Considering the efficacy of Interpretative Phenomenological Analysis (IPA) as a means to reveal teachers’ implicit theories of learning.

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1. Introduction
While it might seem axiomatic that teachers will have sophisticated understandings of learning there is evidence that this is not necessarily the case (Athey 1990; Duffy and Jonassen 1992; Drummond 1994; Marton and Booth 1997 and Watkins 2003).

Personal theories are thought to be formed as people experience the world and are said to serve to help them organise their world. These beliefs, personal theories or meaning systems (Dweck, 2000) are said to form schemas that give meaning to peoples’ worlds. This form of personal sense making has a long history in various disciplines (e.g. Personal Construct Psychology and notions of Habitats in Sociology) and forms the basis of much research (Kelly, 1955; Butler and Green 1998 and Salmon 1995) People may hold these theories consciously or they may exist at the ‘periphery of consciousness’ (Merleau-Ponty, 2003), in which case they may be said to exist at an implicit level. This presents a challenge for research methods as before they can be subjected to scrutiny they have to be made visible to the researcher.

Phenomenology is a philosophy developed by Husserl (1900) that is interested in understanding human experience and seeks to understand the participants ‘life world’. When applying phenomenological philosophy to psychology, the aim is to focus on people’s perceptions of the world in which they live and what this means

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to them, in other words, a focus on the lived experience (Langdridge, 2007). Interpretative Phenomenological Analysis requires the researcher to attend to the participants’ life world and then develop interpretations which help to explain what it is like to be that person in a particular context. This involves what Findlay (2008) refers to as the ‘dance’ between reduction (bracketing out the researchers preconceptions) and reflexivity, where the researcher is building interpretations and at this stage of the process must acknowledge their own perceptions, always going back to the participant’s words to ensure that the interpretations are grounded in the participant’s life world, or the ‘return to the thing itself’.

This paper will consider the efficacy of an interpretative phenomenological approach in developing understandings about the implicit theories of learning of 7 PE teachers at a Specialist Sports College in the South East of England. It is proposed that the analysis of data in this study involves a triple hermeneutic, that is to say the participant is interpreting the researcher’s questions; the researcher then uses their descriptions to try and understand the participant’s life world and then infers from this what implicit theories of learning the participant holds.

2. Implicit theories
There is a strong tradition of seeking to understand construing that seeks to understand how people see the world. This notion exists in different forms in several disciplines e.g. Personal Construct Psychology and Sociology with Bourdieu’s notions of *habitus*. However many of these personal constructions or theories may not be known to the person and may be said to exist at the periphery of consciousness. Personal theories are thought to be formed as people experience the world (Dweck, 1999). These theories are said to be the store of residual schemata or unconscious beliefs that are left behind by previous experiences and are used to make sense of current events (Claxton, 1996). People may hold these theories consciously or they may exist at the edge of conscious thought, in which case they said to be implicit. This presents a
challenge for the research method as if these theories exist at an implicit level they have to be discovered or made visible before they can be scrutinised (Sternberg 1990).

In considering previous empirical studies into implicit theories the methods employed have tended to rely on statistical analysis of existing psychological inventories and questionnaires rather than the in-depth qualitative approach intended in this study. In addition previous studies have tended to employ nomothetic approaches which are concerned with making claims which can be generalised to wider populations.
### Table 1: Summary of methods employed in some previous empirical studies into implicit theories.

The challenge for the method in such research is not just to reveal the participants thinking, a problem in itself as participants will not necessarily reveal their world view to order, but to be in a position to be able to make inferences about constructions that in a sense lie beyond articulation, and yet are reliant on language to reveal them.
3. Phenomenological psychological approaches

The etymological roots of ‘Phenomenology’ lie in a combination of the Greek words *phainomenon* and *logos*. ‘Phainomenon’ meaning a fact, occurrence, or circumstance which can be observed or is observable and ‘logos’ meaning ‘one who deals with certain topics’. So it can be viewed as the study of human experience and the way in which things are perceived as they appear to consciousness. The notion that every experience is a ‘consciousness of something’ or an object of consciousness is a central notion in phenomenology and is referred to as ‘intentionality’ (Sokolowski 2000, Langdridge 2007).

Phenomenological approaches have evolved over time. Husserl saw phenomenology as a return to the ‘thing itself’ or the perception of things in their appearing, what we may see as an essentially transcendental approach. By this he meant that in a sense that the study of peoples 'life world' was in a sense 'past logic' or highly subjective and therefore may be seen to represent an enterprise involving highly non-propositional knowledge. With the advent of Heidegger the movement took a more existential direction with a desire to develop better understanding of existence. This existentialist turn was further developed by philosophers such as Sartre and Merleau-Ponty before taking a more hermeneutic turn with the advent of Gadamer and Ricoeur.

The notion of ‘intentionality’ should not be confused with consciousness. In phenomenology the description of the general flow of life is referred to as a ‘natural attitude’ where we just get on with life and live it (Langdridge 2007). This ‘natural attitude’ is described by Dahlberg et.el. (2008) as a ‘naive’ understanding and is said to contrast with a phenomenological attitude whereby we reflect upon the natural attitude (Sokolowski 2007). A consequence of this is that much is hidden from view and therefore there is much to be revealed through the application of phenomenological methods, which seek to enable us to set aside the natural attitude or, at least become critically aware of it and therefore gain

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greater critical understanding of the assumptions at play in a person’s lived experience.

Husserl drew a sharp distinction between what is experienced noema and the way it is experienced noesis. In this case the subject is the person that comes to know an object. In this study the object being learning and the subject, being the participating teachers. Another way of looking at it is that the subject is the person who thinks acts and perceives, while the object is a thing that can be perceived. Husserl argued that all experience has to be an experience of something and therefore the correlation or the relationship between noema and noesis represents intentionality.

In a study that is concerned with implicit theories is important not to confuse ‘intentionality’ with consciousness. This is a study that is seeking to make interpretations about the participants’ implicit theories and so in effect is seeking to develop insights into constructions that are by definition not conscious to the participant. Husserl decided to start with the problem of how objects and events appeared to consciousness since he argued that nothing could even be spoken about or witnessed if it did not come through someone’s consciousness. It is to be noted here that consciousness is to be understood not as a limited awareness, but in a much broader sense, which would also include preconscious and unconscious processes (Giorgi and Giorgi 2008). In this preconscious is taken to refer to the reservoir of all that we can remember or can be subject to voluntary recall given appropriate circumstances. In this way we can see that it is quite possible that the relationship between what is experienced, in this case learning, and how it is experienced by the participants may well happen at many levels some of which will be implicit.

4. Interpretative Phenomenological Analysis (IPA)
4.1 IPA: The bringing together of phenomenology and hermeneutics

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IPA may be seen as the bringing together of 2 branches of philosophy namely phenomenology and hermeneutics. A problem with this is that as identified in section 3 phenomenology is far from a homogenous discipline. ‘Though there are a number of themes which characterise phenomenology, in general it never developed a set of dogmas or sedimented into a system.’ (Moran 2000, 4).

4.2 Comparing Interpretative Phenomenological Analysis (IPA) with Discourse Analysis (DA) and Grounded Theory (GT).

In order to locate Interpretative Phenomenological Analysis (IPA) within qualitative research paradigms is worth defining it in terms of what it is not as well as what it is and so in this section comparisons with discourse analysis and grounded theory be will be made under the headings of:

- What kind of knowledge does this method aim to produce?
- What assumptions does this method make about the world?
- How does this method conceptualise the role of the researcher?

These differences have been summarised in table 2.

The key difference between IPA, grounded theory (GT) and discourse analysis (DA) is an epistemological one. IPA is concerned with seeking knowledge about how people see the world and there is an assumption that people’s accounts reveal something about private thoughts and feelings. IPA assumes that participants seek to interpret their experiences into some form that is understandable to them (Brocki and Wearden, 2006, 88) and so the interview may be seen as a process by which the participant describes their life world and to an extent will be creating it through language. Discourse analysis is concerned with how events of reality are manufactured, negotiated and deployed in conversation and as such does not seek to produce knowledge of things but an understanding of the processes by which they are talked into being. Grounded theory is a method that is designed to identify and explicate contextualised social
processes. In GT data gathering and analysis aim to allow concepts and categories to *emerge* from the data without preconceptions and as such is underpinned by a *realist* orientation.

<table>
<thead>
<tr>
<th>What kind of knowledge does this method aim to produce?</th>
<th>IPA</th>
<th>Discourse analysis</th>
<th>Grounded theory</th>
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</thead>
<tbody>
<tr>
<td>IPA is concerned with knowledge of how people see the world. Assumption that people’s accounts reveal something about private thoughts and feelings</td>
<td>Concerned with how events are of reality are manufactured, negotiated and deployed in conversation. Does not seek to produce knowledge of things but an understanding of the processes by which they are <em>talked</em> into being.</td>
<td>Designed to identify and explicate contextualised social processes. Data gathering and analysis aim to allow concepts and categories to <em>emerge</em> from the data without preconceptions. Has a <em>realist</em> orientation.</td>
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<tr>
<th>What assumptions does this method make about the world?</th>
<th>IPA</th>
<th>Discourse analysis</th>
<th>Grounded theory</th>
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<tbody>
<tr>
<td>IPA is concerned with participants’ subjective experiences of the world. Assumes that people can ‘experience’ the same objective experience in radically different ways.</td>
<td>The concern here is with how language is constructive and functional. World is seen as a shifting and negotiable place where place that has to be understood through ‘reading’ language.</td>
<td>Assumes that social events and processes have an objective reality in the sense that they take place irrespective of the researcher and that they can be observed and documented by the researcher.</td>
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<tr>
<th>How does this method conceptualise the role of the researcher?</th>
<th>IPA</th>
<th>Discourse analysis</th>
<th>Grounded theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPA acknowledges that any insights gained from the analysis of a text will necessarily be a product of interpretation. Although IPA aims to understand the participant’s life world IPA recognises that this is only possible through the researcher’s engagement with and interpretations of their accounts.</td>
<td>As DA emphasises the constructive and functional nature of language, the role of the researcher is necessarily that of <em>author</em>. DA acknowledges the active role in the construction of the research.</td>
<td>Researcher acts as a witness. They must be careful not to import their own preconceptions into the process. The researcher’s role is to present in a clear and systematic manner a clear account of the social reality.</td>
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| Table 2: Comparing IPA, Discourse analysis and grounded theory. Based on Willig 2001 |

Each research method will have underlying assumptions that it makes about the world. IPA is concerned with participants’ subjective experiences of the world and assumes that people can ‘experience’ the same objective experience in radically different ways. With DA the concern is with how language is constructive and functional and the world is seen as a shifting and negotiable place that has to be understood through ‘reading’ language. GT assumes that social events and
processes have an objective reality in the sense that they will take place irrespective of the researcher and that they can be observed and documented by the researcher.

In terms of the researcher’s role IPA acknowledges that any insights gained from the analysis of a text will necessarily be a product of the researcher’s interpretation. Although IPA aims to understand the participant’s life world it also recognises that this is only possible through the researcher’s engagement with and interpretations of their accounts. DA emphasises the constructive and functional nature of language and therefore the role of the researcher is necessarily that of *author*. That is to say, DA acknowledges the researcher’s active role in the construction of the research. In employing a GT research approach the researcher is essentially acting as a witness and as such must be careful not to import their own preconceptions into the process. The researcher’s role is to present in a clear and systematic manner a clear account of the social reality.

In summary it is important to acknowledge that DA is a heterogeneous method with Wetherall (2001) having identified as many as six different ways of doing it. DA has potential as it is both ‘constructed’ and ‘constructive’ through language (Potter and Wetherall 1987) although it is a method that is less interested in the cognition behind the language and therefore may be seen to be limited in terms of revealing participants’ implicit theories. GT assumes that there will be an objective reality that can be identified through repeated analysis and theory building until a point of saturation is reached (Charmaz 2008). However this is potentially problematic as it is likely that the implicit theories the participants hold may well be inconsistent. In studying ‘Lay theories’ in social sciences Furnham (1988, 8-9) noted that: “People may also hold various beliefs about different aspects of social life whose implications or assumptions are mutually contradictory, but not realise that.” So it may be argued that IPA, a method that is

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5. Fieldwork

5.1 Interview schedule

In this study the fieldwork was carried out with 7 participants who were PE teachers in a Specialist Sports College in the South of England. Each participant was interviewed three times between June 2007 and May 2009. The first interview was a semi structured interview which was a broad sweep with the lead questions all rooted in themes that had emerged in the literature search (see appendix 1). The second interview was an unstructured one where the participants were asked to describe a lesson they had taught (recent to the interview) where they felt that the children had learnt a great deal. Because this is a study based within a phenomenological paradigm a key idea is to try and ascertain as far as possible how the participants see their world. In order to confirm the participants view of their world the transcriptions of the first 2 interviews were then subjected to an initial analysis and a bespoke schedule was developed for the third and final interview with a view to confirm or seek further insights into how they saw learning.

5.2 Sample

Participants need to be selected on the basis that they can allow access to the phenomenon under consideration (Smith et.al. 2009). Because IPA is ideographic and so concerned with in depth examination of the particular sample sizes are usually small. There tends to be an assumption of homogeneity because the researcher will be trying to find a sample for which the research question will be meaningful.
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### Table 3: Sample sizes of published IPA studies

<table>
<thead>
<tr>
<th>Paper/publication</th>
<th>Number of participants</th>
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### 6. Interpreting the data

#### 6.1 Principle data analysis

The process of analysing the transcriptions was carried out using the format shown in table 1 and recorded on a spreadsheet. Sections of the transcription that were felt to be significant were pasted into column 7. The participants name was put in column 4, the interview (first, second or third) was placed in column 5 and the numbered section of the transcription into column 6. Then an initial interpretation was made in column 3 and the interpretation allocated an overall theme in column 1. Finally a sub theme was identified in column 2. This enabled
the spread sheet to sort the data for each participant by theme and then by sub theme. A key idea is that some fragments of transcription can be used to develop several themes. So for the example given above the same section of transcription has been used to make 2 interpretations although in the analysis there were instances of several interpretations emerging from a single fragment of transcription.
Overall theme | Sub theme | Initial interpretation | Participant | Interview | Speech number | Transcription extract
---|---|---|---|---|---|---
How he conceptualises the role of the teacher | ‘Cause and effect’ | Can he ‘progress’ them through the levels? Does he see himself at the centre of things? | ‘Nathan’ | 2 | 2 | “…because I come to realise that progressing them quickly through the levels using the assessment framework is not really the idea I needed then I realised …I needed to build more of a foundation with them especially in their actual both physical and verbal vocabulary.”

How learning is conceptualised | Reliant on teacher | He says ‘he’ needs to ‘build’ the foundation. Does this preclude the children doing the ‘building’? | ‘Nathan’ | 2 | 2 |

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<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall theme</td>
<td>Sub theme</td>
<td>Initial interpretation</td>
<td>Participant</td>
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<td>Transcription extract</td>
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| How he conceptualises the role of the teacher | ‘Cause and effect’ | Can he ‘progress’ them through the levels? Does he see himself at the centre of things? | ‘Nathan’ | 2 | 2 | “…because I come to realise that progressing them quickly through the levels using the assessment framework is not really the idea I needed then I realised …I needed to build more of a foundation with them especially in their actual both physical and verbal vocabulary.”

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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>How learning is conceptualised</td>
<td>Reliant on teacher</td>
<td>He says ‘he’ needs to ‘build’ the foundation. Does this preclude the children doing the ‘building’?</td>
<td>‘Nathan’</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Table 3 - IPA analysis- overall analysis

6.2 Reduction and reflexivity

Creating data in a qualitative research context, the researcher is essentially a co-construction between participants, researcher and their relationship will inevitably be a factor (Findlay, 2003). The importance of recognising this at each stage of the research is vital if the interpretations are to be securely founded. Husserl saw that in order to get to understand the phenomena the researcher had to bracket themselves out of the research in order to get as close to the participant as possible. Husserl thought phenomenological practice required: “... a radical shift in viewpoint, a suspension or bracketing of the everyday natural attitude and all ‘world-positing’ intentional acts which assumed the existence of the world, until the practitioner is led back into the domain of pure transcendental subjectivity.” (Moran 2000, 2) in other words that as far as possible the ‘thing’ is to seen as the participant sees it.

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Reflexivity literally means to bend back on oneself and is described as: “..... the process in which researchers are conscious of and reflect about the ways in which their questions, methods and own subject position might impact on the psychological knowledge produced in a research study.” (Langdridge 2007, 58).

A problem with this is that not only may one’s own preconceptions may be ill formed and tacit to a degree: “Reflexivity implies rendering explicit hidden agendas and half formed intentions throughout the research.” (Gough 2003, 25).

It is also likely that the researcher will not aware of their impact on the research process and so in effect there is a double layer of doubt operating. The researcher is seeking to uncover the participant’s implicit theories of learning while at the same time needing to uncover their own implicit theories about what they might find. In order to try and track the thought processes a reflective log was kept by the researcher.

<table>
<thead>
<tr>
<th>Date</th>
<th>Reflections</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 July 2007</td>
<td>I realise that I am expecting them to have very ‘outcome’ notions of targets.</td>
</tr>
<tr>
<td>24 July 2007</td>
<td>So learning if about how we experience the world (Marton and Booth) - how interested are the teachers in how the children experience the world. Are the teachers interested in the pupils’ ontological perspectives? To what extent do I take time to really get to know the learners?</td>
</tr>
<tr>
<td>22 August 2007</td>
<td>When asked to say what factors they consider when planning tendency to focus on strategies they would use. Only ‘Liz’ talks about the children? ‘Tom’ assumes they will not like PE? This tends to grate with me as I like to think I assume that ‘liking’ PE is a very malleable perspective</td>
</tr>
<tr>
<td>2 October 2008</td>
<td>Thinking about ‘Jan’s’ interview is there an assumption that learning faster is better, if so in what ways it is better? Realise that I feel strongly that ‘learning’ will take as long as it needs and that ‘faster’ does not necessarily mean better. If they ‘pick it up’ fast are they learning or just rehearsing things?</td>
</tr>
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Table 4 - Extracts from reflective log
It is tempting to see the interaction of reduction and reflexivity as a kind of ‘resultant’ whereby reduction plus reflexivity leads to a resulting outcome. However this would assume that each is set in some way. Interpretation of data within a phenomenological paradigm needs to be an iterative ongoing process (Smith et. al. 2009) and so may be viewed as a continual process of interpretation and re-interpretation. In the same way that it may be argued that learning is always contextualised, in other words there can be no learning without something being learned. The process of revealing the researchers perspectives cannot happen in a vacuum and so is stimulated by the consideration of the topic and being aware of one’s own reactions to the participants’ responses.

6.3 The ‘dance’ between reduction and reflexivity
The relationship between reduction and reflexivity is described by Findlay (2008) as a ‘dance’ and is illustrated in diagram 1. At the start the research moves as close to the participant as possible (top arrow in diagram) at the interview through listening carefully and through judicious use of prompts and empathy seeks to allow the participant (P) to reveal their perspectives and as far as possible suspends their own preconceptions and so there is a process of reduction or bracketing operating. In the next stage the researcher brings the focus back to themselves (bottom arrow in diagram) and at that point tries to acknowledge their own fore understandings and so is applying a reflexive focus to the process. Because this needs to be an iterative process the researcher can then oscillate, or dance between their own perspectives and the participants words (p). By continually going back to the participants words the researcher tries to keep the interpretations firmly based in the participants life world.
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Diagram 1 – Diagram to illustrate the hermeneutic circle.

6.4 Vignettes
Alongside the principle analysis vignettes were developed based on small fragments of transcription (see table 5) using a four step process based on the hermeneutic circle outlined in section 6.3.

1. Stage 1: place a fragment of transcription into column 4.
2. Stage 2: make an initial interpretation of the participant’s perspective.
3. Stage 3: develop a reflexive perspective.
4. Stage 4: infer implicit theories

P= Participant themselves
P= Participant’s words
The first step was to place a fragment of the transcription that was felt to be of interest into column 4. In stage 2 of the analysis, column 3 was used to make an interpretation of the participant’s words in order to try and understand the participant’s ‘life world’ with regard to their conceptions of learning. Within a phenomenological paradigm this may be seen as trying to understand the Dasein which Heidegger describes as the essentialness of ‘being-in-the-world’ (Guigon 1983, 19) or the ‘how’ of human existence (Moran 2000). So in response to the question:

**Researcher**

“Right….In your mind are the projects of helping….children go up levels….if you like …and for example learn through P.E. ..are you happy that they are congruent?”

Nathan responds with:

‘Nathan’

“ I feel that they work together brilliantly…I have one fear about it *(Kent assessment)*…and that is moving between activity areas within a year plan every 6 weeks am I not going to be just knocking back children from the level that they had achieved within the previous 6 weeks as they move on to the next 6 weeks….will they be returning back…. to the stage that’s they were at.....I feel that because… of the way that I am teaching in order to try and develop an understanding of the evaluating and improving aspect …I think that they should be able to take that no matter what and apply it to the next activity area….then what they will fall back on possibly is their performance …acquiring and developing….selecting and applying certainly…..so in terms of developing learning ……..and then with PE..I feel that it does move forward ……but I wonder what will happen when it gets to that point at the end of the 6 weeks…that is something I will need to find out what will happen.  

*(Interview 1, lines 33-34)*
For the purposes of this research this is a rich extract and as can be seen in the vignette there are a number of interpretations that may be made. The first stage of interpretation a fragment was taken and an initial interpretation was written.

e.g. *Here he talks about ‘developing’ understanding of evaluating and improving. He says ‘I’ am teaching which could mean he feels he enables the children to do this or that he feel his teaching causes this to happen in which case he is saying there is a causal link between what he ‘teaches’ and what children learn?*

At this stage the idea is to stay as close to the participants words’ while at the same time being mindful that the small sections can illuminate the whole. There is a dynamic relationship between the part and the whole. “To understand any given part, you look to the whole; to understand the whole, you look to the parts.” (Smith et. al. 2009, 28). This also illustrates the idea of the double hermeneutic (Smith and Osborn 2003) where the researcher is making sense of the participants as they articulate their understanding of the topic under consideration, in this case their perceptions of learning. This stage also represents the first step of the hermeneutic circle discussed in section 6.2 where the researcher is trying to get as close to the participant and understanding the *dasien* as possible where the researcher is seeking to suspend their own preconceptions or applying the reduction (Findlay 2003). The next step in the process of applying the hermeneutic circle is to return to the researcher and at this stage the researcher is attempting to acknowledge their own preconceptions (reflexivity) and at this stage the literature may be drawn upon to develop the interpretations.

In this example the following reflexive commentary was developed:

*I am realising more and more that I am coming to this with the idea that I am going to find that the teachers will implicitly see learning as essentially a*
'transfer' or filling empty bucket manner. My explicit theory would be that all knowledge will be idiosyncratic and even though we may share similar world views these will be framed within personal cognitive frameworks. I cannot see that the relationship between teaching and learning is in any way a ‘causal’ one. Rather that ‘teaching’ may stimulate a series of quite random and disparate responses in the learner that may well not become evident in the short terms and that the learner may choose not to reveal.

In this research the intention is to try and uncover the participants’ implicit theories and so there is in effect a treble hermeneutic. That is to say, the researcher is making sense of the participants as they articulate their understanding of the topic under consideration and then has to infer from their verbal reports what implicit theories they are holding. In other words in the example above Nathan responds to the question about levels and the researcher is able to make an interpretation. “What he is saying is that ....” This illustrates the double hermeneutic described by Smith and Osborn (2003). In order to make an interpretation about the implicit theory there needs to be a third level of interpretation where the researcher makes inferences about the implicit theory of learning. In this instance he is saying that ‘he’ needs to ‘build’ the foundation ‘with’ the children which may be interpreted that he sees himself at the centre of the learning process and that he is saying that implicitly he sees a causal link between his teaching and the children’s learning.
<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
<th>Column 4</th>
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<tbody>
<tr>
<td>Inferred implicit theory</td>
<td>Reflexive response</td>
<td>First interpretation</td>
<td>Transcription</td>
</tr>
<tr>
<td>My feeling is that he is determined to make the KAF work. Implicitly he is saying that learning can be generic and that the transfer of competence in unproblematic?</td>
<td>This seem so obvious to me. I believe that learning is related and dependent on context. It has to be about learning something.</td>
<td>That in effect the 'level' they can qualify for is related to the activity although that is not the principle enshrined in the assessment framework</td>
<td>Researcher “Right….In your mind are the projects of helping….children go up levels….if you like …and for example learn through P.E. ..are you happy that they are congruent?”</td>
</tr>
<tr>
<td>Based on his comments I think he assumes he has control over the learning outcomes. Implicitly he assumes that there is a causal link between what he does and what the children learn.</td>
<td>This strikes me as almost naive although I am not surprised. It seems that within a policy landscape as it is that there is an underlying assumption that there will be a causal link</td>
<td>He assumes that there is a causal link between teaching and learning.</td>
<td>‘Nathan’ “ I feel that they work together brilliantly….I have one fear about it (Kent assessment)...and that is moving between activity areas within a year plan every 6 weeks am I not going to be just knocking back children from the level that they had achieved within the previous 6 weeks as they move on to the next 6 weeks....will they be returning back…. to the stage that’s they were at….I feel that because….of the way that I am teaching in order to try and develop an understanding of the evaluating and improving aspect …I think that they should be able to take that no matter what and apply it to the next activity area….then what they will fall back on possibly is their performance …acquiring and developing….selecting and applying certainly.....so in terms of developing learning …….and then with PE..I feel that it does move forward ……but I wonder what will happen when it gets to that point at the end of the 6 weeks...that is something I will need to find out what will happen. (Interview 1, lines 33-34)</td>
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<tr>
<td>Not clear in this section how he envisages this understanding developing. It may be that he has a tacit understanding that is aligned with a positivist perspective. There is knowledge and the children have to ‘grab’ it.</td>
<td>It seems to me that all knowledge will be idiosyncratic and even though we may share similar understandings.</td>
<td>Here he talks about 'developing' understanding of evaluating and improving. Does he mean he enables this or that he causes it?</td>
<td></td>
</tr>
<tr>
<td>Implicitly he sees transfer of competence as straightforward and is surprised when the children ‘don’t get it’ whereas I would see this as a predictable consequence of such an approach.</td>
<td>I see the transfer of competence as highly problematic. My feeling is that learning is very closely linked to context.</td>
<td>He thinks they should be able to- is this a case of having belief without knowledge?</td>
<td></td>
</tr>
</tbody>
</table>

Table 5: Example of a vignette.

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An issue with then inferring implicit theories of learning is that how the teacher conceptualises the teaching process, assessment, how learning is conceptualised and lesson aims are difficult to isolate and so where it was felt appropriate multiple interpretations for the same fragment of transcription were employed. The interpretations in column 3 seek to capture the essence of the *dasein* as represented in Nathan’s words. The notion of the double hermeneutic is then illustrated through the analysis in column 3 where the second hermeneutic is to understand the participant’s world view of learning. In column 2 the focus comes back to the researcher through a reflexive commentary. Sternberg reminds us that implicit theories exist in some form in the minds of people and as such need to be discovered. As they may be said to exist at the periphery of consciousness, the best that can be done is that they are inferred though a third level of interpretation. Therefore the last stage in the vignette is that in column 1 inferences about ‘Nathan’s’ implicit theories are made.

### 7. Discussion
The previous empirical studies into aspects of implicit theories (see section 2 and table 1) employed methods more related to nomothetic methods and as such relied on questionnaires, self reporting psychological inventories, involved larger samples and statistical approaches to analysis whereby regression analysis was utilised. A disadvantage of such methods is that they tend to work best with binary variables and which may be a disadvantage when seeking to uncover the complexities that are likely to be involved when seeking to reveal participants’ implicit theories. This paper has set out to examine the efficacy of IPA to make judgements about teachers’ implicit theories of learning which by definition will be personal theories that are not readily available to the person who holds them. That is not to say that there is a binary operating where the personal theory is either implicit or explicit. Rather that these theories are likely to exist as a jumble of nascent and ill formed constructions. In reflecting on the extent to which this
method is ‘fit for purpose’ it is necessary to consider issues related to intentionality, the extent to which verbal reports can be used to infer implicit theories, problems related to the ‘natural attitude’ and within the structure of this research the extent to which implicit theories might be malleable.

7.1 Intentionality
In employing a method based in phenomenology to make interpretations about such theories attention needs to be given to the notion of ‘intentionality’ which is a core feature of phenomenology.

“That every act of consciousness that we perform, every experience that we have is intentional. It is essentially consciousness of ‘something’. “

Sokolowski, R. (2000, 8))

We can see that ‘intentionality’ may be seen as the relationship between what is experienced (noema) and the way it is experienced (noesis) (Langdridge 2007). In trying to capture the way that the world is seen by an individual, phenomenology is concerned with developing knowledge that is non-propositional (Willig 2004). However this is not to say that

“Husserl decided to start with the problem of how objects and events appeared to consciousness since nothing could even be spoken about or witnessed if it did not come through someone’s consciousness. It is to be noted here that ‘consciousness’ is to be understood not as a limited awareness, but in a much broader sense which would also include preconscious and unconscious processes.” (Giorgi and Giorgi 2008: 26)
The notion of ‘preconscious’ is applied to thoughts that at unconscious at a particular moment but are, in Freudian terms not repressed and so are available for recall and are therefore capable of becoming made conscious. So it seems that there is a strong argument to suggest that the relationship between the \textit{noema} and the \textit{noesis} may well exist at an implicit level.

\subsection*{7.2 Validity of verbal reports}

IPA is concerned with cognition and it is proposed that IPA is compatible with a social cognition paradigm because it subscribes to a belief in, and a concern with, the chain of connection between verbal report, cognition and physical state’ (Smith \textit{et.al.} 1999: 219). In other words there is a Cartesian conceptualisation of the person as the owner of a set of cognitions that they use to make sense of their world (Willig 2004). IPA starts from the position that the accounts people give will tell us something about their more private thoughts, feelings and perspectives so in this study there is an assumption that it is possible to make interpretations about the participants’ implicit theories of learning through analysis of their interview transcriptions. So while there is likely to be ‘distortion’ in the sense that participants are likely to wish to present themselves in particular ways the analysis and interpretation of their verbal accounts offer a valid source of data to infer implicit theories.

\subsection*{7.3 The ‘natural attitude’}

In section 3 the two attitudes or perspectives referred to as the \textit{natural attitude} and the \textit{phenomenological attitude} (Sokolwski 2000) were considered. In the natural attitude the process of understanding is \textit{naive} or not reflected upon (Dahlberg et. al. 2008) whereas the \textit{phenomenological attitude} is concerned with reflection upon the natural attitude. Thinking about this research this is relevant for two reasons. Firstly the notion of implicit theories is resonant with the notion of the ‘natural attitude’ in that its concern is with constructions that are not available to consciousness. Secondly, while learning is clearly central to the
business of teaching and learning and yet it seems possible that in the current school cultures teachers reflection on aspects of learning do not form a major part of teachers discussions.

7.4 The malleability of implicit theories
The data in this study was generated between June 2007 and May 2009 and this must raise a question about the extent to which the analysis was considering a phenomenon that was relatively fixed or changing and evolving. Our existence in the world may be seen as ‘non-static’ (Conroy 2003) however it seems probable that the changes will be of a very uneven nature. Bereiter and Scardamalia (1996) talk about the phenomenon whereby a student may acquire a new cognitive structure that allows them to answer questions and solve textbook problems related to Newtonian physics but their mental model may remain relatively unchanged. In other words they may well simultaneously hold quite different constructions about what is essentially the same area of knowledge. In this study it is postulated that if teachers were asked to articulate a ‘textbook’ definition of learning they might suggest that learning is an essentially idiosyncratic process of constructing understandings about the world but at the same time see learning as a more simple process of transfer.

8. Conclusion
Implicit theories are constructions that by definition exist at the edge of consciousness and so the challenge for the researcher is to reveal them in order to subject them to some scrutiny. In choosing IPA, a method based in phenomenological psychology, there is an assumption that analysis of the participants’ verbal reports will provide sufficient data to enable the researcher to make inferences about the nature of the participants’ implicit theories. As we have seen this is not without problems as how the participants see the research situation and what they feel able to reveal will inevitably impact on the data
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generation. However the arguments that the interpretations made will be of interest seem to be robust.
Bibliography


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Appendix 1

### First interview

<table>
<thead>
<tr>
<th>Question themes</th>
<th>Origin in the literature/ purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PE biography</strong></td>
<td></td>
</tr>
<tr>
<td>1. What do you remember about PE when you were at school?</td>
<td>○ Place of their school experiences in shaping perspectives. (John 1996; Brookfield 1995).</td>
</tr>
<tr>
<td>2. What did you feel your teachers wanted children to get from PE lessons?</td>
<td>○ To see how they ‘place’ learning in their own school experience.</td>
</tr>
<tr>
<td><strong>Learning in PE</strong></td>
<td></td>
</tr>
<tr>
<td>1. What do you see as the aims of P.E?</td>
<td>○ To gain insight into their perspectives about learning as an ‘entity’ or ‘incremental’ commodity. (Dweck 2000)</td>
</tr>
<tr>
<td>2. Have you always felt this? What caused you to change?</td>
<td>○ To get a perspective on how they ‘classify’ learning. (Marton and Booth 1997).</td>
</tr>
<tr>
<td>3. What do you feel are the barriers that prevent children learning in PE lessons?</td>
<td>○ Teachers’ beliefs about their capabilities to help students learn. (Deemer 2004).</td>
</tr>
<tr>
<td>4. What sort of strategies do you use to help children learn in PE?</td>
<td></td>
</tr>
<tr>
<td>5. What kind of things do you do when children fail to learn in PE?</td>
<td></td>
</tr>
<tr>
<td>6. What factors do you consider when planning lessons?</td>
<td>○ How do they view learning in PE?</td>
</tr>
<tr>
<td>7. What do you consider to be good targets for children in PE?</td>
<td>○ Get perspectives on how they ‘place’ learning in their talk about their practice.</td>
</tr>
<tr>
<td><strong>Theories of teaching</strong></td>
<td></td>
</tr>
<tr>
<td>9. What do you feel are your strengths as a Teacher?</td>
<td>○ To get an insight into where participants’ place learning is placed in their practice and their aspirations?</td>
</tr>
<tr>
<td>10. What aspects would you be most keen to strengthen?</td>
<td></td>
</tr>
</tbody>
</table>

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