in John Watson and B.F. Skinner use of behaviourist psychology, that suggests that human nature is not only developed but can also be controlled by adopting a scientific stimulus response regime provides further evidence of the role of the sciences in shaping our investigations on human nature.

While examples of scientific approaches are to be found, there were those who questioned the possibility of an exact empirical science of human nature. John Stuart Mill distinguished between exact and inexact sciences suggesting human nature (or psychology) could not be derived from physiology, and would therefore fall into the latter category. This position was

both supported and extended by Emille Durkhiem, who believed that the 'facts' of society could not be reduced to neither a physical fact nor a set of psychological understandings of individuals. Durkhiem, called for our understanding of society to be based around the collection of datum he calls 'societal facts, making him one of the founding fathers of sociology.

Despite this shift of thinking, evidence of a continued reliance on the scientific method can be found within Durkhiem's 'Rules of Sociological Methods

> *": What it [sociological method] demands is that the sociologist puts himself into the same state of mind as physicists, chemists or psychologists as they enquire hitherto unexplored region of the scientific domain. When he penetrates the social world, he must be aware that he is penetrating the unknown. He must feel himself in the presence of facts whose laws are as unsuspected as were those of life before the development of biology, he must be prepared for discoveries, which will surprise and disconcert him...*

Since these 'rules were established in 1895, social scientist have been designing research agendas to penetrate Durkhiem's unknown. Despite the adoption of variety of epistemological paradigms (positivist, constructionist and interpretivist) resulting in an even wider set of theoretical perspectives and methodologies, is it possible that some social-scientists still approach their research in the same state of mind as the physicists, chemists

and psychologists of Durkhiem's time. In an era of ever-growing uncertainty, can social scientists still expect to find the 'hidden laws' of Durkhiem's social world of the unknown or should they approach their research in a different state of mind.

Framing the research: Building a 'scientific' scaffold to interpret experiences.

We refuse to accept ambiguity and surprise as part of life because we hold onto the myth that prediction and control is possible(Wheatley,1999, p.101)

At the global level a paradigm represents the consensus of a community; "concrete problem solutions that the profession has come to accept." (Hoyningen-Huene, 1993, p.134). Stevenson's anthology(1981) had identified the 'acceptable' social research paradigm has its roots in traditional scientific method provided more recent validation of this position by suggesting that social scientists suffer from 'physic's envy'(seeking credibility for their research through links to mathematics and science). Conversely, the literature shaping my investigation (Wheatley, 1999;;Zukav, 1979; ; suggested you could neither predict human behaviour, nor construct a 'generic' frame of reference or model that was applicable to any situation. Consequently devising a research agenda, that was both acceptable to the research community and myself presented a challenge.

'Scientific' research looks at events with the aim of constructing a **complete theory** that can be used to predict outcomes in all situations once sufficient data is gathered In the case of my research the aim is to construct a **maximal theory** that leaves some questions unanswered, 'to be answered by experience' . While I was aware of the type of theory I wished to create, it was still unclear as to what the questions were along with what tools would be used to investigate the experiences.

Once again Crotty(1998) proved to be quite help in clarifying this issue. He suggests that before embarking on research it is necessary to plan the experience using a scaffold of a compatible epistemology, theoretical perspective, methodology and research methods in order to ensure the soundness of the investigation.

The base of this investigation began with a research method. This represents the techniques or procedures used to collect data. In this instance it was easily formed, as the methodology I had chosen to replicate , had a structured set of tools that included questionnaires, surveys, open-ended statements and interviews.

The next layer of scaffold is the research methodology that represents the strategy or action plan. This methodology, the Concerns-Based Adoption Model (CBAM) was the approach used by Marsh(1987) to conduct a similar investigation into the implementation of a curriculum in an Australian primary school.

The remaining two layer of the scaffold proved to be the most challenging to identify. The theoretical perspective acts as a philosophical basis for the chosen methodology and research method. A quick examination of the survey tools, used to collect and graph statistical data on the sample would suggest a positivist approach had been adopted. However the literature I was using to inform the research seemed to contradict this approach. Kuhn spoke of scientific endeavour as a very human affair, a view far removed from the detached endeavours of scientist portrayed by positivism. He believed research methods to be neither totally objective nor unquestionably certain. The findings Heisenburg and Bohr (discussed in a later section of this paper) questioned the positivistic promises of an unambiguous and accurate knowledge of the world . In addition to this the intention of my research was not to present a positivistic complete theory that asked people to accept a fact. I was aiming to offer an interpretation that had been arrived at using a sound scaffold that

allowed the reader to decide upon the plausibility and applicability of its findings. Furthermore, in developing these findings, I was not attempting to link the teachers' experiences to some theory or fact, but sought to actively construct some sort of meaning from their experiences to inform the interpretation. Taking all this into consideration, in conjunction with Crotty's situating of these references in his descriptions of the varying perspectives, as well as the chosen tools and methodology, I came to the decision that the research would be based on a post-positivist perspective.

As with the methodology, the identification of a theoretical perspective had determined the epistemology of my research, however at this level , the challenge in justifying this position was much greater. One interpretation of objectivism is that within the world there are things which have an inherent meaning, not dependent upon the consciousness of the researcher, that can be discovered by using scientific research . In a similar fashion I too was using a sound scientific approach to look for the presence of meaningful influences, currently outside my consciousness, affecting the way teachers implemented the HPE C&SFII. However in this case, certainties are not promised, instead a research-based meaning is expected to be 'constructed'. Similarly, this researcher claims a degree of objectivity rather than absolute objectivity.

Having established a scaffold of assumptions that have guided the design of the research, the remaining sections will describe the research process to date. In a similar fashion to Hume, physics will provide a framework for the account, however here it is used as a metaphor rather than a set of rules and laws that act as a link between the observed and theoretical worlds. The terms 'classical' and 'quantum' physics will be used to distinguish between these two approaches. The term classical physics will refer to a positivistic view of physics that promises absolute certainty in its findings and objectivity from those conducting the research. Conversely, the term quantum physics will reflect a post-positivistic approach that is more modest expectations about the certainty and objectivity of the research and the researcher.

The Epistemology of Wu Li

Most people believe that physicists are explaining the world. Some physicists even believe that, but the Wu Li Masters know that they are only dancing with it. , p.32)

At an Esalen Institute meeting in 1976, tai chi master Al Huang introduced the audience to the Chinese word for physics, *Wu Li*. He then went on to explain that as with many languages, in changing the pronunciation of the word you can alter its meaning. In the Chinese language there are over eighty different meanings for the word Wu. In explaining Wu Li, Huang utilised 5 different Wu's to create a rich metaphor for explaining physics:

Wu Li = Patterns of Organic Energy

Wu Li = My way

Wu Li = Nonsense

Wu Li = I clutch, ideas

Wu Li = Enlightenment

In the following sections these concepts will be used to discuss the investigation into the implementation of the Health and Physical Education Curriculum & Standards Framework II into a Victorian Secondary School.

Wu Li = Patterns of Organic Energy

We all construct the world through lenses of our own making and use these to filter and select.... Every act of measurement loses more in formation than it gains p.65)

Auguste Comte coined the term sociology along with its predecessor 'social physics'. He has also been described as the populiser of Positivism. Keeping with the physics metaphor, it is possible to draw parallels between schools of thought within physics and social physics.

Classic physics views the world as being one that is fixed, can be investigated by scientists independently and where the physical reality can be where each physical reality can be explained by an element in theory . The aim of this approach it construct a complete theory that predict outcomes in all situations once sufficient data is gathered. If this is not achieved then the research is considered incomplete.

Similarly objectivism believes that things subsist as meaningful bodies independent of consciousness and experience that they have truth and meaning residing in them, and that scientific research can result in accurate and explicit knowledge of the world. It is characterised characterized by an emphasis upon science and scientific method as the only sources of knowledge

In the early stages of the research this project was shaped by this approach. Before commencing the following argument and research question were developed to provide a focus and a justification for the research:

a. If a pedagogic device is used by its producer to control the thinkable and unthinkable for the realizers of the discourse
b. And the HPE C&SFII provides educators with a framework that outlines the unthinkable and the thinkable for them in terms of curriculum
c. Then the HPE C&SFII represents a pedagogic device that allows its producers to control physical educators views of the thinkable and unthinkable in physical education curriculum

Question:

Does the HPE C&SFII represent a pedagogic device that allows its producers to control the views of physical educators in terms of the thinkable and unthinkable in physical education curriculum?

Bernstein's model for the production of a pedagogic device provided the scientific foundation for the agenda. Using his concepts of pedagogic discourse production as a means for interpreting the documents and events surrounding the production of the National and Curriculum and Standards Frameworks it was possible to find examples that showed commonalities between Bernstein's theoretical model and the 'reality' of the curriculum reform. Even when Bernstein's model provided only a limited explanation on how the 'International Field' influenced the production of the discourse Pusey's 'Economic Rationalism' model was used in a supporting role. In an 'objectivist' tradition, I had been able to 'selectively view' events and documents in a way that reinforced the Bernstein model as an accurate view of the process. Furthermore, all of this had been possible without having been involved with either the 'production' or the 'reproduction' of the 'discourse'. However, once the attention shifted to the realization of the discourse, problems with this approach did surface.

"The realizations of such a device will maintain and reproduce a power-knowledge-consciousness distribution irrespective of whether the dominant principles of a given society celebrate (Bernstein, 1993, p.203)

The Bernstein model suggests that the societal members regardless of the dominant principles will realize the official pedagogic discourse. In the case of the investigation the model was predicting that physical education teachers would replace their current curriculum with the HPE C&SFII. While there was no documented research to refute this, a South Australian case study citing physical educator resistance to their new Standards and

And this point I revisited the 'production of the HPE C&SFII. By replacing the classical view with a quantum perspective, as result I saw the curriculum process as dynamic, relative to the different school settings and being shaped by a set of interconnecting influences within the 'Living System' of each school. It also allowed me to be content with unanswered questions as I viewed the first two phases of the Bernstein model as a maximal theory that required an experience to see what happens in the realization phase.

As I planned the research I chose to shift my theoretical perspective from Positivism to Post-Positivism, as the predicted certainty of the pedagogic device was not apparent. It is important to note that this shift did not represent an abandonment of the positivistic research tools, however it did translate to more modest expectations about the 'certainties' they would uncover.

Wu Li = I clutch my idea

Mandelbrot's seminal fractal exercise was a simple question posed to colleagues and students: "How long is the coast of Britain?" As his colleagues soon learned, there is no answer to this question. As we zoom in, there are more and more details to measure. Creeping along the coastline, even if we choose to measure every rock on every outcrop, there would always be more to measure at even smaller levels of scales (Wheatley, 1999, p.124).

Like Mandelbrot, I too was faced with deciding upon a feasible scale and depth to the research. Within the literature there were incidences of highly elaborate models being constructed to explain influences on curriculum reform. Science tells us that a greater understanding of the factors involved in the reform process will lead to a more efficient approach to achieving the reform (Wheatley, 1999). Conversely, the literature suggests that despite ongoing federal and state level reform efforts, there has been little or no change to traditional practices in physical education ,. During a famous argument between Einstein and Bohr, Einstein argued, Alas our theory is too poor for experience" and Bohr replied, "No, no! Experience is too rich for our theory"(Zukav, 1989. Considering these arguments, some possible assumptions could be that increased depth of investigation does not necessarily equate to a more effective approach to curriculum reform. Additionally, in some instances the experiences we are observing are simply too rich for any one theory.

Someone said that one definition of insanity was to keep doing the same thing and expect a different result . Consequently, I needed to embark on a research strategy that had been validated within the research community while at the same time did not attempt to study a reform in minute detail in order to predict or streamline the reform process. Like Bohr, I chose to accept that failure to link every finding to a theoretical counterpart does not equate to incomplete research. Instead, the aim of the research was to obtain insights (or 'theorize'- into how teachers were implementing the HPE C&SF curriculum rather than to construct a theory or model that could be used to predict teacher behaviour during a reform.

This on-going research project utilised the theory and methodology of the Concerns Based Adoption Model (CBAM) . This method was primarily chosen on the basis of the high degree of similarity between the literature utilized and CBAM's assumptions of educational change.

CBAM ASSUMPTION	RESEARCH ASSUMPTION
Change is a process and not an event	Change will not occur simply because administrators within a system decide to implement a 'pre-packaged' innovation
Change is highly personal	The realization of the pedagogic will be affected by the dominant ideologies of the society
Change involves development and growth	Change involves evaluation and modification of the innovation by those responsible for its implementation
Change can be facilitated by individuals	It is the individuals involved in the steps, between the release of a curriculum in schools and the evaluation of its effectiveness, that determine the effectiveness of an innovation.

Table 1 Comparison between CBAM and Research Assumptions.

Apart from the similarities outlined above, CBAM was also chosen for its acceptance within the research community. Anderson (1997) describes CBAM as the most robust and empirically grounded theoretical model for studying the process of implementing educational reform by teachers and change facilitators.

CBAM assumes change is lengthy and personal. It views change from two perspectives: Stages of Concern (SoC) and Levels of Use (LoU). Stages of Concern represents a possible framework of progression that describes the feelings and motivations a teacher might have about a change in curriculum practices at different points in its implementation (Anderson, 1997). It employs a seven-stage scale, although it is acknowledged that not all teachers develop their teaching practices to address all of these concerns . Tools for measuring this scale include a SoC Questionnaire (35 items) supported by an open-ended statement.

LoU describes teacher attitudes about implanting the innovation. Like the Stages of Concern framework, it is organised into levels, however in this framework progression is marked by decision points (used to assign overall LoU) and corresponding behaviours across eight different domains describing a characteristic of the user (Anderson, 1997). Semi structured interviews are used as LoU is too complex to assume the same things mean the same to each participant . Loucks et al. (1998), suggest that interviews have a distinct advantage over observation in terms of efficiency. Furthermore they believe that while the openness of the interview leads to more true-life responses, there is sufficient structure to ensure that the incidence of misrepresentation in interviews is low, as questions, characteristics and responses are correlated.

In designing the research, the timeline was a crucial factor. Initially I had planned for the research to be conducted over two years to enable the staff a reasonable amount of time to

address their curriculum planning and teaching practices. However, deadlines put in place by school administrators keen to have completed the trailing of any intervention well before the next tri-ennial review meant that all research had to be completed within the year. As a result, initial data collection was completed by term 1, reporting of findings and the development of the intervention, by term 2 with the trialling of the intervention scheduled for terms 3 & 4.

During the negotiations concerning the research schedule, it was necessary to make the school administrators aware of the following points:

1. Individuals do not use an innovation for the first or second time as effectively as they do after the fourth or fifth cycle of LOU attempts
2. LOU data is often collected too early (after 1 cycle or term) which leads to inconclusive results.

As a result it was agreed that findings relating to the groups efforts in implementing the HPE CSFII should not be linked to school based staff performance appraisal programmes. Additionally, it was made clear that insisting on a time frame that allowed teachers to complete only two cycles of terms of HPE C&SFII implementations, the findings of the second set of interviews could not be considered conclusive

As a researcher aiming to continue working with school well into this millennium, my experiences with this current research leads me to believe, that apart from the traditional research design influences of epistemology, theoretical perspectives, methodology and methodological tools (Crotty, 1997), there will be an ever-increasing need for researchers to develop timelines that meet not only their requirements in terms of research vigour, but also meet the needs of the institutions and groups they are working with.

WU Li & Nonsense

To become effective at change, we must leave behind the imaginary organizations we design and learn to work with the real organization, which will always be a dense network of interdependent relationships. (Wheatley, 1998, p.144)

At the turn of the century within the field of classical mechanics ,the position on electro-magnetic fields was that they involved ' no object that they are not states of the ether medium but ultimate irreducible realities, p.497). About this time the view of quantum mechanics, influenced by the work of scientists such as Farady and Maxwell questioned this position by suggesting that the ether did exist despite the inability of physicists to detect it.

This shift in views directed their focus away from the observable to 'look behind the small discrete visible structures to an invisible world filled with mediums of connections.

In a somewhat similar fashion the a conscious decision was made to shift the focus from the 'theoretically' observable world of the Bernstein model to the invisible world of connections between the HPE C&SFII, the secondary school and the group of teachers I was investigating.

"When the door closes, that private world within a public school is an arena

for change worked through by teachers who are often alone and without

help. They revise the intended curriculum and produce the taught

one (Schwille et al., 1983)" in , p.231)

The Cuban quotation provides us with some insights as to what this 'invisible' world looks like. It suggested the possibilities of discrepancies between the 'intended' and the 'taught' curricula . Cuban's perspective questioned an assumption built into the Bernstein model, i.e. that practitioners will accept any 'produced' discourse uncritically. While both models had drawn on the literature to construct their arguments, only Cuban could provide a real-life case study to support his position.

Schoenhausen, a rural village in the south of Germany, was the site of a curriculum study on the effects of a mandated curriculum on the practices of the local teachers.

"For decades the school curriculum had emphasized the land, the village, community and family values. The federal and provincial ministries of education however mandated a new curriculum and textbooks based upon life in the cities, the importance of modernization, and high technology".

In 1968 and again in 1977, George and Louise Spindler examined the effects of the reform on the school curriculum. Upon their return nine years after the initial study they found that while the content of the curriculum had changed the values and goals promoting the villages traditions had remained. They explained this by concluding that "the way teachers taught and classroom order sustained village traditions in the face of curricula reform".

In presenting these two conflicting views the rational for the current investigation became even clearer. While parallels could be made between the production and realization phases of the Bernstein model and the curriculum process surrounding the implementation of the HPE CSFII, the absence of data concerning the realization of the official curriculum by physical educators makes it impossible to theorize about the final research premise:

That the HPE CSF represents a pedagogic device that allows its producers to control physical educators views of the thinkable and unthinkable in physical education curriculum.

In answering this question it is expected that it will be possible to determine whether or not the HPE CSFII does indeed represent a pedagogic device. Furthermore, it is anticipated that the Concerns-Based Approach Model employed in obtaining the data for this investigation will provide a framework for evaluating the implementation of the HPECSFII into Victorian Secondary Colleges.

Goodlad's (1984) framework of intended, taught and learnt curriculum was used to distinguish between the visible and the invisible In a system where success is measured by outcomes the outcomes for the learners are often the gauge for success. As Marsh (1987) suggested ' There seems to be an implicit assumption that the nature and quality of a new curriculum product or process automatically determines it s successful use in the classroom p.475). In questioning this assumption by investigating teacher implementation, I was investigating the space between the intended and the learnt; i.e. the taught.

I was searching for the presence of 'teacher' forces affecting the implementation of the HPE C&SFII. According to the Bernstein model such forces did not exist, however, other views did offer some insights. In a similar way to Bohr's notion of maximal theory, Jewett and Bains questioned the possibility of creating a complete curriculum theory that allowed people to predict outcomes regardless of the frame of reference. Instead they suggested when investigating curriculum, we are dealing with the professional judgements of teachers

therefore 'theorizing' is all that is possible. In the case of theorizing, prediction is replaced by insights, gleaned from the specific setting under investigation. The similarities between Jewett and Bain's and the Zukav's quantum notions, motivated to read more about the 'New Science' that was discussed in these books. Influential in the shaping of the research were the ideas of Margaret Wheatley outlined in her book "Leadership and the New Science' (1999).

Wheatley's book is devoted to applying concepts from the 'New Science' to achieve personal and organisational change. In particular her discussion of living systems seemed a feasible solution to the challenge my research had presented me. My study involved a group participating in a year of pedagogic change. This strategy had been prompted by concerns about their curriculum in terms of it providing students with opportunities to achieve the outcomes of the HPE C&SFII. In the past when the C&SF's were being implemented it had been suggested that teachers need not change their practices . Now, as the increased accountability being placed on the self-managing schools, it would seem that this previously discounted influence was now a subject for scrutiny.

My role was to assist the school with improving their performance in their next triennial review. Wheatley believes that if a system is ailing (or performing poorly) it needs to learn more about itself from itself. Possible causes in her opinion include: a lack of information; a lack of clarity about what the group is trying to do or troubled relationships. In the case of this school all applied.

As was previously stated, the investigation is employing the Concern Based Adoption model as its research tool. Participants initially completed a demographic survey, as well as a 35-item questionnaire about their concerns relating to their usage of HPE C&SFII. They were also given the opportunity to elaborate on and prioritise their concerns in an open-ended response. After analysing the result all of Wheatley's points were validated.

Teacher Number	Self-Assessment of Usage of HPE C&SFII.	Rating from results of Stages of Concern Questionnaire
1	Intermediate	Non-User
2	Novice	Novice
4	Novice	Non-User
5	Intermediate	Non-User
6	Intermediate	Non-User

Table 1: A Summary of comparisons between the self-assessments from the Demographic Survey with ratings resulting from the Stages of Concern Questionnaire.

Despite most teachers considering themselves novice to intermediate users (see Table 1) all indicated high-level concerns about their knowledge of the HPE C&SFII. When comparing the graphical profiles generated form their responses with the typical profile of a non-user

the two curves were almost identical, suggesting disagreement between their perceived and actual progression with the usage of the HPE C&SFII.

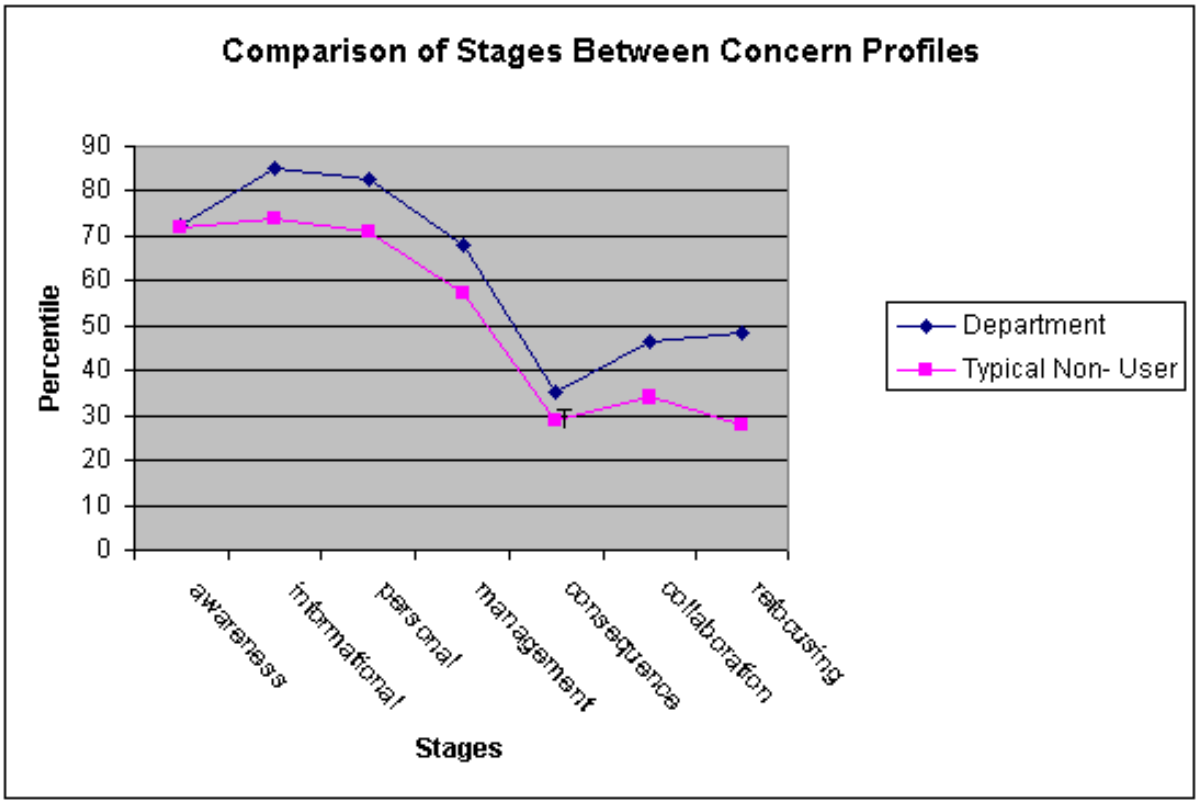

Figure 1 Comparison of Stages of Concern Profiles between Department and Typical Non-User

The graphical data also indicated some attitudinal issues towards the implementation of the HPE C&SFII. Loucks et al. (1998) suggest that the tailing up of a curve at the refocussing stage suggests the possibility of a negative attitude towards the implementation of the HPE C&SFII. The example below of an individual profile would suggest some strong resistance towards the innovation.

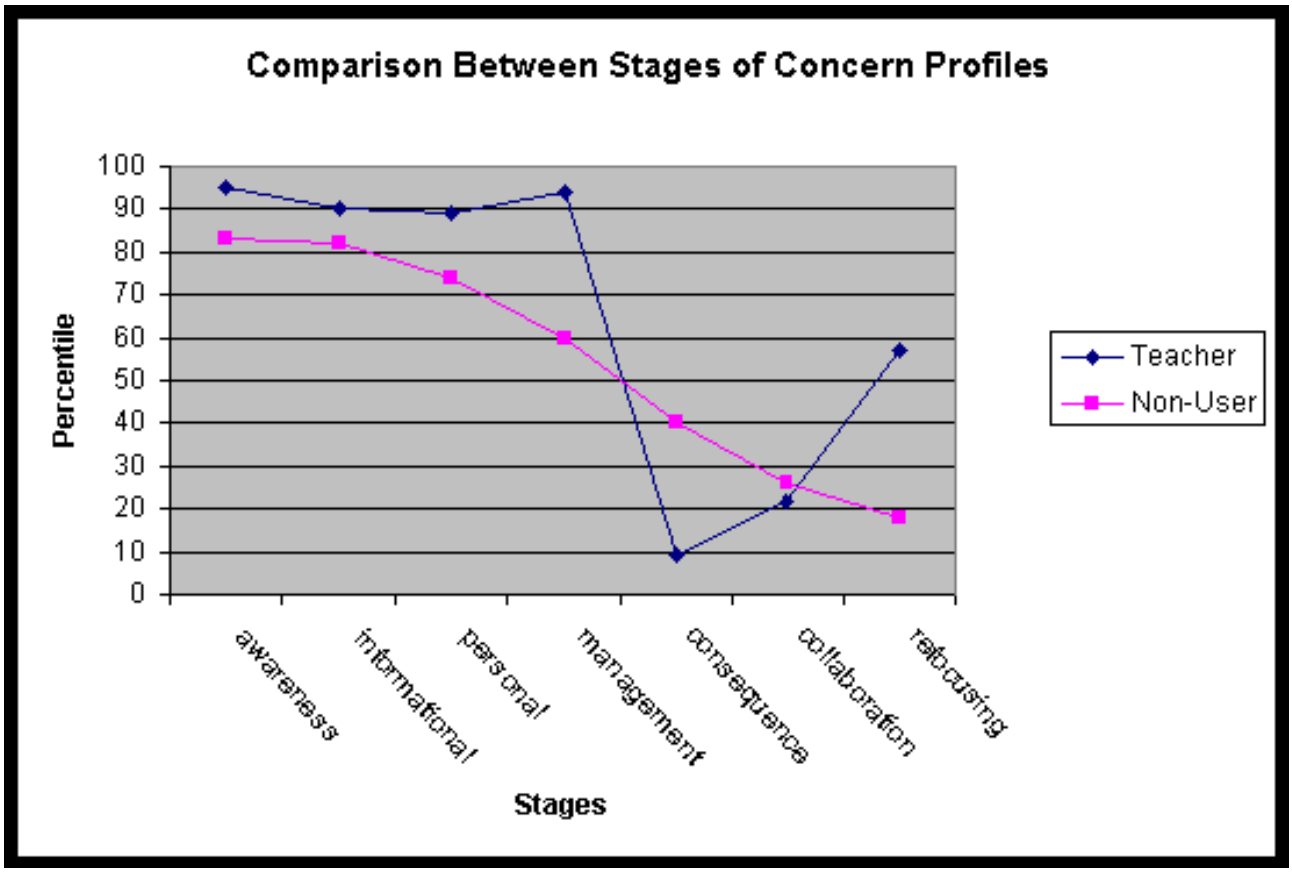

Figure 2 Comparison of Stage of Concern between resisting teacher and typical non-user

The presence of resistance within the faculty was verified by comments from the open-ended questionnaires:

"Is it [the HPE C&SFII] better?"

"Is there anything wrong with what we are doing now?"

"How do I know it is better?"

"Is it practical in a general teaching situation and specifically our teaching situation?"

"Is it more educational/political idealism?"

The teachers were also interviewed concerning their level of use of the HPE C&SFII. Before the interview stated each teacher read the definition of use of the HPE C&SFII:

1. That the curriculum had been divided into the three strands of the HPE C&SFII
2. That each lesson is clearly linked to one or more outcomes of the HPE C&SFII

Using the semi-structured format, the level of use of a teacher is quickly identified through a series of mostly yes or no questions. Within five to ten minutes it was possible to assign a numeric label to a teachers level of use along with letter grade that indicated the status of their decision-making in terms of usage. For the remainder of the interview, teachers were probed about various aspects of their usage of the HPE C&SFII. These issues ranged from individual attempts to find additional information about the HPE C&SFII to their efforts in collaborating with other staff to increase the learning outcomes for their students. As with the

SoC questionnaire, the self- assessment of most staff (with the exception of 1&2) concerning their level of use stated during the first part of the interview was much higher than the responses given in the latter part of the interview indicated. This contradiction highlighted a lack of clarity about what using the HPE C&SFII really meant.

Teacher Number	Level of Use identified at the Start of the Interview.	Decision Point identified at the Start of the Interview	Level of Use identified after probing individual categories representing Levels of Use	Decision Point identified after probing individual categories representing Levels of Use
1	Preparation	Has set a time to begin using the HPE CSFII	Preparation	Is working towards a starting date to begin using the HPE C&SFII
2	Orientation	Has taken action to learn about the HPE C&SFII	Is using the HPE CSFII on a daily basis	Is beginning to use the HPE C&SFII
4	Routine User	Has developed a routine pattern of use of the HPE C&SFII	Orientation about the HPE C&SFII	Is taking some action to learn about using the HPE C&SFII
5	Refinement	Modified the HPE C&SFII to increase outcomes for learners	Preparation for using the HPE C&SFII	Is working towards a starting date to begin using the HPE C&SFII
6	Routine user	Mechanical use of the HPE C&SFII	Orientation about the HPE C&SFII	Is taking some action to learn about using the HPE C&SFII

Table 1: A Summary of comparisons between the self-assessments at the beginning of the Levels of Use interview with ratings resulting from probing individual categories of use.

Returning to the Goodlad 1984 framework. If the success of the intended HPE C&SFII was assessed in terms of the learning outcomes of the year 9 students in the school, then these outcomes could be used to discredit the HPE C&SFII as a curriculum framework. However, by investigating Goodlad's (1984) notion of 'taught level', that 'ether' or space containing the 'invisible influences of teachers and their teaching of the HPE C&SFII, a premature scrapping of the HPE C&SFII may be avoided.

WU LI = My Way

A live cat is placed in a box. The box has solid walls, so no one outside the box can see into it. This is the crucial factor, since the thought experiment explores the role of the observer evoking reality. Inside the box, a device will trigger the release of either poison or food; the probability of either occurrence is 50/50. Time passes. The trigger goes off, unobserved. The cat meets its fate. Or does it? (Whealtley, 1999, p. 61).

Erwin Schroedinger used the cat problem to demonstrate that nothing in the quantum world was real. In designing the research agenda of this investigation, the cat problem provide the justification for the intervention currently being employed. When Marsh used the CBAM approach to examine the implementation of a Social Studies curriculum back in 1987, he chose not to include an intervention as part of the research. Instead he provided a workshop for interested teachers mid-way through the data collection to express his "gratitude to the principal and teachers for their involvement in the research. I did not intend the 2-hour workshop to be an intervention."(Marsh1987, p.484).

Like Marsh I too could have chosen to omit the intervention, however, in light of the Schroedinger problem it did not appear as a viable option. In comparing the closing of Schroedinger's box to the closed walls of the classroom described in the Cuban quotation, similarities between this research problem and Schroedinger's Thought problem did exist. If you consider the cat as a metaphor for the HPE C&SFII, like Schroedinger, I was left with two possible outcomes. If the Bernstein model's prediction was correct then the HPE C&SFII would have been would be accepted uncritically regardless of what physical educators thought. Alternatively, if the findings were more in line with the example of Schoenhausen the way teachers taught would sustain the traditions in the face of curricula reform". The preliminary data presented in the previous sections would suggest the findings to be more indicative of the latter. However in this instance the decision was made to utilise these results to develop an intervention strategy aimed at creating a reality within the physical education department characterised by the use of the HPE C&SF II

Loucks et al (1998) suggested that once variations in profiles exist, strategies need to be developed to address this and promote growth. In this instance most staff members has displayed high levels of concern in the areas of awareness, informational, personal and management issues. The interpretation charts suggest the following meanings:

- **Awareness:** Concerns about the HPE C&SFII and its implementation
- **Informational:** An interest in learning more about the HPE C&SFII in particular its characteristics, effects and requirements for use.
- **Personal:** Concerns about the demands of implementing the HPE C&SFII, this/her ability to meet those demands and the financial and status implications relating to successful/unsuccessful implications of the HPE C&SFII.
- **Management:** Concerns relating to scheduling, managing and time demands.

They also suggested that after 3-4cycles 30-40% are stable at level IV. Consequently, it was decided that the intervention would attempt to directly address these lower level Stages of Concerns to develop the faculty from 'Non-Users' to 'Experienced Users'. Additionally, during the planning of a workshop, key learning activities were included to promote the department's Level of Use with the aim of promoting their level of use from 'Orientation' to 'Routine Users'.

From the early stages of data analysis it was apparent that managerial issues were a major barrier to the implementation of the HPE C&SFII. As a result, in planning the intervention it was decided to minimise the need for high levels of management input from the staff

attempting to implement the curriculum initiative. Below is the suggested semester plan for the Term 3 of the pilot:

Semester Theme: Healthy Communities

Term 4	PE Prac 2hrs		Theory MPA	Theory HI&P/ S&R		Health Prac 2hrs.
Week						
1	A-H		A&B&C&D	E&F&G&H		A-H
2	A-H		A&B&C&D	E&F&G&H		A-H
3	A-H		E&F&G&H	A&B&C&D		A-H
4	A-H		E&F&G&H	A&B&C&D		A-H
5	A-H		A&B&C&D	E&F&G&H		A-H
6	A-H		A&B&C&D	E&F&G&H		A-H
7	A-H		A&B&C&D	E&F&G&H		A-H
8	A-H		E&F&G&H	A&B&C&D		A-H
9	A-H		E&F&G&H	A&B&C&D		A-H
10	A-H		E&F&G&H	A&B&C&D		A-H
11	Post Evaluation					

The pilot takes into consideration the teaching arrangements at the school. Currently the teaching of the Movement and Physical Activity strand is the responsibility of the physical education staff. The remaining two strands of the Key Learning Area (KLA) i.e. Health of Individuals & Populations (HI&P) and Self and Relationships (S&R) are the responsibility of the Home economics staff. Each group has a 100-minute practical session with the students as well as sharing a 50-minute time slot. Respecting the ownership each group has on their allotted time the intervention aimed to maintain the existing structure, however, the requirement for a structured theory lesson during the 50 minute session was introduced. This was an attempt to motivate teachers to address their informational concerns.

Providing staff with a complete implementation framework acknowledged concerns over management and awareness. Built into this framework was the requirement that staff teach two units per term. The use of a text that includes activities already aligned to the HPE C&SFII aims to both reduce the workload of staff while at the same increase their awareness of the requirements of the HPE C&SFII. Additional assistance in terms of management has been incorporated into the delivery of theory classes. In this instance rather than have each teacher prepare 4 theory units, it has been decided that each of the teachers prepare one unit using a common template to enable the units to be shared amongst all teachers of year 9. All students will use a common workbook to further assist in this area. The intervention

also attempts to increase the departments Level of Use. The table below outlines the various levels of use

	LOU Distribution		Decision Point
Level	Descriptor	Decision Point	Descriptor
0	NONUSE		
I	ORIENTATION	A	Takes action to learn
II	PREPARATION	B	Sets time to begin
III	MECHANICAL USE	C	Begins first use
IVA	ROUTINE	D	Routine pattern
IVB	REFINEMENT	D2	Modification to increase student impact
V	INTEGRATION	E	Modification for collaboration and coordination
VI	RENEWAL	F	Explores alternatives

Currently most staff members have been identified as non-users, while one has been identified as a novice. Loucks et al (1998), suggest that around 40% of groups can achieve routine usage within three to four cycles. This intervention aims to achieve this level within two cycles (i.e. two terms). It is envisaged that staff involvement in the in-service program and subsequent curriculum planning activity should promote their 'level of usage' to 'preparation'. Once the trial commences, usage will be further elevated to 'mechanical use'. Eventually by the end of the trial it is hope that the staff will be comfortable using the HPE C&SF II and therefore be considered routine users.

Wu Li = Enlightenment

Undifferentiated reality is the same reality that we are a part of now, and always have been a part of, and always will be a part of. The difference is that we do not look at it in te same way as an enlightened being [researcher]. As everyone knows (?), words on represent (re-present) something else. They ate not real things. They are only symbols. According to the philosophy of enlightenment, everything (everything) is a symbol. The reality of symbols is an illusionary reality. Nonetheless, it is in the one in which we live [and research]. (Zukav, 1977; p.270)

In the classic physical world of the Positivist, reality constitutes many separate objects or symbols. This research, in adopting a Post-positivist perspective is questioning this notion by suggesting that things do exist between these spaces. It is examining the space between the intended and learnt curriculum for evidence of teachers' exerting 'taught' influences on the intended curriculum.

At this point of the investigation, I have come to realise that attempts to construct 'complete' theories, models, or using Zukav's term, symbols need not be the aim of the research. Instead I have chosen to adopt a Post-Positivist stance that is concerned with the development of a 'maximal' theory concerning the implementation of the HPE C&SFII. By accepting that the Bernstein model cannot be used to predict the actions of teachers, I have

now embarked on a research activity to allow experience to inform an outcome that will talk of probabilities and concepts rather than certainties and laws.

The cat has been placed in the box. The lid is closed and the switch has been thrown. As I move towards the box with the intention of observing the outcome, I can't help but wonder. Am I the one observing the cat or is the cat waiting inside the box waiting to see what I am going to do? I suppose only experience can provide the answer to that problem.

References